Mobile remittances as sociotechnical networks: An Actor-Network Theory case study

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ABSTRACT

The use of formal remittance channels between developing countries is highly variable. In particular, take-up of digital retail payment channels to facilitate remittance formalisation is often sparse and subject to resistance. Through the case of an emergent mobile phone-based international money remittance channel, this study sought to understand how a service provider utilises legitimation strategies to create a stable channel (network) and enhance user uptake. Prior studies, mainly influenced by a cognitive tradition, tend to explain uptake of mobile payments, mobile banking and mobile money services either through features of the technology such as interface design or through individual motivational structures.

There is a paucity of research on how such Information Communication Technology innovations are created and deployed in developing countries' settings, which may shed light on why they may result in failure or success. Research that traces core processes involved in the formation of such emergent and complex sociotechnical networks including identifying primary actors and their relationships is sorely lacking. Thus, assuming Actor-Network as a theoretical base, this study sought to theorise about how a mobile remittance network was created along the South-Africa-to-Zimbabwe corridor; identify actors and their interests in that network; trace what associations exist in that network; how relationships evolve; how actors are enrolled in the network; how parts of the network form a whole network; and, how the network attained temporary stability or, conversely, why the network may be unstable. Interestingly, ANT assumes context to be emergent and that actors and their relations is all that is needed to understand phenomena. As a consequence of this radical ontological stance, the lens is criticised for overly focusing on micro- (individual) level actor interactions and neglecting the existence of context thus under-exploring how broader social structures, their role and interests influence local action and the stability of sociotechnical networks. Challenging this assumption emerged as an area of potential theoretical contribution.

My contribution to theory was to demonstrate that sociotechnical network creation takes more than human and technological actors and their actions, as the ANT assumes. I argued for a pragmatic application of the ANT. This entails taking institutions seriously. I augmented ANT with institutional legitimation strategies from the Legitimacy Perspective to foreground the influence of social structures. I argue that social structures are active non-human actors in which interests have been inscribed that should not be obscured or downplayed.

At the macro-level of analysis, the analysis reveals that a hybrid of argumentation, manipulation, selection and adaptation strategies helped to account for the concealed but important social, cultural, political and historical actors that facilitate or constrain the four stages of translation (Problematisation, Interessement, Enrolment and Mobilisation) during the network building process to achieve desired stability. My thesis demonstrates that if the focal actor (service provider) finds a way of communicating (such as using symbolic management) with heterogeneous actors (often with contradictory interests) that resonates with the target potential allies' norms, values and standards, enrolment and stability of a sociotechnical network may be facilitated and enhanced.

Working in combination, the findings of ANT and the Legitimacy Perspective offered some rich perspectives that deepen our current understanding of sociotechnical network. The study highlights that sociotechnical networks are also products of institutional settings in which they are immersed hence the need to foreground the highly contextualised character of network creation. Wider context in which sociotechnical networks are created and immersed consist of actors on a higher level of analysis which should be viewed as other parts of the network. In addition to their relational nature, networks are not only emergent but are also historically-shaped. Likewise, the study is also significant in that it brings to the fore the significance of politics and power at both the micro and macro-levels of analysis, which provides a basis for practitioners to understand why some sociotechnical networks stabilise (i.e. are eventually employed as remittance channels) while others fail to scale-up. I envisage this case study to provoke debate about the size of the opportunity for international remittance service providers and how far they should go to seize it using emergent digital mechanisms.

Key Words: Sociotechnical network, Information Communication Technologies, digital retail payment services, translation process, organisational legitimacy, institutions, remittances.

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SIGNATURE: Nicholas Ndebele

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CHAPTER 1

INTRODUCTION

1.1 Background

According to the World Bank (2018) global remittances flows – the money sent by migrants to their home countries, mostly to their remaining families - are projected to grow by 3.7% to $715 billion in 2019. Yet, the global average cost of sending $200 remains high at 6.9% in the third quarter of 2018. A global target under Sustainable Development Goals (SDGs) is to reduce remittance costs to 3% by 2030. In 2018 the global remittance flows were estimated to exceed $690 billion. Developing countries were estimated to have received $530 billion of this total amount, which was equivalent to three times the amount of Official Development Assistance (ODA). In addition, remittances made up 10% of Gross Domestic Product (GDP) in some 27 developing countries.

Extant literature suggests that the exponential growth of remittances over the years has raised interest around the issues of remittance channel choice in order for recipient countries to positively impact economic development (Ambrosius & Cuecuecha, 2016; Kosse & Vermeulen, 2014; De Haas, 2012; Makina, 2012; Aggarwal et al., 2011; Karafolas & Konteos, 2010; Freund & Spatafora, 2008). In this context, a high mobile phone penetration has allowed an emergence of innovations like mobile money services that have been instrumental in improving access to payment services for the unbanked and underbanked population segments. For example, mobile technology has been introduced to facilitate international remittances to developing countries. The use and success of this new formal remittance channel between developing countries is highly variable.

There is paucity of empirical and theoretical research on the international mobile remittance phenomenon coming out of Southern Africa. This can be ascribed to the limited availability of reliable secondary datasets. In this part of the world, most studies on mobile remittance technology come from practitioners and development agencies (e.g. Maurer et al., 2018; Mas, 2017; Nyanhete, 2017; Harry et al., 2014; Mas & Ng'weno, 2012; Morawczynski, 2011). Using theoretical resources from Actor Network Theory and the Legitimacy Perspective, this study sought to explore the how the prime motivator for a mobile-based remittance channel project

(henceforth referred to as the focal actor) built an ecosystem by enrolling a heterogeneous set of actors to enable cross-border money transfers.

Mobile-based payment solutions

This study comes on the back of the proliferation of mobile money technology and several other applications based on text, voice data and multi-media, which are riding on rapid growth in mobile phone subscription since the onset of the millennium (Fanta et al., 2016). This has created converged information communication systems leading to new technology-based products and services. For example, originally unrelated telephone communication technology and banking have become more closely integrated and even unified as typified by mobile money technology. This has brought into sharp focus the element of complexity in these emerging digital payment channels which, as demonstrated later in this account, was very significant in shaping my choice of research lenses.

Drawing on the marketing literature (e.g., Kotler & Keller, 2016), I define "channel" as a mechanism through which a product, a service, and/or information is delivered. For example, existing remittance channels include physical cash transfers through a courier, normal banking channels (including internet and mobile banking) or a mobile phone-based remittance. These are mechanisms through which customers such as remittance receivers get remittances, services, and/or information. Related to this study, the mobile phone handset has effectively ceased to be a mere communication gadget, rather it has morphed into a payment tool (Kremers & Brassett, 2017). Perhaps the well-known examples are the M-Pesa case in Kenya (Avgerou, 2016; Hayes & Westrup, 2012) and EcoCash in Zimbabwe (Nyanhete, 2017). These are examples of low-cost innovations for transferring money.

GSMA (2015) posits that "Mobile money has done more to extend the reach of financial services in the last decade than traditional bricks and mortar banking has in the last century" (p. 8). By 2015, the service was available in 85% of countries where most of the population had inadequate access to formal financial services (GSMA, 2015). The diffusion of this innovation is attributed to various factors that include the simple SMS technology and the low-cost phones and payment costs. The advent of these significantly cheaper, safer, faster and legal technology-based channels are also credited for improving financial inclusion globally (Avgerou, 2016). However, little is known about how these platforms are created, which may throw some light on why their success in implementation in similar settings might still vary.

GSMA proclaims that this technology has potential to reach even more underserved segments particularly migrants, women and rural citizens. It is this lacuna of variable access in the financial services market for the poor and the vulnerable groups that has provided an inimitable niche for the mobile network operators (MNOs) to venture into space that is traditionally a preserve of financial services providers, to facilitate access to financial services to more people for the first time (Ondiege, 2015). Likewise, Harry et al. (2014) assert that mobile money is emerging as an innovative and transformational new technological development in the remittances space in Sub-Saharan Africa, a region where financial exclusion has been rampant.

Against this promising backdrop, informal mechanisms such as cash transfers through bus and truck drivers, cross-border couriers and visiting family members retain some residual loyalty (Onsongo & Schot, 2017). These informal channels are not only perceived to be cheaper and reliable but also accessible and convenient (Kosse & Vermeulen, 2014; Pieke et al., 2007). Thebe and Mutyatyu (2017) cite the socially embedded character of informal channels of remittances as the reason why it would be difficult to replace cross-border couriers known as "Omalayisha" with contemporary mechanisms such as the emergent mobile remittance service under investigation. Likewise, Maurer et al. (2018) concur by attributing continued dominance of informal payment channels to the entrenched nature of cash-based remittances.

Information Communication Technology for Development (ICT4D) research has repeatedly witnessed failure of Information Communication Technology (ICT) projects such as mobile money. For example, the mobile money model failed in South Africa notwithstanding the fact that the country has a significant population of unbanked low-income segments (Ramadani et al., 2018). In contrast, implementation of this innovation was a huge success in Kenya and Zimbabwe, which are both developing countries with similar conditions as those in South Africa. Literature proffers various explanations for such interesting variations.

Different perspectives on ICT project implementation

While adoption literature is replete with studies showing why the extension and appropriation of mobile banking solutions to mediate cross-border remittances may fall short of what is expected (Shaikh & Karjaluoto, 2014; Kosse & Vermeulen, 2014; Chisasa, 2014), there is dearth of academic research on *how* such innovations as the emergent mobile remittance projects are implemented to provide a better understanding of why some may fail while others may scale-up. Avgerou (2016) argues that understanding local contexts may shed light on why a success story in one part of the developing world has been difficult to replicate in another.

More recently, greater interest in human-technology actor relationships has been generated through concepts such as actor-networks and sociomateriality (Leonardi, 2011). Such concepts, which will be dealt with in more detail in the ensuing segment, contribute to a view of ICT innovation as a process of dynamic interaction of human actors with digital artefacts bearing a potential for new and complex sociomaterial assemblages (Avgeou, 2019). Therefore, understanding the role and interests of humans as well as non-humans actors (e.g. technological artefacts) may shed light on the success or failure of complex contemporary ICT innovations.

Figure 1.1: Multiple actors involved in international remittance channels
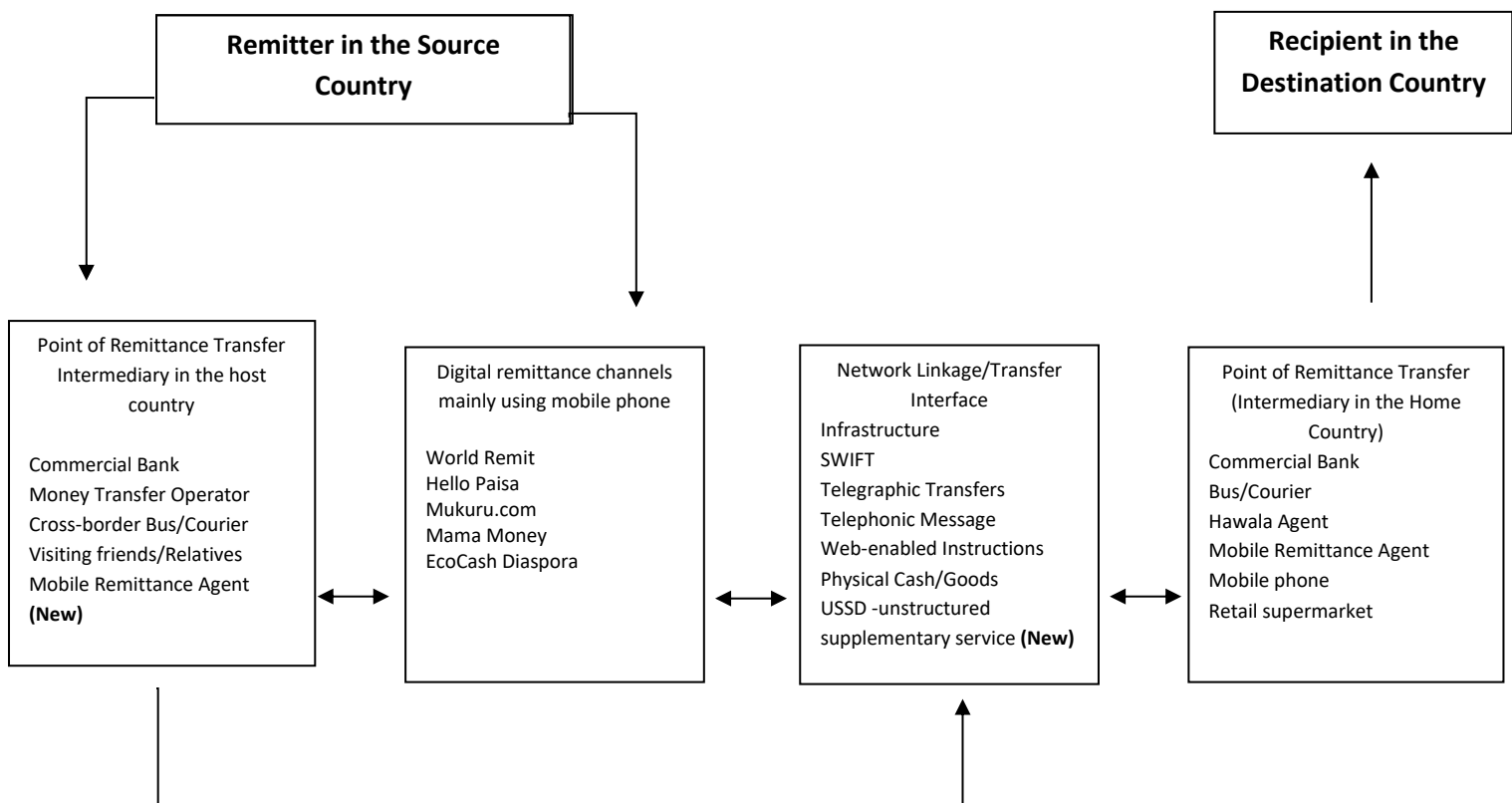
A very brief introduction to theoretical underpinnings

Classical adoption literature lenses such as Diffusion of Innovations Theory (Rogers, 1995), Technology Acceptance Model (TAM) (Davis, 1993) and the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003) are commonly used in information systems (IS) studies (Orlikowski & Scott, 2008) in general and mobile payments in particular (Dahlberg et al., 2015; Dennehy & Sammon, 2015; Shaikh & Karjaluoto, 2014). While these models have provided important insights into the role and function of technology in

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organisational environments, the significance of various extraneous technical and social factors is typically obscured, underplayed or neglected. These lenses generally and simplistically assume that if a technological innovation has capabilities, it is transferred and invariably appropriated (Tatnall, 2013, Bagozzi, 2007). Their focus is on why technological artefacts and social relations influence each other thus amplifying the dualism aspect (social versus technological factors) in studying ICT project implementations (Leonardi, 2011).

The recognised limitation with adoption literature is that it typically seeks to measure members' response (e.g. acceptance, perception, or use) during the diffusion process, for which it is criticised for being deterministic and linear (Diniz, Bailey, & Sholler, 2014; Brown & Thompson, 2009). Adoption lenses also usually focus on the appropriation and impact of Information Communication Technologies (ICTs) on developing countries while neglecting the social context in which bi-directional interactions between technology and target adopters occurs (Sahay et al., 2013). The inevitable influence of other nuances deriving from unique cultures, institutional rules or political motives is often neglected (Ramadani, Kurnia, & Breidbach, 2018). This invariably results in a limited understanding of why some technological implementations fail while others succeed in seemingly similar settings.

Similarly, another criticism levelled at researchers using adoption theories, which is central in this study, is that the researcher stands outside the human-technology interaction processes they seek to investigate, thus, concealing the main actors and significant actions that determine the trajectory (success or failure) of an ICT implementation. Consequently, the researcher elicits only a partial understanding of the dynamic influence of both the social and the material in ICT implementation (Heeks & Stanforth, 2015; Tatnall, 2009, 2013) which renders some of the accounts anchored on adoption literature somewhat lacking (Avgerou, 2013).

Adoption literature is also criticised for suggesting that technology is merely "transferred" and subsequently used exactly as planned during design. On the contrary, technology is often adapted and modified to suit the local contexts and their circumstances (Ramadani, Kurnia, & Breidbach, 2018; Avgerou, 2016). In fact, patterns of use of technology are often learnt or acquired because "… designers of technological artefacts cannot fully determine the goals and patterns of use that attach to their technologies – these are not always predictable or 'prescribable" (Michael, 2017, p. 42). The innovations designed and produced often have consequences beyond what could be predicted (Michael, 2017). Mobile money is a typical example of a service that evolved when users discovered that it can be used for transferring

value (money) in addition to communication. This was far from the prior intention of the mobile phone technology designers (Van der Boor et al., 2014).

I argue for alternative research tools to elicit rich insights on ICT implementation in the light of the emergence of complex organisations in the developing countries and equally complex digital payment systems with short product life cycles. These developments are emerging in extremely fluid settings characterised by fast evolving socio-economic and political conditions. Critically, mobile remittance sociotechnical networks entail interwoven telecommunications and banking systems with their own complex networks of material (e.g. technological) and social elements with critical roles and often divergent interests. This heightens complexity.

While proponents of adoption literature will magnify the parsimony of adoption lenses such as the Technology Acceptance Model (TAM) as a strength in simplifying reality (Shaikh & Karjaluoto, 2014), the flip side of this is that this simplification should not mask the complexity of contemporary ICT innovations. Law & Mol (2002) argue that scholars need to recognise this challenge and consider various possible scenarios to find a balance between a desire for simplicity and a recognition of complexity. Given the foregoing, Scot and Orlikowski (2015) proffer the sociotechnical systems perspective because it pays close attention to complexity.

The sociotechnical concept was introduced as a response to the preponderance of technological determinism and social determinism as researchers attempted to understand technological implementation in different settings. Technological determinism arises when a researcher views technology as a static object that is not modifiable by humans because of some overt power to direct the actions of people (Booth et al., 2016). In contrast, socially deterministic perspectives like the Technology Acceptance Model (TAM) view human agency (ability to act) as the determining factor of human-technology relationships during ICT implementation.

To help move past that obvious dualism, a sociotechnical network perspective assumes that in as much as humans have the ability to influence technology, equally, technology has the ability to influence humans. Thus, a sociotechnical network is a system (e.g. an organisation) where technical dimensions (e.g. a specific mobile money IT system) and social dimensions (e.g. attitudes and relationships of stakeholders) are entangled (Introna & Whittaker, 2006). The degree to which these shape, fit and complement each other is argued to be imperative in determining how the total system (or organisation) functions (Cresswell et al., 2011).

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Complexity of such networks cannot be accounted for merely by invoking either social or technological factors (dualistic approach) as is the norm in adoption literature. The notion of "organising" is fundamental to sociotechnical networks. Thus, an organisation is conceptualised as an accumulation of events and actions by different actors, departing from an organisation as a structure towards an organisation as a process (Cresswell et al., 2011). In this study, diverse social groups of actors include regulators, engineers, software designers, entrepreneurs, consumers, and many others who have to be enrolled and their interests aligned for a stable sociotechnical network. This informed my choice of a sociotechnical lens to help me understand *how* the mobile remittance channel was created.

I found Actor-Network Theory (ANT) to potentially offer an approach that generates a deeper understanding of the phenomena of socio-technical change (Latour 1987, 1992, 2005; Law, 19911992, 2001; Callon 1986a, 1986b, 1991). It draws on the sociotechnical systems perspective. While it is an increasingly influential lens, it is still a deeply contested approach to understand humans and their interactions with technology (Walsham, 2017; McLean & Hassard, 2004). Nonetheless, it is a particularly germane and powerful lens to trace and analyse the construction and implementation of mobile remittances as a socio-technical process because of its strength in addressing complexity (Heeks & Stanforth, 2015). Innate to ANT is a shift away from the idea that technology impacts on humans as an external force – a view associated with the cognitive tradition - to the view that technology has the potential to shape social interactions (Creswell et al., 2011; Latour, 2005). This assumption addresses the bane of dualism when exploring human-technology relationships, a limitation associated with adoption literature (Tatnall, 2013).

Brief introduction to Actor-Network Theory (ANT)

I employed ANT as the main theory for data generation and analysis in this case study. It assumes the world as consisting of networks (Law, 1992). These networks comprise "actors" that can include humans, things, ideas, concepts (Booth et al., 2016) This perspective views "the social and the material (as being) inextricably related – there is no social that is not material, and no material that is not also social" (McLean & Hassard, 2004, p. 1437). Critically, ANT amplifies the agency of inanimate elements such as technologies, and their effects on social processes. It assumes that both technical and social elements of a network have interests and actively shape its trajectory (Creswell et al., 2011). Thus, privilege in the relationship is not automatically granted to either the social or technical actor; rather, both the social and the

technical are considered to be "constitutively entangled in everyday life" (McLean & Hassard, 2004, p. 1437).

Unlike adoption lenses, ANT focuses on associations rather than properties of a technology or its users. A mobile remittance service illustrates dynamic interactions between human and non-human actors in fabricating a stable network. Significantly, mobile money technology (MMT) ecosystems are very complex owing to the convergence of telecommunications and the financial services elements hence need a lens that will allow for closer examination and explanation of their rather collective, dynamic, historical and social character. In this case study, ANT particularly alerted me to complex interactions and multiple realities among different human and non-human elements that might otherwise remain obscure if I were to utilise an adoption theory or any other theory from the cognitive tradition.

Consistent with reviewed exemplar studies that used theoretical resources from ANT, this study traces how Callon's (2007) "four moments" (stages) of "translation" framework namely: Problematisation, Interessement, Enrolment and Mobilisation were orchestrated in the network building process. For the network to stabilise, the four stages are required to be realised in full (Walsham, 1997). Outlining the evolution of the mobile remittance project through the four moments availed access to rich insights that allowed me to observe the various and contradictory interests of the actors during the network building process. Significantly, the study sought to establish whether the four translation moments were in fact evident or not in the creation of this network.

One of the enduring criticisms levelled at ANT stems from its flat ontology. The theory assumes that there is not context but only actors and their actions. This is a radical ontological position that has attracted criticism for downplaying the role of context. As a result, the lens neglects the role of social structures as non-human actors, with inscribed interests, that also shape the trajectory of the creation of sociotechnical networks on a higher level of analysis. Yet, this case study is particularly focused on a mobile money company (focal actor) from Zimbabwe, which created a stable mobile remittance platform for migrants in South Africa. The creation of the platform came after a volatile decade of currency collapse, hyperinflation, high unemployment and widespread mistrust of and loss of faith in the formal financial system. Contextual factors, including the historical background of this innovation, cannot be ignored if we are to have a better understanding of the creation of the mobile remittance channel.

Walsham (2017) and Creswell et al. (2011), among other scholars, have cautioned future ANT-based studies against adopting such radical ontological postures advanced by ANT purists. Rather, they have made a call for research that adopts a pragmatic application of the ANT approach. In heeding that call, this research sought to augment ANT with a lens from institutional theory, not only to enhance its explanatory power, but to also to foreground the role of the contextual non-human actors (macro-level artefacts) in shaping the trajectory of a sociotechnical network.

To buffer the identified limitation of ANT and complement its renowned descriptive power, the Legitimacy Perspective was introduced to shed light, on a higher level of analysis, into the role that institutional conventions play in shaping local level interactions between important role players as they interpret, institutionalise and embrace the technology as a part of their lives. My study specifically makes a case for taking institutions (North, 1990) (rules, regulations, norms, values and practices) seriously. In line with ANT, I thus argue that the wider context, in which the emergent channel is immersed, consists of institutions as non-human actors (in which interests have been inscribed) on a higher level of analysis. These broader social elements may be viewed as other parts of the network. Therefore, the creation of a stable sociotechnical network such as the case study is shaped by both activities and interest of the local level-human and technology actors as well as by the institutions stemming from the larger context, on a higher level of analysis.

The active role of context (i.e. history and institutions) stems from my observation that despite a decade of traumatic experiences for Zimbabwean migrants, spawned by a near economic implosion, which critics blame for contributing to mass emigration to South Africa (e.g. Crush & Tawodzera, 2017; Tevera & Chikanda, 2009), the focal actor was able to shift the perception of migrants to regain faith in a digital and formal remittance channel. Evidence suggests that it achieved this through legitimating its activities in the eyes of various sceptical target allies, with potentially diverse interests, to create and scale a mobile-based remittance platform. I found that the Legitimacy Perspective is suitable to complement ANT in shedding light on the macro (institutional) actors that impinge on network creation and shape its trajectory.

Rationale for complementing ANT with the Legitimacy Perspective

As aforementioned, extant scholarship has criticised Actor-Network Theory for, among other limitations, being too focused on the local and micro dynamics of network building and sociotechnical change. This flat ontological position introduces several problems. Firstly, the

lens does not sufficiently foreground broader social structures (institutional and cultural routines) as critical contextual actors in which interests have been inscribed thus giving them agency in shaping and modifying the process of socio-technical interaction (Walsham, 2017; Reed, 1995; Layne, 1998).

Secondly, ANT assumes that there is no such thing as society, only actors and their relations (Creswell et al, 2011) suggesting that the history of the organisation (as an actor network) and its larger contextual elements (as non-human actors in which interests have been inscribed) are less important. This further suggests that, in organisations, decisions are made based on rational, calculated and conscious choices by senior personnel derived from systematic strategic analysis of all the choices obtainable. It just bears no resemblance to reality. This is particularly so in African contexts often characterised by "extreme conditions" (Barnard et al., 2017, p. 477) and "institutional voids" (Gao et al., 2017, p. 5), which often increases the risk profile of such countries that may impede success of ICT implementation. Understanding the context (historical backgrounds and institutions) aids the chances of success of ICT implementations (Avgerou, 2016).

Current ANT-based studies exhibit limited recognition of the role that institutions – such as industry standards of organisational reputation – play in shaping, highlighting or limiting preferences apart from a few (e.g. Andrade & Urquhart, 2010; Effah, 2012) This is the gap in theory that I seek to contribute to in this study. I propose that, on the back of technological leap-frogging as one of the growth drivers in Africa, emergent sociotechnical actor networks can stabilise and thrive if initiators of technological change place equally sufficient attention on social structures as non-human actors originating from the larger context, as they do on human-technology relationships. I argue that social structures, as elements from the wider context, may enable and/or constrain ICT implementation hence should not be downplayed.

Thirdly, scholars argue that adequate accounts of technological change require explanations that weave together micro-level relationships and the institutional contexts (norms and traditions) in which these interactions occur during the creation of sociotechnical networks (Walsham, 2017; Avgerou, 2013; Orlikowski & Barley, 2001; Amsterdamska, 1990). Allen (2004) argues that to conceptually bridge the chasm between micro and macro-level analysis, while harnessing the analytical power and unique strengths of an actor network style analysis, a researcher needs to incorporate other concepts or theories into actor network methodology.

Walsham (2017) also asserts that an Actor network analysis should be supported by a larger, macro-level analysis of the context to provide a complete account of ICT implementation.

Fourthly, while describing "how" things occur is straightforward with the aid of ANT, "why" things occur poses a challenge (Cresswell, Worth, & Sheikh, 2011). Some scholars argue that ANT is not a stable and unified body of knowledge (Cecez-Kecmanovic et al., 2014; Walsham, 1997). Hence, I sought to build the theory by proposing its pragmatic application through foregrounding the role of socially constructed institutional conventions. ANT is considered to be a "living theory" (Lower, 2006, p. 96), hence the lens it is continually undergoing development by a community of exponents and users.

Hinings et al. (2018) made a call for new lenses to help us theorise emerging digital innovations. But what constitutes theorising? Drawing from organisational literature, Gioia and Pitre (1990) caution that the use of any single research paradigm generates too narrow a view to reflect the multifaceted character of organisational reality. They further argue for using different theory building approaches to study disparate issues as a better way of fostering more complete descriptions of complex organisational phenomena. ANT has been combined with Activity Theory to analyse innovation processes (Miettinen 1999) and Young et al. (2012) combined ANT with Systems Theory to analyse regulatory policy.

My motivation for drawing from the Legitimacy Perspective, whose roots are in institutional theory, to buffer ANT's limitations, stems from my observation that mobile financial services, which encompass mobile remittances, are very complex digital innovations. They are a product of convergence of telecommunications and the financial services elements to facilitate financial inclusion of the banked as well as the erstwhile unbanked migrant communities (Maurer et al., 2018). Hence, I argue that studying how such an emergent innovation is implemented requires a closer examination of their historical and institutional nature, in addition to human-technology interactions.

The organisational Legitimacy Perspective is commonly used to illuminate how new ventures, such as this case study, acquire legitimacy particularly to access resources (Aldrich & Fiol, 1994; Suchman, 1995; Gerud et al. 2014; Deephouse et al., 2016). New venture legitimacy has been the focus of a wealth of research over the past two decades (Uberbacher, 2014; Fisher et al, 2017). One of the proponents of the organisational Legitimacy Perspective, Suchman (1995), defines the concept as "a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms,

values, beliefs, and definitions" (p.25). He identified three forms of legitimacy that organisations may seek: 1) cognitive (social acceptance based on unconscious taken-for-grantedness), 2) pragmatic (social acceptance based on perceived benefit or usefulness of the venture of its products), 3) moral (social acceptance as a result of an explicit moral discourse).

The Legitimacy Perspective assumes that for a venture such as a mobile remittance service to be judged as legitimate, "its identity claims must align with the institutional conventions – that is, the norms, values, beliefs, and definitions of the socially constructed system governing the audience making legitimacy judgements" (Fisher, Kotha, & Lahiri, 2016, p.388). In this case study, and by virtue of their role, I argue that these social structures are essential parts of the network. My analysis established that a hybrid of legitimation strategies used by the remittance service provider either facilitated and/or constrained enrolment of target allies at different stages of the network building process. The focal actor particularly leveraged different communication approaches such as using "symbolic management" (Zott & Huy, 2007, p.101) to acquire legitimacy. My study largely drew on prior research that focuses on legitimation mechanisms used by entrepreneurial ventures (focal actors) in their quest to acquire legitimacy in the eyes of potential allies because I was focusing on the case of a sociotechnical network under construction.

Four high-level legitimation strategies available to new ventures which were utilised in this study are: 1) argumentation (creation), 2) manipulation, 3) selection, and 4) conformance (adaptation) (Suchman, 1995; Zimmerman & Zeitz, 2002). Under these legitimation strategies are different activities (mechanisms) targeted at specific audiences (Baumann-Pauly et al, 2016). These are often nuanced (Fisher et al, 2017). My thesis confirms common approaches in literature adopted by the focal actor to acquire legitimacy which revolved around communication: storytelling (e.g. Navis & Glynn, 2011), forging partnerships with known actors (e.g. Haveman et al, 2012), leveraging a positive reputation (e.g. Gao et al, 2017), attaining certification and awards from industry bodies (e.g. Rao, 1994) compliance with industry standards, rules and regulations (Fisher et al., 2017). Therefore, for example, industry standards are very active non-human actors, hence they are equally an artefact like a mobile phone in which interests have been inscribed.

In sum, Gerud et al. (2013) observe that one of the challenges to innovation related to being perceived as illegitimate (Aldrich & Fiol, 1994; Lounsbury & Glynn, 2001). Augmenting ANT with the Legitimacy Perspective helps us to describe and explain how new forms of digital

innovations like mobile remittances develop, how they are diffused and as a critical part of development and diffusion, how they gain legitimacy. Relative to its peers, this remittance service provider case study has, arguably, scaled up rapidly to gain dominant market share in a space (Nyanhete, 2017) where migrants generally exhibit preference for informal channels (Thebe & Mutyatyu, 2017; Chisasa, 2015; Mugumisi & Ndhlovu, 2013). The South Africa-to-Zimbabwe remittance corridor constitutes a critical case because of the large community of Zimbabwean migrants in South Africa (relative to other national groups) whose remittances contribution was estimated at 34% of the total US$ 1, 850 billion received by the country through formal channels in 2018 (World Bank, 2018). Semi-structured interviews were used as the primary mechanisms to gather data while being complemented by semi-structured field observations and a review of archival data.

1.2 Problem Statement

This study sought to address a theoretical and practical problem. At the practical level, we are seeing the emergence of a new mobile remittance network or channel, based on a relatively new technology, which is showing signs of relative success in formalising remittances along the South Africa-to-Zimbabwe corridor. Interestingly, despite the negative history associated with formal financial services for most Zimbabweans, some migrants are enthusiastically employing this new convenient, secure, fast and legal system to transfer remittances yet their other peers in similar circumstances continue to show residual loyalty to informal personal cash transfers that are not only insecure (due to informal contracts) but also slow, inconvenient and at times illegal (Ratha, 2013). This is somewhat puzzling.

The adoption lenses have limitations in illuminating this behaviour largely because of their determinism (Both et al., 2016). The lenses generally assume that technology impacts on humans as an external force or vice versa. For example, TAM assumes that if target users perceive technology as useful or easy to use, it is adopted (Davis, 1993). This has the effect of obscuring complexity. Consequently, there is scant literature to shed light on how emergent complex platforms such as mobile remittances actually come into being. With adoption lenses we cannot theorise the implementation of complex ICT projects – trace what associations exist between the human and other significant material elements that form a whole network for the project to achieve stability or conversely why some ICT implementations may fail. In short, adoption lenses fail to deconstruct core processes and activities involved in building a stable network and how actors are enrolled and end up employing such a network (or not).

Accordingly, in the context of our increasingly digital society and ICT implementation failure (Ramadani et al., 2018), there is growing interest in understanding the relationship between the social and the material to shed light on the element of complexity in the retail payment space.

Actor-Network Theory, that is used as the main theory for data generation and analysis is renowned for assisting social scientists in illuminating complex assemblages (Cecez-Kecmanovic et al., 2014) as it assumes that "the social and the material are inherently inseparable" (Orlikowski & Scott 2008, p. 456). Latour (1999a) equates ANT to ethnomethodology and highlights that "actors know what they do, and we have to learn from them not only what they do, but how and why they do it. It is us, the social scientists who lack knowledge of what they do" (p. 19). Therefore, while the lens is traditionally used as a specific way of conceptualizing the role of ICTs, I have imported it into management studies to illuminate the creation of a contemporary digital remittance system that facilitates formalisation of remittances. The pervasiveness of technology in contemporary organisations renders ANT germane in particularly magnifying the role things play in organising and organisations in today's complex digital society.

According to one of the main proponents of ANT Latour (2005), ANT's forte is 'situations where innovations proliferate, where group boundaries are uncertain, when the range of entities to be taken into account fluctuates' (p. 11). However, the main limitation of ANT stems from its flat ontology (McLean & Hassard, 2004) typified by Latour's (2004, p. 128) assertion that "networks are immersed in nothing". ANT assumes that context is emergent hence actors and their actions is all that is needed to understand how a sociotechnical network is created. Assuming such a radical stance, common with ANT purists, not only conceals how social conventions impinge on local action (enrolling users on the network to use the channel); but, it also undermines our ability to explore how the insights of a particular context and its history may shape the appropriation of technology. This apparent tension creates a gap in the literature where my study aims to contribute.

I argue for the pragmatic application of the ANT approach in studying ICT implementations. Neglecting the existence of context would limit the opportunity to look at how the context of the emerging network includes other non-human actors that influence the creation of that network. Institutions, which are viewed as somewhat durable, formal or informal rules norms, and frameworks, aid or constrain social interactions and business conduct (Barnard et al., 2017; North, 1980). Hence, my argument that it takes more than technical and social actors and their

relations in sociotechnical network creation. For example, a new network needs resources from the macro-environment to thrive. It is also subject to regulations, political and economic power issues and social trust issues (all stemming from its context), that impinge on micro (local) level actor interactions. These non-human elements either facilitate of constrain an emergent mobile remittance network seeking to attract partners onto the platform. In line with ANT, we need to foreground the role and interests of such contextual actors often obscured in ANT-based studies.

Therefore, I particularly argue for the description and foregrounding of social structures, which help in shedding light on actors' behaviour in the construction of sociotechnical networks. An appreciation of the context assists in providing a better understanding of the institutional influences that shape sociotechnical networks. This is consistent with extant organisational and management literature which aver that failure to account for institutional influence often risks promoting an overly rational view of organisations (Orlikowski, 2010; Deephouse et al., 2016). I borrow from institutional theory which has been widely used as a lens for conducting business research in emerging economies (Barnard et al., 2017).

In sum, I utilised the ANT to identify actors and describe the micro (local) human-technology interactions while the Legitimacy Perspective augmented the ANT to shed light on the influence of the wider context consisting of institutions as non-human actors on a higher (macro) level of analysis. No known study has complemented the ANT with the Legitimacy Perspective to help theorise sociotechnical network creation. However, this is considered challenging, since "research that spans micro-macro analytical domains in the social sciences is notoriously difficult" (Avgerou, 2019, p. 12). I contend that it is initially essential to understand the characteristics of each lens before striving for further integration. This is addressed in Chapter 3. Accordingly, I challenge ANT assumptions that the creation of sociotechnical networks such as the emergent digital payment platform is just a function of the dynamic interaction of human and technology actors. My key argument and contribution in this study is that, while Actor-Network Theory can explain local interactions of human and non-human actants, there is need for researchers and network actors to be pragmatic in the application of the lens by also foregrounding the role and interests of wider context non-human actors such as institutions. I have demonstrated in Chapter 5 and 6 that institutions should be taken seriously as they impinge on local interactions and shape the trajectory of sociotechnical networks.

1.3 Purpose Statement

Given the pervasiveness of contemporary consumer digital technologies, there has been strong scholarly interest in processes of technological change such as technology innovation, adaptation, diffusion, implementation and use (Heeks & Stanforth, 2015). Yet, there is paucity of literature on what really goes on in the course of technological change; in particular what active role is played by both individual people (social) and by material elements (e.g. technological artefacts) in the formation of a stable sociotechnical assemblage. Actor-Network Theory, from its application in the information communication technology field, is known to address such issues. The purpose of this study is to complement insights provided by ANT with insights drawn from the Legitimacy Perspective to provide a better understanding of how a remittance service provider (the focal actor) identifies and manages institutions as other parts of the network by deploying legitimation strategies to build a stable sociotechnical network of aligned interests. This perspective brings to the fore the active role of institutions in ICT implementation. It helps explain that, despite what one may perceive as disruption ushered through digital technology, prevailing institutional infrastructure (Hinings et al., 2018) will still be at work to interpret, convey, and monitor compliance with the socio-cultural rules of the game as well as frequently challenging the need to change.

Therefore, this study helps advance knowledge at the intersection of the social studies of technology (SST) and the study of organisational legitimacy. While ANT foregrounds the agency and influence of inanimate objects such as technology in shaping social interactions during sociotechnical network creation (Latour, 2005), legitimation strategies are seen as initiatives deployed by a central actor to cajole particular groups or organisations (target allies) to enrol onto a technology-based platform for international remittances. Acceptance is contingent upon actor adherence with structural enablers and constraints (such as norms and values) within a given society or social context. Legitimation strategies used in this case study include a hybrid of argumentation, manipulation, conformation (adaptation) and selection.

The study heeds the call for research that helps financial services professionals and retail payment service providers to understand how very impactful digital payment innovations should be introduced, executed and scaled-up and then evolve over time (Liu, et al., 2015). It also responds to calls for policy makers and practitioners to increase opportunities for underserved communities such as migrants to participate in the digital economy and leverage formal financial services to improve their well-being (Villasenor, et al., 2016).

1.4 Research Question / Objectives

How does a central actor create and expand a mobile remittance sociotechnical network?

Sub-Questions

1. How has the mobile remittance network been established?
2. What are the legitimation strategies used and how do they play a role during the different phases of translation in the network building process?
3. What were the human actors' perceptions and interpretations of the emergent actor-network and how did that inform the choice and application of legitimation strategies?

Aim

The aim of this study is to gain an in-depth understanding of how a mobile money service provider, who is the central actor, orchestrates the formation of a stable cross-border mobile remittance channel by deploying organisational legitimation strategies at different phases of the network building process to align the interests of its target allies with its own interests.

Justification of use of research questions

This study was guided by research questions instead of propositions because it is exploratory hence, I was engaged in theory building (Gioia & Pitre, 1990) since no known previous study has attempted to augment Actor-Network Theory with the Legitimacy Perspective. Prior studies that have utilised Actor-Network Theory have also relied on research questions to guide their inquiries (e.g. Heeks & Stanforth, 2015; Harry et al., 2014; Mpazanje et al., 2013; Creswell et al., 2011; Diaz-Andrade & Urquhart, 2010; Effah, 2012; Walsham & Sahay, 1999).

1.5 Scope and definitions

A single, typical embedded case study (network) was selected because it offers a unique opportunity to unpack the complexities of creating a mobile remittance channel for cross-border remittance transfers through nuanced, rich and thick descriptions of the process using the Actor-Network approach augmented by the Legitimacy Perspective. Therefore, the case is the network of relationships around the focal actor.

The study is exploratory as it sought to complement Actor-Network Theory with concepts from the Legitimacy Perspective to enhance its explanatory power. Mobile remittances in this study solely focused on person-to-person (P2P) remittances; it did not cover business-to-business transactions. It was concerned with transactions involving electronic money credited to the

Zimbabwean recipient's mobile wallet by the remittance sender in South Africa. The transactions could therefore be sent and received via the mobile phone (mobile wallet-to-mobile wallet), sent over the counter to a mobile phone (cash-to-mobile wallet) or web-to-mobile wallet. The remittance had to be sent through a mobile garget involved as a mechanism.

Because Actor-Network Theory discourages identifying the study sample in advance, this case study data collection for the case study entailed following the focal actor to identify the primary network comprising the actors that the focal actor interacts with directly. The boundary for the case study was the first generation (primary) network. This entailed human and non-human elements that were directly engaged by the focal actor for persuasion to join the emergent network. These actors or actants were only identified during data collection when they emerged from the "follow the actor" mantra (Latour, 2005).

The setting of the study is South Africa, a regional economic hub for sub-Saharan Africa (Ratha, 2013), with an advanced financial system relative to its peers (Villasenor et al., 2016) and a favourite destination for intraregional migrants (Crush & Tawodzera, 2017). This is also one of the world's most expensive remittance corridors (Ratha et al., 2011; Ratha, 2013). The case study specifically focused on Zimbabwean migrants as participants, estimated to be over three million that use the South Africa-to-Zimbabwe remittance corridor, which contributes about 34% of the total formal diaspora remittances flows to the country. These remittance volumes render this corridor a critical case.

Definition of Key Terms

Transnational migrants: Migrants include expatriates, economic migrants (documented and undocumented), asylum seekers and refugees.

International migrant remittances: an intra-family transfer of a portion of migrant worker's income from the country of employment to their non-migrant relatives in the country of origin.

Technologies: This study adopts the view that not all technologies have a physical existence, especially digital technologies. Therefore, the term technologies will not just refer to tangible artefacts or objects like a computer, a phone or a tablet but will also refer to intangible digital materials such as electronic money, data and algorithms (Jones, 2014).

Financial inclusion: It is the ability of a rich or poor individual, household or group to access appropriate financial services such as savings, credit, insurance, payments and pensions. Without this ability people are often referred to as financially excluded (Ondiege, 2015).

Actors: These are either a human or non-human entity (e.g. computer, mobile phone, pen, customer enrolment form, money, building, etc.) with the capacity to perform action (Latour, 2005) or "exert detectable influence on others" (Law, 1987, p. 132). An important feature of an actor is that it *acts,* causing some transformation of something into something else, which may also take action (Pollack et al., 2013). From the principle of generalised symmetry in ANT (Law, 1992), humans are not given priority or privilege over non-humans on their ability to take actions. Hence, the actor-network theorist analyses in the same way – using common analytic tools –the heterogeneous elements that make up a network (Michael, 2017).

Focal Actor: This is the controlling actor who is essentially the prime motivator for a particular initiative of technological change (Heeks & Stanforth, 2015; Law, 1986). From the perspective of ANT, the focal or controlling actor develops various strategies to persuade or compel others, through different political activities, to play particular roles through the *translation* process. Once other actors have been persuaded, their actions can assist the controlling actor in achieving the goals set out for the actor-network.

Actor-Networks: Actor-Networks or simply networks are groups of actors. These collections of heterogeneous entities form, align and entangle with each other for the purposes of accomplishing actions and tasks (Law, 1992). For a new network to emerge, the focal actor (controlling actor), and those exercising control on its behalf, needs to enrol other actors in order to align their interests, and weaken the presence of other actors that might act against the goals of the network. To accomplish this, mutual negotiations or persuasions need to take place between the focal actor and those they seek to enrol through a process called *translation*.

Sociotechnical networks: These are constellations of both human (social) and non-human elements such as technological (technical) artefacts that interact within networks of other actors. For example, a mobile network operator or any contemporary organisation with technical elements. These assemblages assume that the ability to act does not reside in the entity but is located in the relationship between entities.

Blackbox network: This is a collection of actors who work together in such a fashion that at a distance they may look like "… a single actor from the perspective of other actors" (Lower, 2006, p. 98) rather than multiple actors working in synergy. For instance, a laptop computer, a

motor vehicle, and even a scholarly paper could all be considered Blackbox networks. However, if an actor critical to the stability or functionality of a Blackbox network is compromised, the entire structure of the network may become unstable, as different actors in the network begin to be *seen* and examined as individual entities.

Network stability: A stable network is also called a Blackbox network (Booth et al., 2016; Lower, 2006). If the controlling or focal actor is able to marshal a sufficient body of allies that are aligned and function in unison (Callon & Law, 1995), a stabilised network may emerge (Law, 1992). The mobile remittance system under study is functional and growing since other actors (e.g. channel users, distribution channel partners) continually enrol. Therefore, while embryonic, the network is stable.

Inscriptions/envoys: This is a way of codifying meaning of the roles and behaviours of actors for them to undertake various programs of action in networks. In most ANT studies, inscriptions "are mostly technical artefacts or texts, but can also take the form of contracts, institutions, practices, routines or skills" (Lower, 2006, p.101). Texts are popular examples of inscriptions as they present various actions or behaviours in precise, irrefutable ways (Wickramasinghe et al., 2007) such as instructional material like operating manuals. Inscriptions are also the outcome of successful translations. The more an inscription is capable of maintaining its relational patterns for longer, the more durable it is.

Translation: This is a process of mutual negotiation and persuasion to determine the agency and importance of individual actors in a developing network.

Enrolment in Actor-Network Theory: Process of persuasion and control that creates, and maintains, actor-networks.

Organisational legitimacy: A venture is perceived as legitimate if a diverse array of its contextual actors (stakeholders) view it as "desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions" (Suchman, 1995, p. 574). For members of this external audience to extend resources and support to the new venture, they need to perceive the venture as legitimate.

ADLA: An Authorised Dealer (in foreign exchange) with Limited Authority. These include Bureaux de Change, independent money transfer operators and value transfer service providers, who are authorised by the Financial Surveillance Department to deal in foreign exchange transactions as determined by the Financial Surveillance Department.

1.6 Importance and benefits of the study

1.6.1 Theoretical contribution

ANT challenges the assumption of separation between material and human worlds (Creswell et al., 2011) and views technology as a product of social interests (e.g. economic and professional) with a potential to shape social interactions. This assumption allowed me to access relatively thick descriptions of dynamic interactions between human and non-human actants and their mutual relationships, at the micro-level. The lens provided a rich account (interpretation) of how a stable mobile remittance sociotechnical network is created. Therefore, ANT helped to conceptualise how different realities were experienced and enacted by different actors during the network building process. This resulted in a more nuanced picture of the dynamic relationships between different actors without overlooking their relatedness.

Significantly, theoretical resources from ANT offered important insights into multi-actors' concerns and context affecting the ICT implementation. This is particularly important in the developing world where emerging digital technologies often handed down from the North like mobile banking, invariably neglect nuanced needs of technology users (in their inscriptions) and subtleties of changing interpretation in these complex social contexts (Avgerou, 2013; Introna & Whittaker, 2006). This often results in failure of some of these much-trumpeted technological innovations. Regardless of the extreme nature of the study context, ANT generates unique insights into how universal social effects such as power come into being.

In this study I also bring together two theoretical literatures in order to understand this emergent network. The first literature is on Actor-Network Theory, which has been used as an anchor theory in prior studies in ICT innovations to account for the dynamic and complex human-technology interactions and how they shape translation and network creation and eventual stability (or lack of it) (e.g. Walsham & Sahay, 1999; Braa, Monteiro, & Sahay, 2004; Avgerou, 2013; Pollack, Costello, & Sankaran, 201; Mpazanje, Sewchurran, & Brown, 2013; Heeks & Stanforth, 2015; Harry et al., 2014). However, the radical flat ontology of ANT has been criticised for exceedingly focusing on local level interactions between humans and technology while neglecting or understating the influence of the broad social structures (Walsham, 2017).

Faced with those shortcomings, I found that if used on its own ANT has limited theoretical applicability. To buffer that limitation, I adopted a pragmatic application of the lens by complementing it with a more commonly accepted theoretical lens, the Legitimacy Perspective.

That helped to foreground the role of institutions, as other non-human parts of the network, that can significantly shape network creation. I found that ANT, through its relational ontology allowed me to trace and describe in thick and rich detail how human and now human actors interacted to forge stable relationships. However, I noted that actors interacting at local environments rarely control all the valuable resources required by sociotechnical networks to stabilise. I concluded that there is more than human and social actors and their relations that shape the trajectory of emergent sociotechnical networks. Among other contextual actors, the historical background and social structures of the setting in which technological implementation is enacted are important actors. And yet recent ANT-based IS research has hardly recognised and foregrounded the role of institutions, the history of the emergent network and other non-human elements stemming from the wider context that influence the trajectory of a sociotechnical network's and its eventual stability. This is my fundamental contribution to theory through this study.

It is my contention that, when used alone, the theoretical resources from ANT cannot provide a sufficiently rich and complete account of how sociotechnical networks come to be. Because of its relational ontology, ANT's forte is in magnifying relationships at the micro-level of analysis. I then went further to utilise the Legitimacy Perspective to complement ANT in tracing how the four phases of the translation process in the creation of a mobile remittance assemblage are shaped by the focal actor's various legitimating strategies at the macro-level. This combination of the lenses is meant to sketch out a complete picture by highlighting activities and strategies used to enrol allies at both the micro level (using ANT) and the macro level (using the Legitimacy Perspective. I argue that contextual actors like social structures should be taken seriously in studies that utilise the ANT lens as sociotechnical networks are often created and exist at the intersections of multiple, contradictory institutional contexts.

1.6.2 Methodological contribution

The Information Systems (IS) literature is dominated by research that derives from the positivist paradigm (Avgerou, 2013). This is evident in studies on mobile banking (Shaikh & Karjaluoto, 2014), mobile payments (Dahlberg et al., 2015), and online banking (Donnehy & Sammon, 2015). Calls from Kling (2000), echoed by Orlikowski and Iacono (2001) and Avgerou (2013) for social informatics researchers to adopt interpretivist perspectives have largely gone unheeded in prior digital financial services research. Accordingly, Actor-Network theory departs from this norm and draws from the interpretive research tradition.

Using Actor-Network Theory research methodology to describe and analyse the creation of the mobile remittance network provided access to thick and rich idiosyncratic data that contributes to better knowledge of the process of sociotechnical network creation. Significantly, ANT assumes that networks are constantly evolving as social reality is accepted to be both complex and fluid. Because of its focus on fluidity, the lens helped to highlight that reality is not predictable and that multiple realities can exist, with reality being actively performed in different contexts and by different actors, Hence, in the developing countries' setting, the lens primarily provided descriptive and analytical capabilities that were used to follow actors and sub-networks to try and understand what they do to contribute to the growth and stability of the mobile remittance network, whilst constantly questioning their taken-for-granted characteristics (such as that technological artefacts cannot actively change social processes).

1.6.3 Practical contribution

This study provides practitioners with some insight in the IS implementation processes to assist them with formulating processes that yield greater potential for success. It allows remittance market practitioners such as mobile remittance service providers, banks, money transfer organisations and international financial institutions to analyse how migrants enrol into a typical digital retail payments platform spanning two national borders and utilise it to remit funds. It particularly brings to the fore political and power issues inherent in those processes.

Similarly, through understanding the process of mobile remittances network construction, practitioners can better anticipate customers' diverse interests and needs to better design products and offer services well-tailored for users thus narrow the expectations gap between their service offerings and potential users. The study would also help practitioners to observe technology trends to anticipate new trends and trajectories, potential competitors and enrol likely partners within and beyond their own industries for future collaboration in building robust sociotechnical networks. Well-armed with the account of the as-lived experience of research participants at the back of their minds, practitioners can make informed choices on where to start from to yield success in the implementation of technological mediated projects.

The study contributes also to the thin body of knowledge concerning IS implementation in developing country context. Policy makers derive and share insights on policy initiatives to better calibrate polices that are more likely to enhance the employment of mobile remittance systems. This may increase formal international remittances as part of a larger strategy to

promote financial inclusion, alleviate poverty and enhance macro-economic growth (Villasenor et al., 2016; Ratha, 2013).

1.7 Document Contents

The introductory chapter of this research sought to provide the study background, the research question, the purpose of the study, the study's scope and the envisaged contribution of the study to theory, methodology and practice. The ensuing segment (Chapter 2) will constitute an exploration of this, arguably, critical research setting for the case study. While tradition would combine the study setting with a review of related literature, the ensuing chapter sought to bring to the fore the unique characteristics of the case study setting that sets it apart as critical. It deals with a bucket of literature focusing on a description of the macro and micro setting of this case study and a mini-review of the case study related literature on migration and remittances, mobile money transfers and international remittances. Then Chapter 3 focuses on the remaining two buckets of literature: the intersection of Actor-Network Theory and the Legitimacy Perspective that are used to illuminate the mobile remittances case study. Chapter 4 focuses on research design, which provides a road map for this study in terms of research philosophy, study methods, sampling techniques and data generation and analysis procedures. In designing the study, care was taken to ensure that the chosen techniques are appropriate and consistent with the Actor-Network Theory precepts as well as addressing the research question(s). Chapter 5 and 6 respectively constitute the analysis of data and conclusions that are drawn from the study.

CHAPTER 2
STUDY SETTING

2.1 Introduction

While a description of a research context is traditionally combined with a review of related literature, this chapter is dedicated to sketching out the context of the case study because it is important owing to its uniqueness. Also, consistent with my argument that contextual factors and particularly institutions and the historical context of an ICT implementation need to be taken seriously, this chapter highlights the history of remittances along this corridor and the institutions that govern this important source of income for the destination country. The South Africa-to-Zimbabwe remittance corridor is one of the biggest and most expensive corridors in Sub-Saharan Africa hence its domination by informal remittance channels. This is where the focal actor built a mobile-based transfer channel to enhance the formalisation of remittances. As a result, it is a critical case that can provide useful insights on the phenomenon under study. The chapter equally strives to spotlight the link between the unique features and history of the context and the topic researched on the creation of a digital remittance channel.

This study explores the history of mobile money in Zimbabwe as it was introduced in 2011 following a decade of currency collapse, hyperinflation, and widespread mistrust of the formal financial system. One of the results of hyperinflation was a dramatic rise in unemployment, which pushed people out of the country, mainly to South Africa, and beyond mainly to the Organisation for Economic Co-operation and Development (OECD) countries. For those who remained in the country, payment services were lacking after consumers lost faith in financial institutions. Meanwhile, one of the mobile network operators (MNOs) found a strategic opportunity to introduce mobile money to ride on the rapidly growing mobile phone penetration. These conditions allowed rapid scaling of mobile money technology to facilitate trade in the country's booming informal economy. This study is interested in how this technology was subsequently extended to facilitate international remittances from the country's biggest trading partner and host for its large migrant community notwithstanding the history of a generalised loss of faith in the country's formal financial sector by the population.

2.2 Significance of context in academic research

The anchor theory in conducting this study, Actor Network Theory, assumes that there is no such thing as society, only actors and their relations. Thus, it rejects the existence of context by citing Latour (1999) when claiming that "networks are immersed in nothing" (p. 128). On

the other hand, the contextualism school of thought, advanced by its proponents that include Avgerou (2010), argue for IS research that is socially embedded - acknowledges and accentuates the role and influence of social structures in ICT implementation in developing countries (Hayes & Westrup, 2012) as well as unique cultures and political motives (Ramadani, et al., 2018) - that impinge on establishing such innovations. This interesting tension is the focus of this case study.

Avgerou (2016) especially highlights shortcomings of a-contextual IS research and advocates that sufficient attention be given to the interaction between technological change and socio-organisational change and calls for an analysis of both the technical/rational decisions as well as actions involved in the innovation process, plus the cultural, social and cognitive drivers of such a process. Preoccupation with technological change alone, which is evident in technology transfer school of thought of the cognitive tradition can be interpreted as content devoid of context. This chapter describes the context, including the participant sample to help clarify the social meanings and processes that represent the theoretical focus of study (Charmaz, 2014).

2.3 Case study setting

This study focuses on migrant remittances, which have emerged as one of the major sources of foreign exchange flows into developing countries in recent times. In 2018 Zimbabwe received remittance inflows of over US$1, 850 billion which amounted to 9.6% of GDP (World Bank, 2018). Compared to other forms of transfers and investments, the volume of remittances to developing countries like Zimbabwe surpassed that of Official Development Aid (ODA) in the mid-1990s and is currently above Foreign Direct Investment (FDI) (World Bank, 2017).

Yet, various corridor specific and empirical studies suggest that remittances sent through informal channels could in fact add up to 50% of the official estimates, making it the largest source of external capital in many developing countries (Ratha, et al., 2016) .The United Nations Sustainable Development Goal target of reducing migrant remittance transaction costs to global average of 3% by 2030 could result in up to US$ 20 billion per annum in additional resources flowing directly to recipient households, (Schwarwatt & Sarin, 2017). This amplifies the urgency of efforts to lower costs. In this context, new technology-based commercial solutions like mobile remittances are not only gaining traction, but also increasing competition, lowering transmittal costs and accelerating financial inclusion (Villasenor et al., 2016).

Sub-Saharan Africa particularly provides a fitting setting for a study on the creation of a sociotechnical mobile remittances network for various reasons:1) intraregional migration is common hence south-south remittances account for 10 to 29 percent of total remittances received (Ratha & Shaw, 2007), 2) this region is also traditionally characterised by high levels of undocumented migration and hitherto migrants primarily relied on informal remittance transfer mechanisms such as personal cash transfers through visiting relatives and cross-border transport couriers (Ratha, et al., 2016), 3) South Africa, which is the regional economic powerhouse, is the largest migrant receiving country of both economic and forced African migrants that include, among other national groups, Zimbabweans (Shaw & Ratha, 2016), 4) approximately 17,13% of the transfer amount is how much it costs, on average, to send money from South Africa while 7.83% of the transfer amount is the average cost of sending money to South Africa from OECD countries where electronic channels are largely dominant, and 5) mobile money technology has its roots in the developing countries yet present information systems studies largely focus on technology from developed studies.

Zimbabwe, as the recipient of remittances, suffered decade long economic melt-down from 1999 to 2009. Once a major player in the Southern African economy with a well-developed financial services sector, Zimbabwe descended into a volatile decade of hyperinflation, currency collapse, high unemployment and loss of faith in the banking sector. Its political and economic crisis, which reached its peak in 2008, resulted in massive emigration of both professional and non-professional Zimbabweans to neighbouring countries and abroad in what is later described as "Zimbabwe's exodus" (Crush & Tevera, 2010). Statistics show that currently Zimbabwean migrants in South Africa account for the bulk of the cross-border remittances market, and more than R6.7bn (60% of total SADC remittances) is projected to be sent to Zimbabwe from South Africa each year (Makina, 2017). Traditionally both formal and bank-based and informal channels have dominated this remittance corridor.

Brief history about the origin of Zimbabwe's "exodus"

There is a particularly long history of migration, dating back to precolonial times, between the territories that constitute Zimbabwe and South Africa (Tevera & Chikanda, 2009). Some scholars have noted that migration is part and parcel of Zimbabwe's history (Pasura, 2013). Therefore, migration is not a new experience to Zimbabweans. However, 'Zimbabwe has become a major global migrant sending country over the past two decades' (Crush, Chikanda, & Mwaswikwa, 2012). Emigration peaked particularly at the height of a political and economic

crisis from the year 1999 to 2000 occasioned by a disorderly land reform approach. References to 'the Zimbabwean crisis' or "Zimbabwe's exodus" (Crush & Tevera, 2010) commonly refer to this period. The precise number of people who have left Zimbabwe is contested (Makina, 2012). The literature on Zimbabwean migration has tended to focus on the United Kingdom and South Africa, which can be ascribed to historical and cultural proximity (Block, 2008).

In the City of Johannesburg South Africa, which is the destination for most Zimbabwean migrants, they tend to concentrate in the CBD, an intercalary space between historically black 'townships' and white 'suburbs' (Siziba & Hill, 2018). This place is dominated by Hillbrow, Berea, Johannesburg SP, Cosmo City, Yeoville, Ivory Park Extension, Diepsloot West, Zandspruit SP, Diepsloot West, and Diepsloot West. These were the main sources of research participants for the case study and the focal actor's target for an agent distribution network.

Extant research suggests that remittances into Zimbabwe have positive micro and macro-economic and social impact on households and the community at large (Crush & Tawodzera, 2017; Chisasa, 2014; Makina & Masenge, 2014, Maphosa, 2006). As Foreign Direct Investment (FDI) into Zimbabwe has declined, the state relies on remittances as the most resilient source of foreign currency (Crush & Tawodzera, 2017). In 2015 remittances amounted to US 935 million, which far exceeded a paltry US$421 million received as FDI (RBZ, 2016). According to Bracking and Sachikonye (2008), not only do remittances reduce poverty in Zimbabwe, but they also contribute to productive accumulation for households. In a study on the impact of remittances on local development in Tsholotsho, a district in the western part of Zimbabwe, Ncube and Gomez (2011) found that remittances are a vital source of consumption income for households. Large volumes of such remittances were hitherto channelled through informal conduits (Chisasa, 2015).

Households used the remittances to, among other investments, buy agricultural equipment, build modern houses, buy livestock, scotch carts and sewing machines. At least 60 per cent of the Zimbabwean households survive primarily on a regular transfusion of remittances from migrants (Tevera and Chikanda 2009). Hence, the scripting of remittances as "sacrifice", "care", "love" "investment" (Carling, 2014). This scripting highlights the social embeddedness of remittances that informed the implementation of the mobile remittance system.

Although it is evident from above studies that at household and community level, remittances are improving livelihoods, researchers (e.g. Mugumisi & Ndhlovu, 2013) argue that Zimbabwe is yet to fully benefit from remittances at a macroeconomic level. This is mainly attributed to

the use of informal channels by a significant inward volume of remittances. Before the introduction of digital channels like mobile remittances along the South Africa-to-Zimbabwe corridor, Makina (2012) found that 89% of Zimbabwe's remittances came through informal channels, while a similar corridor specific study concluded that 85% of remittances enter Zimbabwe through informal channels (Burgsdorff 2012). The common informal channel particularly used by migrants from the Western part of Zimbabwe is the 'malayisha' system or 'omalayisha' (as they have become known). This is a private cross-border transport service operating between Johannesburg in South Africa and certain migrant sending communities in Zimbabwe (Thebe & Mutyatyu, 2017).

The term 'omalayisha' is derived from the Zulu word 'ukulayisha', which literally means 'to transport'. Thebe, (2011, p.654) observes that 'it has been used in different contexts to refer to different entities, including the channel, the operator (s), and the vehicle(s)'. It is important to also understand it from a larger context of identity, both migrant identity and service identity, 'overloading, human smuggling, and always with some form of cargo' (Thebe V, 2015, p. 198). Remittances using this channel are typically transmitted as a basket comprising cash and goods.

In a study that sought to identify strategies that Zimbabwe could adopt to formally mobilise remittances from its estimated 4 million migrants, Mugumisi and Ndhlovu (2013) made several findings on user remittance channel choice motivations. These include that unbanked senders and recipients (users) cited lack of trust in banks, high transaction and monthly charges, failure to meet bank requirements, little or nil interest on deposits as reasons why they did not have bank accounts to receive remittances. They also established that these users also consider convenience, speed of transfer, security, level of control and charges levied as motivations for choosing one channel over the other. They exhort future research to consider the feasibility of adopting mobile cross border money transfers given a high mobile phone penetration.

Political violence, victimisation and trauma visited on the population by hyperinflation period between 2006-2008 and a near economic implosion were major push factors for migration, hence most of the migrants settled as economic refugees or asylum seekers (Crush & Tawodzera, 2017). Given the foregoing, most migrants grew sceptical of the government and lost confidence in state institutions such as the banking sector. Domestic and cross-border migrants developed trust in informal channels based on social ties. In that context, this study then sought to tease out the different legitimation strategies used by the remittance service provider and focal actor to rebuild trust and confidence in its new but formal channel.

2.4 Mobile Money Technology (MMT)

Mobile money technology has been pivotal in driving access to financial services in developing countries. The technology was pioneered by Kenya's Safaricom and branded M-Pesa in 2007, with variations rolled out across the African continent and beyond. According to the industry association, the GSMA (2015) "Mobile money has done more to extend the reach of financial services in the last decade than traditional bricks and mortar banking has in the last century" (p. 8). Approximately 411 million accounts worldwide were opened and the service was available in 85% of countries where the majority of the population had insufficient access to a formal financial service. In spite of this remarkable feat, the GSMA (2015) asserts that there is still room to reach more underserved segments of society, particularly migrants.

Research on migrant remittances by Maphosa (2007) in rural areas of the southern part of Zimbabwe, and by Chisasa (2015) and Thebe and Mutyatyu (2017) in South Africa revealed that one of the major reasons for using informal channels was the entrenched nature of cash-based remittances and absence of banking services in rural areas of Zimbabwe. Recipients would need to travel long distances, incur high transport and accommodation costs to access the money sent to them. Hence, the new innovation of remitting money through the mobile phone availed new opportunities in Zimbabwe's quest to formalise these financial flows.

In Zimbabwe, just like in Kenya, mobile money services have either been bank-led or telco-led (Mas & Radcliffe, 2010). Mobile Network Operators (MNOs) have been the main drivers of information technology in the developing economies. The convergence of telecommunication and banking technologies allowed their entry into the payment space to introduce various mobile payment and banking business models. These models include bank-centric initiatives that use the internet or partnerships between Mobile Network Operators (MNOs) and banks, the former being the dominant player. Mobile money technology was initially deployed to mediate domestic remittances (Avgerou, 2016; Maurer, 2012).

In particular the telco-led innovations reach to far flung areas at greater speed and with reasonable costs while improving financial inclusion of the unbanked and mostly rural populations (Kremers & Brassett, 2017; Nyanhete, 2017). Lately, these new remittance systems are being introduced to migrants to mediate cross-border and international remittance transfers. The phenomenal growth of mobile money has resulted in a lot of unbanked people from rural villages, who used to get their remittances from banks located in urban centres, getting their money on a mobile platform (GSMA, 2015). Mobile money has, thus, been

positioned as a critical tool for facilitating international remittances, while reducing transmittal costs and maximising the impact of remittances on development.

Table 2.1 below summarises the most important differentiators between mobile money, mobile banking and mobile payments.

Table 2.1: Important differentiators between mobile money and Mobile banking/payments

Dimension	Mobile Money *(e.g. EcoCash, M-Pesa)*	Mobile Banking and Mobile Payments *(e.g. PayPal, Venmo)*
Target Audience	Primarily unbanked consumers	Existing customers
Financial System	Limited interoperable financial network	Global interoperable financial network
Regulators	Financial, Telecom, or other agencies	Financial regulators only
Technology	SMS, USSD, Mobile Internet	Mobile Internet Only

Source: Adapted from (Bowers et al., 2017).

Benefits of the sociotechnical network of mobile money

Klapper and Singer, (2014) argue that digitising remittances aids in reducing transmittal costs that have impeded financial inclusion. This is because mobile remittances are cheaper that traditional transfer channels and allow a wider reach, particularly to rural areas, relative to formal financial institutions like banks. Significantly, related prior studies have found evidence of a positive relationship between remittances and financial inclusion of recipients (Ambrosius & Cuecuecha, 2016; Ambrosius, 2015; Aggarwal, Demirguc-Kunt, & Martinez Peria, 2011; Demirguc-Kunt et al., 2011).

Because the mobile remittance service under study rides on existing MNO infrastructure and distribution network for other services like airtime and mobile phone accessories, it constitutes a more convenient distribution channel of sending remittances, especially to rural areas. Bank infrastructure is skeletal in rural areas due to obvious commercial reasons. MNO mobile money agents are encouraged to locate services in such areas and operate on flexible hours.

Digitisation of remittances also improves speed of transfer relative to more traditional remittance mechanisms – both formal and informal. Further to that, mobile remittances are more secure than some informal remittance channels like personal cash transfers using cross-border couriers or visiting relatives (Nyanhete, 2017).

At macro-level, evidence suggests that once recipients receive their remittances in their mobile wallets, they can also access other mobile banking services that enhance financial inclusion such as micro insurance products, savings, and credit (Maurer et al., 2017; Demirguc-Kunt et al., 2011). Therefore, recipients are able to manage risks like unexpected income shocks by accessing support from their social networks. Importantly, formal remittances connect remittance recipients to the broader economy that can allow them access to credit. In view of this evidence, it stands to reason that this innovation could make significant contributions towards promoting financial inclusion and formalisation of remittance transfers.

Constraints faced by this new way of remitting relate to regulation largely because it challenges existing ways of remitting that have had its own regulatory regime for a long time (Ondiege, 2015). It is primarily telco that ignites tension with regulations that govern money transfer operators as MNOs largely belong to the telecommunications sector. The willingness of regulators to revise regulation to accommodate the new players has not been uniform across countries in the developing world (Schwarwatt & Sarin, 2017). This brings to the fore the aspect of contextual differences that can facilitate or constrain the ability of such innovations to gain traction and scale up to commercial levels (Mas, 2017). The second challenge stems from the entrenched cash-based character of cross-border remittances. The ability of the market to shift behaviour from cash to electronic money has been an important subject of research by practitioners and academics alike (e.g. Dahlberg et al., 2015; Maurer, 2012). Similarly, Thebe and Mutyatyu's (2017) study demonstrates that the socially embedded nature of informal channels such as omalayisha in the South Africa-to-Zimbabwe remittance corridor is one of the reasons why new ways of remitting would struggle to gain traction and scale.

2.5 Case selection and description

This is a cases study of a mobile payment system that is similar to M-Pesa introduced in Kenya in 2007 and Tanzania in 2009. This system is built to facilitate inward monetary remittances from Zimbabwean migrants in South Africa to recipients back home using the phone. The service provider, which is the focal or primary actor, is a subsidiary of a diversified smart technology group that is a public limited company listed on the Zimbabwe Stock Exchange

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(ZSE) that evolved from a Fintech operation. As part of its growth strategy, the company then set up a separate business unit to extended mobile money services to the diaspora community. This study is interested in the creation of this new remittance channel (network) that enables cross-border remittance from South Africa to Zimbabwe.

Mobile money came in as a useful alternative to mediate domestic money transfer after Zimbabwean consumers experienced immense trauma during the hyperinflation period from 2005 to 2008, which was stemmed by the introduction of a multi-currency regime in 2009. During the hyper-inflation era that triggered mass emigration, depositors and investor lost faith in the formal financial sector that includes banks and insurance companies (Mugumisi & Ndhlovu, 2013). Mobile money service rapidly scaled and attracted 1.7 million account holders in 2011, which was its first year of operation in Zimbabwe. Currently, the mobile money service claims to have more than 9 million registered accounts, with 5.2 million deemed active every month (Nyanhete, 2017). Among these are the target recipients for the international mobile remittance service that was introduced in South Africa. This compares favourably to 1.5 million conventional bank accounts in Zimbabwe. Further to that, supermarkets with an extensive national footprint such as OK Zimbabwe, Spar and Pick 'n Pay have integrated the mobile money service provider's PIN pads into the checkouts to facilitate merchant payments. Zimbabweans have embraced mobile money and plastic money faster than Kenya because of continual financial crises (Mashizha & Sibanda, 2017). This is an interesting paradox.

The viability of a mobile money ecosystem is sustained by the flow of money (Mas & Radcliffe, 2010). The mobile money service offered by the company in question has since morphed into a comprehensive mobile banking package to include a savings account, loan service, micro insurance, a MasterCard that is linked to the wallet, merchant payments, public transport fare payments and payroll services for salary disbursements. With market-share of over 97%, the mobile operation needed an alternative source of liquidity hence the decision to go the route of building a similar service to facilitate international remittances.

From 2015, this service provider has offered cross-border mobile-to-mobile transfer services from selected migrant receiving countries that are closer to Zimbabwe, currently South Africa, Zambia and Botswana. This means Zimbabweans in these countries are able to transfer money from their foreign mobile wallet directly into to the domestic mobile wallet of the recipient in Zimbabwe. Once recipients have received their money in their wallet, they have the option to

cash it out in foreign or local currency, use it for purchases or make payments for utility bills in digital form (Nyanhete, 2017).

This focal actor was chosen because it is a low-cost international money transfer network that seeks to address, among other challenges inherent in traditional formal and informal mechanisms: 1) the problem of high cost of remitting funds from South Africa, 2) the length of time it took for remittances to reach intended recipients, and 3) to cater for undocumented migrants to transmit remittances, which has been a challenge that forced most remitters in this category to primarily rely on informal channels. This study is interested in the strategies and activities of the focal actor as it created a sociotechnical cross-border remittance network by on-boarding regulators, MNOs, retail chains, agents and target users onto the new platform.

I argue that this business unit, which is the primary actor, among other activities, deployed legitimation strategies that enabled the formation of the new platform as an alternative to the banks and other formal and informal remittance channels that had lost the faith and confidence of both domestic and cross-border remitters. This study sought to foreground the role of institutions as an antidote to high risk perception and uncertainty by potential resource providers.

2.6 Conclusion

Mobile remittances' innovation is considered to be particularly information-rich and one of the progressive sectors in the use of digital retail payment technologies hence my desire to also contribute to literature in this space. By addressing the research setting separately from a theoretical literature review, this study sought to achieve a contextually sound research and bring to the fore the elements of the context that assisted or inhibited the establishment of the new channel. The ensuing chapter is focused on the review of theoretical underpinnings. It interrogates Actor Network Theory and the Legitimacy Perspective, which were combined to ground this study and provide a complete account of the creation of the remittance network.

CHAPTER 3

LITERATURE REVIEW

3.1 Introduction

This chapter introduces core theoretical resources from Actor-Network Theory that are deployed in Chapter 4 and 5 to inform the process of data collection and analysis. In attempting to anchor my study theoretically, I provide a description of how I used Actor Network Theory, an increasingly influential but still intensely contested approach to understand human-technology interactions. I reviewed both expository and ANT-based research papers from peer reviewed journals on network creation in order to determine which factors have repeatedly been identified essential for the effective creation and implementation of IT systems in payments. I began by reading seminal works of ANT by its proponents namely: Bruno Latour, John Law and Michel Callon. Further studies applying the tenets of ANT to analyse ICT project implementations and the adoption of technologies were then reviewed.

The review begins by introducing the core proposition and three principles underlying the ANT approach. In particular, "the sociology of translation" (Callon, 1986) which is used in this study. The conceptual ideas of the sociology of translation and its related concepts serve as analytical devices to explore how a mobile remittance sociotechnical network is created by a focal actor. As ANT did not fulfil all my requirements, I drew on the Legitimacy Perspective (Suchman 1995) that had the potential to address gaps identified in relation to ANT. Specifically I sought to foreground the influence of macro or contextual factors on local (micro) level interactions in network creation that ANT is used to trace and describe. I explored how integrating ANT with a theoretical lens from institutional theory could usefully inform the design of investigations on the implementation of mobile remittance systems. The Legitimacy Perspective helped to obtain a holistic picture of the implementation terrain, including power issues and related macro-level developments that would, invariably, be neglected if ANT is used alone.

3.2 Literature sources

I utilised e-Journals and a host of scholarly databases. Search terms such as *technology adoption, technology use, information systems, mobile payments, mobile banking, mobile money transfer, mobile remittances, sociomaterial, sociotechnical, relational ontology, translation and Actor-Network Theory* were used, and articles collected when topically relevant

to the study. The search was focused but not limited to high –impact journals such as MIS Quarterly, Organisation Studies, Organisation, Organisation Science, Academy of Management Review, Academy of Management Journal, American Sociological Review, Administrative Science Quarterly, Information Systems Research, Journal of Information Systems, and Information and Communication Technology for Development (ICT4D). Articles not written in English were excluded from this review.

3.3 Core propositions and tenets of Actor-Network Theory (ANT)

ANT has been widely utilised to inform technology adoption studies within different contexts. Similarly, the view of networks presented in this study is based on ANT, which was introduced in the field of Science and Technology Studies during the mid-1980s by Bruno Latour, Michael Callon, and John Law (Michael, 2017; Walsham, 1997). For example, studies drawing on the social study of technology and its emerging concepts like sociomateriality and sociotechnical perspectives like ANT have explored how human and non-human actors engage in political processes of negotiation leading to the adoption of such technological innovations as the Health Technologies used in Practice (Booth, et al., 2015) national electronic health records (Creswell, et al., 2011) Enterprise Resource Planning Systems (Elbana, 2010), Automated Teller Machines (Introna & Whittaker, 2007), and Geographical Information Systems (GIS) (Walsham & Sahay, 1999).

These studies have provided unique insight into, for instance, how those supporting the adoption of technologies might feel betrayed by the technology itself due to its poor performance (Wilson and Howcroft, 2002) or its performance in ways not previously expected (Hanseth & Braa, 1998); how the existence of competing actors (e.g. technologies) might diminish the adoption of particular technologies (Wilson & Howcroft, 2002); how those interested in adopting particular technologies might use their power to sell technology or to hide problems arising from implementation (Bartis & Mitev, 2008); how the lack of enrolment of relevant actors might lead to the non-adoption of technologies (Walsham & Sahay, 1999); how when the interests inscribed in particular technologies are not aligned to the interests of potential users influenced the adoption of such technologies (Hanseth & Braa, 1998; Walsham & Sahay, 1999; and how the adoption of technologies is highly affected by the negotiations taking place between relevant actors (Booth et al., 2016). ANT has been used as a sensitising device to collect and analyse data because of its descriptive strength (Heeks & Stanforth, 2015).

Consistent with its assumptions articulated by its proponents, the primary aim in utilising ANT for this study is to investigate and theorise about how the mobile remittance network came into being, to trace what associations that emerge in that network, how they change, how parts of a network form a whole network, and how the mobile remittance network achieved its temporary stability (or alternatively why it is unstable) (Walsham, 2017). Therefore, ANT helps to tease out detailed and novel insights on network creation as a political process in which strategies are developed, actors persuaded, and organisational resources negotiated, in order to sponsor and promote the emerging mobile remittance network. Therefore, the lens helps to shed light on how both human and non-human actors are persuaded or compelled to come together in stable, heterogeneous networks of aligned interests

The networks are heterogeneous because they comprise the fusion of social or human elements and the material (particularly the technological artefacts) (Scot, 2008). In a study on the implementation of a National Electronic Health Record in England, Creswell et al. (2011) observe that that, *intermediaries* and *mediators* can form connections or relationships between heterogeneous actors. While the outputs of *intermediaries* can be easily predicted on the basis of their inputs (e.g. X directly causes Y), *mediators*, on the other hand, transform inputs into unpredictable outputs. This means that they can also transform actions, making something happen that is not necessarily related to what set it into motion (Creswell, 2011).

The ANT assumes that the social world consists of many mediators and very few intermediaries. Mediators tend to be the focus of analysis as they affect social outcomes in often unpredictable ways. It emphasises that an actor-network is a result of technical mediation (Belliger & Krieger, 2016). It primarily focuses on the dynamic interaction of the social and the technical elements in the formation of a sociotechnical assemblage. As argued in Chapter 1 of this study, one of the mediators hardly amplified in ANT theory are contextual actors such as social structures and their role in shaping actor interactions.

The ANT assumes that the social world is made up of many mediators that are often the focus of analysis as they affect social outcomes in often unpredictable ways. These mediators can transform actions, making something happen that is not necessarily related to what is set in motion (Cresswell, Worth, & Sheikh, 2011). For instance, objects such as a big office, a big desk, a computer and a phone can serve to create the manager in an organisation as the source of power. When a manager is studied without those objects, as opposed to as part of a network of material elements, they may come across as relatively powerless. Therefore, if any actor,

regardless of its position, is removed or added to a network, then the functioning of the whole network may be affected. Consequently, ANT allows access to rich and novel insights into how social effects such as power emerge.

Table 3.1: Key concepts in ANT

Concept	Description
Actor (or actant)	Includes both human beings and non-human actors such as technological artefacts.
Actor-network	Heterogeneous network of aligned interests, including people, organisations and standards.
Enrolment and translation	Process of creating a body of allies through a process of translating their interests to be aligned with the actor-network.
Delegates and inscription	Actors who "stand in and speak for" particular viewpoints that have been inscribed in them, e.g. software as frozen organisational discourse.
Irreversibility	The degree to which it is subsequently impossible to go back to a point where alternative possibilities exist.
Black box	A frozen network element, often with properties of irreversibility.
Immutable mobile	Network element with properties of irreversibility and effects that transcend time and place, e.g. software standards.

Adapted from Walsham (2017) and Tatnall (2013).

There are three main principles or assumptions underpinning ANT that help illuminate its methodological concerns and considerations that are also pertinent to the creation of a mobile remittance network. These principal assumptions are namely: generalised symmetry, free association and agnosticism.

3.3.1 Three main principles underpinning ANT

1) Generalised symmetry

The principle of generalised symmetry is echoed in the radical, and contentious, way ANT defines actors. ANT proponents such as Latour (1994) argue that humans build their social relations, give them stability and repeatability with the help of things or artefacts, such as technology. In doing so, none is subject and the other object and neither is the one active nor the other passive. In short, the one does not determine the other. Therefore, instead of focusing

on the technical aspects that influence the social context (a view associated with technological determinism), or on the social elements shaping technology (a view associated with social determinism), ANT assumes that relationships between entities are best described using the metaphor of the "actor network", which is a heterogeneous assemblage comprising human and non-human actors working in alignment with each other.

ANT assumes that both human and non-human elements have agency and thus there is symmetry between them. This "forces us to abandon the subject-object dichotomy, a distinction that prevents understanding of techniques and even of societies" (Latour, 1994, p. 34). Latour (1994, p. 33) speaks of "technical mediation" to describe how materials (artefacts) take on agency and become "actors" with "programs of action" – the usual term is "affordances" of their own (Leonardi, 2011). ANT essentially challenges assumptions of separation between human and material worlds (Creswell et al., 2011).

The generalised symmetry principle maintains that things participate as actors in making associations that build social order and are not passive recipients of meaning giving acts (Belliger & Krieger, 2016). On the contrary, they can come to have a voice of their own. Therefore, this study recognises that both human and non-human actors equally possess the ability to take actions and can be anyone or anything. Accordingly, when analysing network creation, I ought to try and use an abstracted, neutral terminology that does not prejudice the non-human actants while privileging the human over (Michael, 2017). Thus, the invaluable contribution of this notion in this study is that it aids in tracking how objects, such as the new mobile money software, transform established practices in the remittance transfer setting by influencing the way human actors are associated in their transnational remittance activities. The notion sheds light on how mobile remittances software actively transforms the way remittances are transferred, contrary to adoption literature that assumes technology to be passive, which may lead to the researcher understating its influence.

The role and intent of the focal actor is also amplified in ANT where "the social and the technical are enmeshed in a network built to achieve the network builder's goals" (Albanna (2009, p. 7). The network builder in this study is a mobile money service provider who is fabricating an ecosystem that facilitates cross-border remittances using the mobile phone. For ANT, technical mediation is what networking is all about. Therefore, researchers using the ANT theoretical lens are exhorted to analyse these heterogeneous (social and technical) elements in the same way - using the same conceptual (analytic) tools, without making any

discrimination (Callon, 1986; Law, 1986c; Law 1987). This principle is an endorsement of Orlikowski and Scot's (2008) recommendation to researchers to align to a sociomaterial perspective when examining human-technology interactions (Leonardi, 2011). In an adoption lens was used, prior assumptions of assumptions of dualism between humans and objects may distort data collection and analysis. Thus, ANT's generalised symmetry principle helps to recognise that objects such as the mobile phone can actively create unpredictable outputs.

ANT's theoretical resources such as the generalised symmetry notion is one of the most distinct contributions to the sociology of science and a useful lens from which to deconstruct situations where both the human and non-human actors interact in a dynamic fashion. However, the principle is considered to be certainly one of its most controversial (McLean & Hassard, 2004). The equal positioning of human and non-human actors in Ant has stimulated debate. This study recognises that these actors are different in a number of respects. Furthermore, the study takes into account differences between humans and artefacts by being explicit about their positioning and acknowledges that both artefacts possess certain attributes and history that is likely to have shaped them, which ANT fails to take account of. That is why ANT is augmented by the Legitimacy Perspective, from Institutional Theory, to account for contextual influence that ANT does not foreground.

2) Principle of agnosticism

ANT, controversially, views the researcher as agnostic (or detached). This principle is applied in informing research data collection and analysis from an interpretive research tradition where textual or verbal data from human actors is elicited through qualitative interviews and observations. It suggests that a research of the actor-network or particular controversy needs to be impartial and requires that all interpretations be unprivileged (Michael, 2017). In this study, humans are seen as both informants (i.e. actors that generate accounts) and interpreters (i.e. the researcher interprets associations and components of the network). It is hard to imagine the existence of a truly detached observer as these always bring their experience and must play an active role in eliciting and constructing ANT accounts (McLean & Hassard, 2004). Equally, as a researcher I have considerable influence on how actors and informants are selected, and this too needs to be taken into account.

In this study both human and non-human winners and losers of a controversy are subjected to equivalent forms of analysis in which I systematically avoid censoring any interpretation provided by actors studied when they speak about themselves or other actors (Callon, 1986)

even when their interpretations are at variance with my own. This is because censoring interpretations potentially impedes an in-depth understanding of the phenomenon under study. However, as a researcher of an interpretive study that involves qualitative methods, I am already a part of the merging network and will transform it as much as it will transform me as relationships develop throughout the research process. McLean and Hassard (2004) caution that researchers should be explicit about their involvement and show an awareness of how accounts are produced and how choices are made.

3) Tenet of free association

Given the dynamic nature of actors' interactions within networks, proponents of ANT caution against attempting to fix actors to predefined scales or levels of observation (e.g. micro or macro). All entities, whether technological, natural or social are relational in nature and derive their existence from these relationships of mutual benefit (Callon & Law, 1995). As Latour (1991) states "the socio-technical world does not have a fixed, unchanging scale, and it is not the observer's job to remedy this state of affairs" (p. 119). Accordingly, actors are free to move between levels and structures, a movement "induced by the actors themselves" and any attempt by the researcher to fix an actor to a static location "is not only dangerous but simply unnecessary" (Latour, 1991, p. 119). Just like humans, objects are assumed to possess a similar ability to create unpredictable outputs. This helps eliminate prior assumptions of dualism between humans and objects that may invariably distort data collection and analysis.

In the context of this study, anecdotal evidence suggests that there are various situations where human and non-human entities interface to generate action during the network creation process. For instance, the process of remittance transfer involves various categories of social actors: migrants in their sender role, digital financial services providers and technical systems in their role of facilitators and guarantors of the transfer of remittances to the intended recipients on the other end of the channel. One can only understand the creation of a mobile remittance network service network focusing on exploring the relationships or associations between the entire channel's heterogeneous actors. This includes technology vendors, sender's social network, remittance recipients and the media (e.g. focal actor's website).

3.3.2 Role of the three ANT principles in this study

The three principles are used in this study to guide me in tracing the creation and evolution of an actor-network by the mobile remittance service provider through the enrolment of mobile

remittance technology users and many other human and non-human actors that include digital money. Walsham (2017) observes that successful networks of aligned interests are created through the enrolment of a sufficient body of allies and the translation of their interests so that they are willing to participate in particular ways of thinking and acting that maintain the network. In ANT terms, the process of aligning these interests is called the translation process. Accordingly, the following sections will discuss "the sociology of translation" as postulated by Callon (1986) and the associated ANT concepts that forms part of this research.

3.4 The sociology of translation

In Actor-Network Theory, scholars assume that networks are continuously evolving and transforming through processes of translation. Translation can be defined as a process of persuasion and control (Booth et al., 2016) by which a focal actor transforms, reinterprets and displaces the divergent interests, goals, or even identities of other actors so as to align those actors' interests with its own (Walsham, 2017; Walsham, Robey, & Sahay, 2007; Law, 1992). Therefore, during network creation, actors are encouraged to exercise their ability to act in order to enlist into the network (Harry et al., 2014). Those with independent interests are encouraged to align with interests of the focal actor in order to create a potentially robust network (Harry et al., 2014). This encouragement constitutes a series of processes or moments that are collectively called the translation process. If the key actors succeed to align the interests of the other actors to that of the focal actor, then enrolment into the network will occur. This indicates that consensus has been reached and there is buy-in from the actors. This too means that the key actors were successful in convincing the other actors to align their interests to that of the focal actor.

The focal actor deploys different strategies to drive the translation in order to enrol and mobilise other actors (Blackburn, 2002). Therefore, the translation denotes a process where two actors become related in such a manner that one actor draws from the other's strength, in this instance the first actor ends up speaking or acting on behalf of the other actor (Harry et al., 2014). Accordingly, this study seeks to understand how remittance service provider, who is the focal actor, deploys various legitimation strategies namely to build a stable mobile technology-based remittance transfer channel along the South Africa-to-Zimbabwe corridor. The key role of the focal actor is the transformation of allies' interests to willingly participate in particular ways of thinking and acting (Heeks & Stanforth, 2007). Overall significance of an actor depends on

its ability to enrol other actors (e.g. users and channel partners of mobile remittance channel. Enrolment also includes the process of displacement that takes place and being displaced means changing the state of an actor (Callon, 1986).

The role of the broad legitimation strategies drawn from management and organisation studies (MOS) that this study seeks to foreground are namely argumentation, manipulation, selection and adaptation (conformity) (Suchman, 1995; Deephouse et al., 2016 (Kuratko et al., 2017 (Fisher et al., 2017). Numerous actors within the focal actor may be involved in different phases of translation, which are namely: Problematisation, Interessement, Enrolment and Mobilisation.

In relation to this study, the translation principle provides insights into how mobile money software (designed by computer scientists) is integrated into the remittances transfer setting previously dominated by traditional informal channels on one end and formal bank-linked channels on the other. Using the translations principle, a researcher is allowed access into the complexity of different actors at play when a network is being constructed (Harry et al., 2014). Yet the adoption lenses are likely to neglect the design context and examine the adoption context in isolation, which might provide an incomplete account of network creation.

The gathering and stabilisation of an actor network is a process that is uncertain of success, likely to encounter resistance, and requires actors to be persuaded, cajoled or compelled to join the network (Tantall, 2013; Ballantyne, 2015). When those who drive the process of translation fail to get other actors to comply or recognise them as indispensable or an Obligatory Passage Point (OPP), those targeted for enrolment or mobilisation question or refuse the roles imposed upon them by the controlling actor, or when alignment between actors shift, a process of dissidence, rather than successful translation, takes place. This can cause networks to become unstable, collapse, or reform in different patterns (Callon, 1986).

In this study the four phases of translation are used to help us understand how technologies merge and networks are established or fail to be stablished to facilitate transnational remittances. These are regarded as the major building blocks for a network's stability. While these moments of translation provide the structural framework for my case chronology, they invariably overlap, sometimes in a disorderly fashion. Further to that, although these steps are seemingly linear, they are in fact highly recursive and non-static (Booth et al., 2016).

Figure 3.1 below captures the process of translation and its four interrelated moments – *problematisation, interessement, enrolment* and *mobilisation* (Callon, 1986) are outlined.

Figure 3.1: ANT's translation process
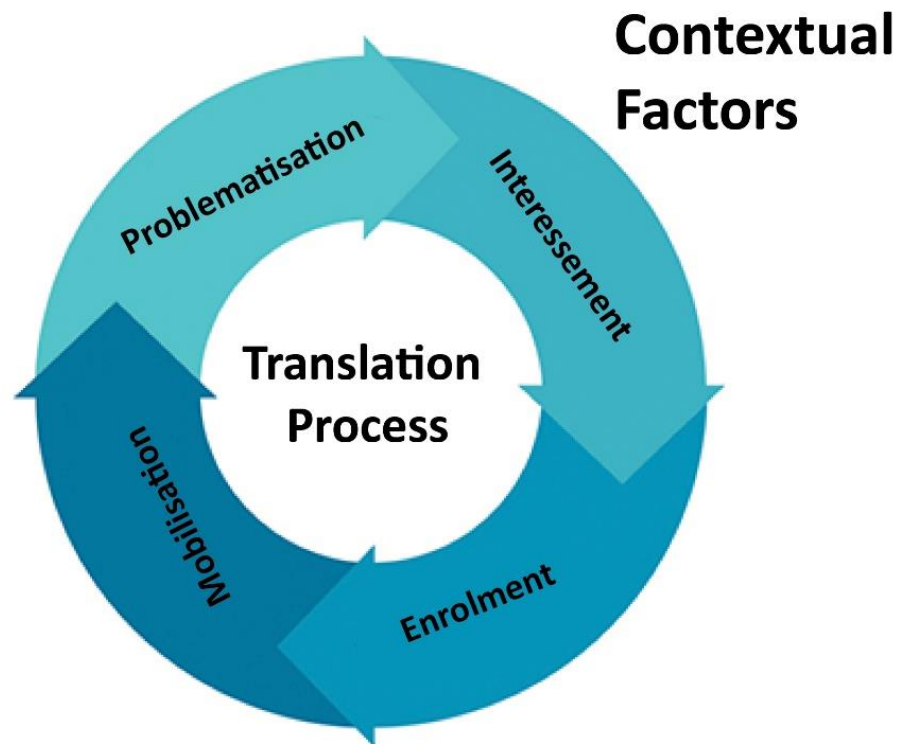
3.4.1 A brief description of the four phases of the translation process

For a network to be stable and successful, it must go through the "four moments of translation" (Harry et al., 2014; Callon, 2007, p. 58). They constitute the primary empirical process of actor-network analysis in this study. My choice is partly informed by the relative clarity of this framework and its previous application in similar single case studies (e.g. Heeks & Stanforth, 2015; Harry et al., 2014; Mpazanje et al., 2013; Effah, 2012; Sarker et al., 2006). Further to that, viewing the creation of the mobile remittances network through the translation process enables a researcher to see the trajectory of the project (Andrade & Urquhart, 2010). However, care is taken to see if these stages actually emerge from the data as postulated in extant literature, and if in fact there are other stages that emerge during the creation of this particular network.

Problematisation

A focal actor, who is the prime motivator for a particular initiative of technological change, defines interests that potential allies may or may not share to initiate a change process to the status quo (Heeks & Stanforth, 2015). This entails revealing its interests and sharing with potential allies that may possess similar interests or alternatively create alliances with other actors with similar objectives. The focal actor then attempts to frame the nature of the problem associated with the status quo in its own terms and solve a problem that is of common interest to the potential allies (Tatnall, 2013; Sarker, Sarker & Sidorova, 2006). For instance, in this study, a remittance service provider, as the focal actor, defines the problem associated with informal remittances with a view to persuade or translate potential allies' interests to enrol onto its proposed mobile-based remittance platform to formalise these financial flows that had hitherto employed informal mechanisms or other alternative formal mechanisms. In cajoling or coercing potential users, it may position its services as a safe, convenient and fast route. Equally, it may persuade partners by promising them alternative revenue sources like commissions. Likewise, for the regulators and the state, it may assure them of tax revenues from this emergent formal channel.

When defining the problem in its own terms, the focal actor seeks to establish itself as a gatekeeper (or an *Obligatory Point of Passage,* OPP). This entails rendering itself as indispensable and imposing its view on others (Sarker et al., 2006). It thus convinces target allies that their problems would only be resolved by passaging through the OPP (Law, 1986b). Should other actors wish to pass through the OPP, they first need to modify their current interests and to align them to those of the OPP. The translation process is realised. For example, in this research study, the focal actor wants to encourage adoption and active usage of the mobile remittance service. Hence it uses different strategies to negotiate, coerce or cajole the selected channel partner and user of the service to align closely to the OPP of the focal actor.

Interessement

When problematisation is in process, the next stage in the translation process is interessement. This involves the primary actor initiating and deploying a group of strategies to interest, convince or appease other actors that their defined roles in the newly emerging network are feasible and acceptable (Callon, 1986b). These strategies can involve some seduction, persuasion and compromise in order to convince the actors to be interested in the roles proposed to them. Equally, this also entails weakening the influence of other actors with divergent

interests that may destabilise the emerging network (Linde et al., 2003). The objective is to isolate those being enrolled by disrupting any other possible alliance that may challenge the legitimacy of the OPP. Callon (1986) points out that:

> To interest other actors is to build devices that can be placed between them and all other entities who want to define their identities otherwise. "A" interests "B" by cutting or weakening all the links between B and the invisible (or at times quite visible) groups of other entities C, D, E, etc. who may want to link themselves to B (p. 207-208).

The focal actor may also negotiate interessement. However, the actors do not always participate in such negotiations themselves through manipulating them by offering incentives. ANT acknowledges that in a heterogeneous environment, target allies will not adhere to the same interessement strategy and may have diversified levels of interest (Harry el al., 2014). As a way of illustration, a non-human actor may respond differently to an interessement strategy aimed at human actors.

Negotiations and political manoeuvring are done through speakers or representatives of target allies such as media (Callon, 1986). For instance, an IT vendor can speak on behalf of a mobile money application system while the latter may "refuse" to act in some way on behalf of the regulator. For instance, the Know Your Customer principle in the financial services sector may be inscribed in the mobile remittance system to facilitate registration of those meeting the requirement and constrain those who do not meet the requirement. That being said, actors may not necessarily abide by the agreements signed off by their representatives (Sarker et al., 2006).

Enrolment

This is the third phase of the translation process (Callon, 1986b). In this phase all actors involved are constantly attempting to "translate" and "enrol" other actors into programs of action. Hence, this stage consists of "negotiations, trials of strength and tricks that accompany the interessement and enable them to succeed" (Callon, 1986, p. 211). If the necessary alliances are to succeed actors begin to align themselves to those defined roles on the OPP. To achieve this, the focal actor engages in multilateral negotiations with targeted allies as well as those actors who can potentially threaten network stability though a series of strategies. These include physical violence (against predators), seduction and transaction (Callon, 1986).

However, negotiations are not always needed because some actors are enrolled without any resistance such as those who are close to, and share, the problematisation statement.

The enrolment stage, in this study, helps in exploring and mapping out how the most powerful (e.g. project initiator) try to enrol different actors (e.g. mobile remittance users in adopting the mobile money technology) into a network and how relationships are formed over time. This assists in capturing the different power dynamics in the mobile remittance network creation. Each time an actor accepts a role an inscription occurs (Harry et al., 2014). Hence, this study will equally identify and describe the inscriptions that make up the mobile remittance network.

Mobilisation

According to Callon (1986), mobilisation of allies is the final iterative stage of translation. In this stage, actors reflect upon their journey and reaffirm that their identified roles fit with other actors in the network. The focal actor "borrows the force of the passive agents that it has enrolled by turning itself into their spokesman and talking on their behalf" (Law, 1986, p. 16). An even large network of absent entities that support the proposed solution is formed, and thus the emergent network gains wider acceptance (Tatnall & Burgess, 2002, p. 185). At this stage of translation, the focal actor might have developed a relationship with only those who represent the masses, such as media, assuming that those represented will follow their representatives. The focal actor needs to continually convince the actors that they still share the same interests to reduce incidence of controversy.

Inscription

Sarker et al. (2006) argue that inscription occurs during the enrolment process. It "is a process of creation of artefacts that would ensure the protection of certain interests" (Latour 1992). These artefacts relevant to this study include branding, images, text, manuals, databases, mobile devices, explicit transaction processes and shared memories. Inscriptions seek to protect interests of the focal actor. Strategies for inscription in the context of mobile remittances technology include creation of texts (e.g., mobile money software manual, transaction process, regulations, rules and procedures) or technical artefacts, outdoor branding material for agents, Terms and Conditions (T&Cs) sheets, tariff sheets and, transaction process flow manuals.

3.4.2 Network stability/instability

ANT assumes that if the translation process occurs successfully then the stabilisation and formalisation of an actor-network occurs in the ranks of the actors. This study occurs on the back of a successful launch of mobile remittance service, attraction of significant users' numbers and growing transfer volumes, which suggests network stability. Equally, heterogeneous actors in this actor network are constantly negotiating and re-negotiating programs of action. While an actor-network, such as the case study, may appear at face value to be robust, a change in alliances or a shifting alignment between actors can cause the network to become unstable, collapse, or reform in different patterns.

While the process of translation appears linear, it is extremely reflexive and non-static (Booth et al., 2016). In essence, actors and their different related inscriptions have autonomy within the network and possess agency within the network establishment. What follows discusses a series of research relevant to understanding the implementation of projects and the adoption and use of technologies to argue with examples of the notions of translation and its related concepts as theoretical devices for this study.

3.5 Exemplar studies that utilised ANT

The ANT has recently gained popularity as an innovative perspective to examine technology mediated projects in a range of diverse disciplines and research areas that include education, business information systems, geography, environmental studies, and information and library sciences (Evarts, 2011; Walsham, 2017). A brief review of some highlights is useful in providing useful insights on relevant concepts such as the process translation. For instance, Walsham and Sahay (1999), concluded that technology-based projects might fail because the technologies implemented are at odds with the values of the project's shareholders. They also established that project failure could be attributed to technologies that develop strong properties of irreversibility that are not well-aligned to the interests of the merging network.

In their 1996 study, Walsham and Sahay provide an interesting case of the attempt at the creation of a network of aligned interests for the development and use of geographical information systems (GIS) to aid district-level administration in India. The research results suggested that the GIS technology inscribed interests of its Western developers thus neglecting local idiosyncrasies and needs, which negatively affected its implementation in a developing country setting - India. Consequently, the study describes how and why the attempts at

translation and alignment of the interests of the local-level administrators were a relative failure thus bringing to the fore the salience of contextual factors in network creation. While a reasonable degree of detail on aspects of social interaction were captured, detailed descriptions of the technological inscriptions are lacking. This study will be wary of such omission.

A brief description of issues of relevance to this study identified during the review of related ANT-based studies is essential. These include an investigation of how continuous negotiations between actors of different medical groups were necessary to implement a health information system that would not have ordinarily been inscribed into the medical practices of those involved (Cho et al., 2008). Elbanna's (2010) study established how projects taking place simultaneously, within one particular organisation, may compete for resources, thus reducing the rhythm of implementation or threatening particular initiatives. Also, particularly relevant to this inquiry, is a case study of an ICT-based initiative intended to bring development to underserved rural communities in the Peruvian Andes (Diaz-Andrade & Urquhart, 2010). The focal actor provided access to computers and the internet through eight telecentres. The researchers describe four stages of the project's progression using's Callon (2007) four moments of translation. The researchers concluded that, from the Actor-Network perspective, the existing social networks, and the superimposed technological network were incompatible. The main finding of this study is the value of ANT in explaining the progression of the project from project initiation (problematisation and interessement) through complex processes of enrollment to the eventual failure of widespread project mobilisation. Their contribution is in arguing that the idea of alignment in this theory enables the analysis to go one step further in thinking about the degree to which actants are in agreement with how the project will proceed instead of just relying on a stakeholder analysis commonly employed in many projects.

Also, of relevance to this study are prior investigations using ANT to better understand the translation element in the formation of sociotechnical networks. Such studies have focused on how a range of information technologies such as electronic work time registrations systems (Bartis & Mitev, 2008) intranets (Hall, 2004) health management information systems (Cresswell et al., 2011; Booth et al., 2016), enterprise resource planning systems (Elbanna, 2010), mobile payment (Harry et al., 2014) are eventually utilised in particular diverse settings.

In a study of translation in the Automated Teller Machine (ATM) cybernetic network, Introna and Whittaker (2006) highlight the inherence of politics in ITC innovations. They afford the average enabled person and constrain those less equipped in terms of the features of the digital

channel. Thus, the study highlights the inclusion and exclusion of certain interests (the politics of artefacts) in designing innovative technologies while providing rich descriptions of the translation process involving designers, users and the technology itself. The initial version of the ATM neglected the needs of disabled groups such as the illiterate and the blind.

Heeks and Stanforth (2015) apply the moments of translation framework to the case of a new digital technology-enabled system in the Srilankan public sector. The utility of this study is that it provides access to rich insights into processes of technological change and about the challenges and limitations of using this theoretical lens. The study also provides a detailed account of technological change processes for development while illuminating the socio-technical structure; the active role of technology, and the translation of interests, ideas and identities during the process of network creation.

The common thread that runs throw these above reviewed studies is the concern with how human and non-human actors persuade each other (e.g. through political manoeuvre) to align their interests towards a common goal. Further to that, these studies have demonstrated how actors develop specific relations between them and embrace certain strategies in ways that they themselves can hold together long enough to achieve a particular purpose – to become a stable actor-network; a technology used in practice. In line with these concerns, the following statements were considered as initial lines of inquiry during the process of data analysis.

1. The existence of powerful actors whose strategies can mobilise other actors is required for producing acceptance of new technologies (Linde et al., 2003).
2. The adoption of technologies might be impeded when they threaten the status quo by putting at risk the position of some employees (Bartis & Mitev, 2008).
3. The emergence of competing actor-networks, or actors acting as key opponents might undermine the translation process (Wilson & Howcroft, 2002; Cho et al., 2008).
4. Work practices, actors situated outside the boundaries of a particular actor-network, and other actor-networks, among other factors, can be seen as powerful actors that can enforce or weaken a particular network (Avgerou, 2013; Effah, 2012; Cho et al., 2008).
5. Focal actors interested in promoting themselves as the Obligatory Passage Point (OPP) might use their power to sell the relevant technology or hide problems arising during the implementation (Bartis & Mitev, 2008; Wilson & Howcroft, 2002).
6. Technologies and technical issues can be seen as powerful actors that might enforce or weaken a network (Avgerou, 2008; 2013). For instance, they can carry inscriptions and

interests that privilege some potential users but constrain others (Harry et al., 2014; Avgerou, 2008; Introna & Whittaker, 2006; Walsham & Sahay, 1999). New technologies might perform poorly (Wilson & Howcroft, 2002), or perform in ways not previously expected (Heeks & Stanforth, 2015; Hanseth & Braa, 1998) to the extent that those supporting their adoption might feel betrayed and therefore change the alignment of their interests.

7. The adoption of technologies can be significantly affected by the lack of enrolment of relevant actors (Harry et al., 2014; Sarker et al., 2006; Walsham & Sahay, 1999) and the lack of negotiations taking place between relevant actors (Elbanna, 2010.

The studies highlighted above are highly relevant to the work undertaken for this thesis since they used ANT to explore what shapes sociotechnical network formation. In view of the continued increase in use of digital technologies and mobile technology in the payments' space, this situation was seen as an opportunity for ANT to be used as a theoretical lens to inform this study. The use of ANT to understand the use of technologies to support and formalise remittance transfer has been under explored. This study is an attempt to bridge the gap in the literature. It is, however, necessary at this juncture to acknowledge the critiques and potential limitations of some of ANT's controversial claims.

3.6 Critiques of ANT

These critiques of ANT are primarily built on those identified in prior studies by Walsham (1997; 2017), Gad and Bruun Jensen (2010), Whittle and Spicer (2008), Munir and Jones (2004), McLean & Hassard (2004), Calas and Smircich (1999), and Amsterdamska (1990). Four main concerns that are pertinent to this study will be considered, namely: the principle of generalised symmetry; the flat ontology of the ANT; the Machiavellian orientation of ANT; and the risk of adopting an objective and un-reflexive stance when using this approach. While some proponents of ANT have suggested that debates around perceived limitations of the lens are mainly based on misunderstanding (Callon & Latour, 1992; Latour, 1999), there was need to identify these concerns and anticipate potential challenges that might emerge during the research process and proffer some means of tackling these concerns. Accordingly, this study clarifies the stance adopted in the study to mitigate the impact of the identified concerns.

General symmetry

The idea that this principle challenges the unique richness of human agency is specifically identified as a problem. In criticising this principle, Collins and Yearley (1992) argued that the symmetrical treatment of humans and non-humans is intellectually and morally problematic as it removes humans from their pivotal role (Whittle & Spicer, 2008). Similarly, Amsterdamska (1990, p. 21) criticised the principle for urging researchers "to abandon all distinctions between humans and non-humans". As a consequence, critics of ANT claim that it adopts a-moral and a-political stances (Walsham, 1997). In contrast, those challenging this criticism contend that the symmetrical stance merely seeks to overcome the overemphasis given to human agency that is trumpeted in social studies (Latour 2005).

This study adopted a stance that acknowledges that the extreme position of general symmetry invokes difficulties when viewed uncritically. At the same time, it also acknowledges that assuming a symmetric stance towards human and non-humans has the potential to examine critically and elicit unique insights about the nature and role of technology that supports mobile remittances and the role that it plays in its own adoption. Thus, this study concurs with the aim proposed by Latour and Callon (1992) of using the principle as "an analytical stance, not as an ethical position" (p. 383).

Reflexive approach

Another critique levelled at ANT questions the reflexive approach of the lens (Whittle & Spicer, 2008; Cordella & Shaikh, 2006). They contend that there is a danger of not reflexively applying the four-phase model of translation (Callon, 1986) in an attempt to verify the universality of the theory. Consequently, those using ANT are likely to treat the claims of others as relative while representing their own interpretations as absolute truth (Whittle & Spicer, 2008).

To mitigate these risks in this inquiry, I acknowledge that: firstly, reality is a process of construction and interpretation in which the researcher plays a key role; and secondly, the potential of multiple interpretations is not only possible but desirable. Therefore, rather than engage in a deductive approach to test or refute the conceptual tools provided by ANT, these analytical devises are adopted as sensitising ideas to explore the phenomenon under investigation in the light of the particular preoccupation of the approach. No attempt to test or

prove the theory is made in this study and the active role of the researcher on how actors and informants are selected is acknowledged.

Machiavellian orientation

The ANT has been criticised for Machiavellian orientation, which relates to how the lens pays most interest in understanding how things become aligned and centred (Calas & Smircich, 1999). Critics argue that it puts an over-emphasis on control and management. This is amplified in the focus of ANT studies on privileged, strong actors who aim to create stronger networks, and its (supposed) blindness towards other possible ways in which networks might develop (Gad & Bruun Jensen, 2010). This is also reflected in the observation that those who exercise power are very often humans portrayed as the centre of the network, obscuring the claim of ANT that power is a function of networks rather than actors (Whittle & Spicer, 2008; Miettinen, 1999). To mitigate this limitation, Gad and Bruun Jensen (2010) caution that researchers must make an effort to maintain "sensitivity to complexity" that can be realised through adopting the translation model of power which "looks at the links in the chain and notes that at each point there is local agency" (Fox, 2000, p. 861). Conversely, the diffusion model assumes that a successful command comes from a central source, through the chain of command and is implemented. Hence, when a president or manager speaks, action simply follows.

Is ANT a method or a theory?

Critics of ANT argue that the approach is too descriptive and fails to settle on any suggestions of how actions and constellations should be analysed and interpreted (Creswell et al., 2011; Kaghan & Bowker, 2001). Waker (1998) proffers a classical notion of a theory, suggesting that it should be able to explain "how and why" things should occur by exploring relationships. With ANT a researcher can describe how things occur and how relationships between actors change. However, the lens lacks explanatory power to illuminate why things occur (Cresswell et al., 2011). Further to that, ANT has a limited capability in developing empirically verifiable evidence (Cresswell et al., 2011). Therefore, it may be helpful to view ANT as somewhere between a theory and a method.

This study utilises ANT as an analytic technique that can be used to follow actors to understand what they do whilst questioning and challenging often taken-for-granted characteristics of actors such as technology (as passive actors) and accepting the flux and changing nature of reality. ANT is also used for data gathering and analysis through its renowned "follow the actor

mantra" (Latour, 2005) to identify research participants and their role in network creation as well as utilising the four phases of translation (Callon, 2007) to trace local level actor associations and the role, if any, of contextual issues at the macro-level of analysis.

Flat ontology of ANT

One of the enduring criticisms levelled at ANT that is pertinent in this study has been around the flat ontology of this theory. ANT does not a-priori divide the world into micro- and macro contexts or attribute agency to either individuals or social structures (Cresswell et al., 2011). According to Schatzki (2000) ANT is nominalist in nature since it assumes that there is no such thing as society or context, but only actors and their relations (Munir & Jones, 2004). Likewise, Latour (1999) claims "networks are immersed in nothing" (p. 128) and "the macrostructure of society is made of the same stuff as the microstructure" (1991, p. 118). Furthermore, Latour argues that ANT allows moving between different levels of analysis, thus assisting with the investigation of both the macrostructures and the microstructures using the same methodological approach.

Critics insist that while the lens is mainly useful for articulating actor interactions at the local (action level), it downplays the role of broader social structures (institutions) in shaping the local (Walsham, 2017). Hence, adopting this view neglects the existence of a context that acts as "a setting or backdrop that envelopes and determines phenomena" (Schatzki, 2002, p. xiv). This is reflected in the emphasis put in arguing that nature and society are effects of networks, not causes, or the view that "social structure is not a noun but a verb" (Law, 1992, p. 385).

Critics further contend that ANT's flat ontology neglect the regulating role that social structures play in shaping and giving consistency and continuity to relations developed among actors. Actor-networks cannot be sustainable when conceived of in a void, decoupled from the surrounding social, cultural, and historical context (Reed, 1995; Walsham, 2017). In a study of the introduction and implementation of e-voting in Brazil, Avgerou (2013) argues that the institutional context of sociotechnical actors shapes their perceptions, interpretations of the innovation and subsequently their social action (Ramadani et al., 2018). Yet, adopting ANT implies, at the same time, the rejection of the existence of context. Consequently, ANT has restricted theoretical applicability. To buffer against this limitation when studying information

technologies, Walsham (2017) has suggested combining the methodological and conceptual ideas of ANT with insights from other social theories.

Walsham (2017) advocates for enriching the lens with one of the theories of social structure such as Institutional Theory (North, 1990; Scot 1994; DiMaggio & Powell, 1991) or Structuration Theory (Giddens, 1986) to buffer its identified limitation. Accordingly, this study heeds those calls and specifically searched for a more explanatory theoretical framework that illuminates the role of institutional and as well as organisational factors shaping local developments as human and non-human elements dynamically interact during the fabrication of a sociotechnical network. Complementing Actor-Network Theory with the Legitimacy Perspective may provide the desired explanatory power, lacking when ANT is used alone.

This study argues that broader social factors should be seriously considered and may be viewed as other parts of the network. Institutions are particularly salient when examining technology implementation and adoption in the context of the developing countries characterised by weak regulatory frameworks (Ratha et al., 2011; Ratha, 2013) Hence, they should be foregrounded to get a better understanding of how sociotechnical assemblages are created. What has, however, **not** been suggested by scholars motivating for the fusion of the different approaches in order to augment the Actor-Network Theory lens is **how** that can be done. Accordingly, this study seeks to understand how the focal actor deploys legitimating strategies to create a sociotechnical network (i.e. a remittance transfer channel) that allows remitters and receivers to use their mobile phones in remittance transfers. Therefore, the following segment gives a synopsis of organisational legitimacy that derives from institutional theory.

3.7 Institutional legitimacy

Prior Information Technology/Systems research has drawn liberally on concepts, propositions and instruments developed by students of organisations (Orlikowski, 2016). In an earlier study, Orlikowski together with Barley argued that one cannot explain everything that happens in an organisation by considering only the rational actions of its different actors, but rather one must find a means for taking into account the pressure arising within the institutional context that surrounds these actors, which might account for perceived "irrationalities"(Orlikowski & Barley, 2001). The new institutionalism sees organisations as shaped by deeper social norms and expectations that condition, if not determine, what can be considered acceptable modes of organising at any time (Scott, 2001; DiMaggio & Powell, 1983, 1991). Therefore, in order to be accepted or acquire legitimacy, organisations invariably yield to pressure from norms,

values, standards and practices that guide them to behave in a way that creates disharmony. Institutions are social structures that 'provide stability and meaning to social life' (Scott, 2014, p. 56). These rules of the game can both enable and constrain action (North, 1990).

Institutions are regarded as means of reducing uncertainty, information and transaction costs (North, 1990). Institutional theory has been a fundamental pillar in conducting business research in emerging economies (Barnard et al., 2017; Khanna, Krishna, & Bullock, 2010). Scholars focusing on this setting draw from the likes of DiMaggio and Powell (1991) who focused on the broad institutional structures from economics (e.g. laws, rules, regulations, norms and values) in a given setting and how they legitimise organisations that adhere to them. While DiMaggio and Powell (1991) are concerned with institutional legitimacy, Suchman (1995) is concerned with organisational legitimacy (Fisher et al., 2017). This study adopts Suchman's approach from the perspective of the organisation because it is concerned with how a remittance service provider, as the project initiator and primary actor, deploys legitimation strategies to build a stable sociotechnical network of mobile remittances. The following segment will provide a brief review of relevant concepts from Institutional Theory.

A brief review of concepts from Institutional Theory

According to DiMaggio and Powell (1991), isomorphism is the concept that best describes how institutions drive one actor (e.g. organisation) in a population to align with other actors that exist in the same environment. They broke down the concept into three different isomorphic processes: coercive isomorphism, mimetic isomorphism, and normative isomorphism. Coercive isomorphism relates to external factors such as government policy or regulation, or shareholder influence that exert pressure on an organisation to behave in a certain acceptable manner to avoid sanctions thereby creating some form of homogeneity within organisations operating in a given market category. The most prominent regulations governing mobile money that service providers need to comply with to gain industry legitimacy are Anti Money Laundering (AML), Combating the Financing of Terrorism (CFT) laws and the Customer Due Deligence (CDD) (GSMA, 2017). Related to these are standard processes that indicate compliance that can be observed and monitored.

Mimetic isomorphism, involves organisations trying to mimic other organisations' in the same category to gain legitimacy (DiMaggio & Powell, 1991). For instance, banking products, branch set-up, and the procedures followed are largely uniform. In most cases, this is not because of regulatory requirements but industry standards. Lastly, normative isomorphism

relates to the pressures stemming from common values to adopt particular institutional practices. Compliance with industry standards (e.g. accounting norms and standards) is an example of normative isomorphism (e.g Fernando & Lawrence, 2014). There are industry bodies that monitor compliance and sanction deviance. Despite their local and somewhat private activities, organisations yield to these isomorphic pressures to gain legitimacy in their setting thus secure their long-term survival.

Organisational legitimacy

This study foregrounds the role of institutions as an important element in sociotechnical network creation. The foremost proponent of organisational legitimacy, Suchman (1995), defines organisational legitimacy as "a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions" (p.25). Significantly, legitimacy is a socially constructed phenomenon that shapes, not only how stakeholders view an organisation, but also how they understand it and appraise it; as more worthy, meaningful and trustworthy; which in turn affects willingness to associate with it and the level of support extended to it (Kuratko et al., 2017; Zott & Huy, 2007; Zimmerman & Zeitz, 2002; Suchman 1995). The positioning of institutions within a wider social setting is a central characteristic of one perspective on legitimacy. This perspective posits that legitimacy is concerned with the 'congruence between the social values associated with or implied by (organisational) activities and the norms of acceptable behaviour in the larger social system' (Dowling & Pfeffer, 1975, p. 122). Such a view poses significant questions for mobile payment solutions, which are located within a socially constructed and multi-faceted social system.

In order to be perceived as legitimate in the eyes of its heterogeneous set of potential allies, an organisation must align its structure, practices and behaviours with the dominant institutions in the location in which it operates (Tolbert et al., 2011). Ruef and Scott (1988) contend that legitimacy is conferred by sources who make legitimacy evaluations by comparing organisations to particular criteria or standards that derive from broad social structures. These sources, conceived as actants in this study, may include some agents of the state such a regulator, the media, social movements, and interest groups, service users, technology suppliers, distribution partners and other third parties.

Legitimacy has a clear influence on social and economic exchange since most stakeholders (actors) will only engage with legitimate organisations that operate within the bounds and

norms of society or, simply, the expectations of society (Deephouse, et al., 2016; Fisher et al., 2017). A new venture that lacks legitimacy struggles to: 1) access much needed resources and support (Fisher et al., 2016; Zott & Huy, 2007; Zimmerman & Zeitz, 2002), 2) enrol other critical actors like strategic alliances and partnerships (Kuratko et al., 2017), 3) risks being overlooked for new contracts (Peake & D'Souza, 2017), and 4) struggles to garner positive attention from media (Walker et al., 2014; Pollack & Rindova, 2003). In sum, Brown (2013) asserted that "legitimate status is a *sine qua non* for easy access to resources, unrestricted access to markets, and long-term survival" (p.877). Consequently, to avoid so-called 'legitimacy gaps" that often arise, organisations are inevitably expected to deploy and implement proper legitimisation strategies to acquire, maintain and recover a corporate licence to operate (Suchman, 1995; Deephouse et al., 2016; Fisher et al., 2016; Fisher et al., 2017). This study is concerned with how an organisation acquires legitimacy to attract other elements (human and non-human) which possess desired resources in order to create an ecosystem that, from a distance, can be viewed as a single entity offering mobile remittances services.

3.7.1 Legitimation strategies and mechanisms

This study drew on new venture legitimation studies (e.g. Garud et al., 2014) focussing on understanding the role and diverse legitimation activities at different phases of the translation process. Prior studies addressing institutional and organisational legitimacy are criticised for not distinguishing legitimacy judgements made by heterogeneous audiences (Zott & Huy, 2007). Consequently, idiosyncrasies and "irrationalities" in audience judgements were concealed or neglected. This study seeks to go beyond this seemingly simplistic assumption of a single venture audience to explore how legitimacy judgements differ across various audience contexts during the network building process. The study will draw on Uberbacher (2014) who identified, coded and reviewed 60 articles published between 1986 and 2012 that focused on new venture legitimacy. The study will also draw on Fisher et al. (2017) who used the same search process and criteria to identify and code an additional 10 articles incorporating issues of new venture legitimacy published between 2013 and 2015.

3.7.2 Operationalising legitimacy strategies

This study drew on high-level legitimation strategies proffered in management and organisation research to help new venues acquire legitimacy that give them access to resources. These are namely argumentation, manipulation, selection and adaptation (conformation)

(Fisher et al., 2016; Zott & Huy, 2007; Zimmerman & Zeitz, 2002). Below is a brief description of each of the main high-level strategies and how this study operationalised them.

Argumentation: This strategy is an equivalent of "creation" as it may involve creating a new market for a new innovation (Kuratko et al., 2017). It entails deliberating with potential network allies to motivate and justify finding a common ground and reaching consensus or agreeing on compromise solutions (Baumann-Pauly et al., 2016). It is especially deployed in the introductory stage of new innovative ventures, such as during the M-Pesa launch in Kenya in 2007 (Mas & Redcliff, 2011), since it is used to help other actants to shift their behaviour (Zimmerman & Zeitz, 2002; Suchman, 1995). Unbanked populations primarily depended on cash-based remittances hence using cross-border couriers is socially embedded practice (Thebe & Mutyatyu, 2017) that is hard to change.

Since the basis from which the new actor-network may derive legitimacy is established, this calls upon a creative focal actor to pioneer, discuss, explain and motivate for the new offering in order to, not only create an obligatory passage point (OPP) (Callon, 2007) but also establish the basis of legitimacy for those that come after it. In this study, argumentation is proposed to be very salient at the Problematisation and Interessement stages of the network formation process because that is where there is need to motivate and justify choices and actions. This is particularly important given that mobile remittances are a new innovation in this context.

Argumentation also entails co-developing a standard for an unregulated but contested behaviour (Baumann-Pauly et al., 2016). In view of the newness of the innovation in a space dominated by banks, traditional money transfer operators and the informal cash-based remittances, obtaining rules, regulations and standards may be inadequate to manage the channel. Therefore, legitimacy could be achieved using the media to provide 'storyboards', discussions and dialogue with opinion leaders, critics, stakeholders, competitors or regulatory bodies — to allow the target audience to make sense of, and thereby legitimate, specific ideas and practices (Palazzo & Scherer, 2006).

Palazzo and Scherer (2006) argue that the strategy of argumentation through discourse with actants becomes more important under conditions of high heterogeneity with regards to social expectations. For example, a study of Puma, a global sportswear conglomerate, reveals that the organisation leant to use moral discourse as a means to mitigate tension with other actors in its global value chain to acquire legitimacy in their eyes (Baumann-Pauly et al., 2016).

Manipulation: This strategy is used to advance the interest of the organisation by influencing the corporate environment, through communication strategies, in favour of the corporate strategy (Suchman, 1995). For example, this includes persuading, negotiating, political manoeuvring and lobbying for changes in rules, regulations, norms, scripts, values, logics, or models to allow the organisation to engage in an activity that may have been previously disallowed (Suchman, 1995). Manipulation is usually evident in the use of persuasive discourse and manipulative rhetoric issued through press statements or press releases (Brown, Ainsworth, & Grant, 2012) aimed at *convincing* legitimating actors and audiences. Corporations that utilise this strategy extensively leverage public relations and marketing.

Manipulation can be packaged differently for different target groups. It can be achieved through endorsements and story-telling (Fisher et al., 2017) by opinion leaders that have, for example, been enrolled in the network. This may be more useful in the Interessement, Enrolment and Mobilisation stages of the network building process. However, Baumann-Pauly et al. (2016) caution against attempting to keep critics at bay merely by manipulating potential network allies through persuasive language and rationale in press statements as the global sportswear company Puma later found out.

Selection: This strategy involves locating a venture in a favourable environment (Zimmerman & Zeitz, 2002; Suchman, 1995). In relation to this study, the remittance service provider may locate its activities in areas with a high traffic and concentration of migrants such as Johannesburg, for easy access to their target market. Selection also entails creating supply chain partnerships that enhance legitimacy or acceptance (Kuratko et al., 2017). Mobile money service providers create an agent network to enhance service access (Maurer et al.,2018). Anecdotal evidence suggests that they select agents that have a good reputation, robust distribution capacity, experience in payments and a loyal customer base.

Conformity (adaptation): This strategy resonates with the concept of isomorphism in institutional theory. It involves adapting to external expectations by "following the rules" (Zimmerman & Zeitz, 2002). This is envisaged to reduce the "liability of newness" that confronts new firms (Zott & Huy, 2007). The adaptation strategy entails not questioning, changing, or violating the social structure; rather, committing to a standard that is already established (Fisher et al., 2017). There is little room for strategic choice (Kuratko et al., 2017). An organisation may allow third parties, such as regulatory bodies, to assess service quality or regulatory compliance. This is a common feature in the well-regulated financial services sector

where, for instance, securing confidentiality of client information is normal practice. This contributes to trust and confidence, which are manifestations of legitimacy (Fisher et al., 2017).

Adaptation could be achieved through training of customer-facing staff (Baumann-Pauly et al., 2016) or joining an international, regional and industry bodies that enable the venture to identify and benchmark against best practices and relative to accepted standards. This may be in terms of wages for workers or service cost. In the context of this study, South African banks use retailers with a wide distribution infrastructure to offer agency banking services. Remittance service providers are also adopting this practice to tap into a mass market of migrants that are loyal to or patronise these retail outlets.

3.7.3 Hybridising legitimation strategies

Argumentation and manipulation strategies can co-exist, when a venture communicates with consumers of different knowledge levels. While some target groups may need to be convinced, others may want to know more about the operational details of using technology-based mobile remittance channels. Similarly, conversations that initially have a manipulative character can, over time, turn into actual argumentative exchanges and true partnerships (Fisher et al., 2017). Marketers may start with a desire to change consumer behaviour and then follow with a sustainable marketing as a key element of an organisation's Corporate Social Responsibility (CSR) strategy. Therefore, what looks like argumentation may in fact be manipulation to educate or convince investors and consumers. Baumann-Pauly et al.'s (2016) study found that, while Puma, engaged in argumentation strategies with civil society organisations, manipulation strategies were deployed for consumers, suppliers and investors.

3.8 Exemplar studies that utilised Legitimacy Perspective

Prior studies on legitimacy acquisition and maintenance for entrepreneurial organisations have largely focused on its attainment through different mechanisms or strategies. Bitektine (2011) observed that entrepreneurs, including new ventures, often accomplish this task by "presenting their innovation broadly enough to encompass existing knowledge and to invoke familiar cognitive categories" (p. 165). For instance, Martens et al. (2007) and Garud et al.'s (2014) studies cite narratives and stories as some of the potent argumentation and manipulation strategies that a new venture may deploy to acquire legitimacy in the eyes of its ecosystem actors. Similarly, Baumann-Pauly et al.'s (2016) longitudinal study of legitimacy strategies at

Puma, avers that the sports shoemaker learnt to commit to an argumentation strategy that called for the institutionalisation of a dialogue culture with its diverse actors.

Building on the classic insight that institutions are built upon language, scholars have also increasingly sought to understand better the link between communication (messaging) and institutions (e.g. Lammers, 2011; Suddaby, 2011). A large body of research has started to develop deeper insight into how different communication strategies (e.g. rhetorical legitimation) can impinge on actors' legitimacy assumptions or cognitions. Harmon et al.'s (2015) study builds on this work and contributes to our understanding of legitimation processes by describing the central role rhetorical structure plays in shaping legitimacy assumptions and maintaining and changing institutions. Likewise, in their study of how a new venture can attract investors through deploying legitimation strategies, Navis and Glynn (2011) observe that new ventures attain legitimacy through identity claims of "who we are" and "what we do".

Organisational websites (an example of archival data source) are increasingly assuming a central role in providing up-to-date information targeting various actors that constitute a firm's value chain. Durocher et al.'s (2016) study drew on a legitimacy framework to examine legitimacy management strategies utilised by large Canadian accounting firms in website communication directed at future employees. The study found that accounting firms appear to devote considerable effort to manage their legitimacy in the eyes of prospective employees and apparently use website communications to depict a work environment largely consistent with Millennials' system of values and beliefs. Consistent with that approach to data collection, this study will purposively sample and review archival data (.e.g. website videos, documents, advertisements etc) of the case study and carry out some discourse analysis to extract legitimation strategies used by the focal actor in enrolling other actors.

Legitimation by substantive actions, such as role performance and isomorphism (Ashforth & Gibbs, 1990) and conformance with and manipulation of the institutional environment (Zimmerman & Zeitz, 2002) are, arguably some of the more important strategies that entrepreneurial actor networks may employ. From these few examples on legitimacy acquisition strategies, one cannot help but discern that legitimacy attainment early in a venture's life cycle (actor-network development) does not necessarily guarantee its continuance over time. Each stage has got its unique challenges and needs to be addressed (maintained) accordingly.

Legitimacy Perspective assumes that stakeholders facing uncertainty regarding the legitimacy of the organisation may rely on the perceived quality of those associated with the firm; such as their suppliers, business partners or even board members, as a surrogate for the quality of the target organisation (Podolny, 1993). By the same token potential actants may rely on trusted and legitimate actors already enrolled to join the actor-network.

3.9 Conclusion

The review of related literature focused on three key elements that will guide this study: augmenting Actor-Network Theory with the Legitimacy perspective to better explain enrolment of potential network allies (e.g. service users). The review identified the gap in ANT occasioned by its radical ontology wherein it assumes that there is no context but only actors and their actions. Thus, it does not acknowledge the interest and active role of context and institutional conventions hence the need for a pragmatic application of the lens to take institutions seriously in order to provide a better account of network formation. Notwithstanding its well documented limitations, ANT is still the most appropriate lens to use for this study as its forte is in describing in rich and thick detail how technical design solutions are intertwined with organisational issues hence it is regarded "as a constructivist theory" (Mitev, 2000, p. 86). Chapter 3 will motivate for my choice of interpretive research philosophy and inductive approach undergirding my study. The research design, research method, data generation techniques and how the data was analysed was informed by the Actor-Network Theory's traditions. The prime objective was to demonstrate that the study is credible.

CHAPTER 4

RESEARCH DESIGN AND METHODOLOGY

4.1 Introduction

The interpretive research tradition guided this study. It assumes that phenomena are better understood through the meanings that subjects assign to them and that there can be multiple interpretations of the same phenomena. Hence, an interpretive study specifically aims to elicit my own interpretations as the researcher as well as access interpretations of research participants and other stakeholders. Qualitative methods of data collection are generally more suited to theory development, which is what this exploratory ANT-based qualitative case study sought to achieve. My aim was to build rather than test ANT theory, hence the proposed model (Figure 6.3) can be further refined and validated empirically in future studies. Likewise, I adopted the case study strategy because it allows for a closer scrutiny of key human and non-human actants and their dynamic interactions in the creation of a sociotechnical network. Similarly, data collection and analysis phases of the study was largely guided by the ANT precepts. This approach generated rich and thick descriptions of the phenomenon. I adopted Ness' (2015) idea that, "thick data is a lot of data; rich data is many layered, intricate, detailed, nuanced, and more" (p. 1409). In this study, I aspired to have both.

To ensure research quality and trustworthiness, I provide a detailed description of my activities, why those activities matter, and what I did in those activities. In short, I justified my choice of 1) Research paradigm, 2) Case study research design, 3) qualitative research methodology, 4) Sampling criteria and unit of analysis, 5) Data collection instruments (interviews, observation and archival data), and 6) Data analysis (inductive analysis methods. In the first segment of this chapter, I justify my choice of research paradigm and related ontological, epistemological and methodological concerns. I then provide a review of illustrative applications of Actor-Network Theory in prior studies that informed this study's research design, methodology, data analysis and quality assurance.

4.2 Research paradigm / philosophy

The interpretive flavour of this study is reflected in the adopted research design, the use of qualitative approaches, the inductive logic followed during the course of data collection and analysis, the strategies employed for recruitment of research participants, and the view of reality. Consistent with interpretivism, this study views reality as being socially constructed.

While the interpretive paradigm tends to promote the use of qualitative methods, a positivist approach is generally associated with the use of the quantitative methods (Morse, 2015). In relation to ontological, epistemological and methodological concerns, the positions of the interpretive and positivist paradigms are summarised below.

4.2.1 Ontological concerns

This study is anchored on the interpretivists research paradigm because of its primary premise that there are multiple interpretations of reality that have to be located within the context of time and place (Morse, et al., 2016). Interpretivists use the term 'constructivism' to suggest that reality is socially constructed (Eisenhardt et al., 2016). Conversely, positivistic adherents believe that reality exists out there, free of the individual's appreciation of it (Creswell, 2013). Consequently, facts creating reality are seen as positively given – hence positivism (Johnson et al., 2006). While the subject and object are seen by positivists as two elements, they become one to constructivist hence what is investigated is not seperated from the research process. This study recognises that multiple and sometimes contradicting realities (Guba & Lincoln, 1994) of the research participants (e.g. focal actor representatives, channel partners and users), realities of the researcher, and the realities of the audience interpreting the study ought to be embraced and reported.

4.2.2 Epistemological concerns

This study recognises that knowledge is generated through a dynamic interaction involving the researcher and the researched as the investigation proceeds. This is consistent with interpretivism which assumes that understanding the social world involves getting inside the world of those generating it (Eisenhardt et al., 2016). This required me to be as close as possible to research participants in order to understand the actors' viewpoints. Conversely, interpretivists accept that human subjectivity is legitimate. Consequently, my previous experience, interests, beliefs and values explicitly or implicitly influenced what I observed.

In contrast, positivists assume that it is possible to separate the researcher from the researched. Thus, observations of the empirical world can be neutral, value-free and objective (Creswell, 2013). As a result, a researcher can be a passive knower who can assume an objective stance and remain detached from the phenomenon under investigation. The researcher's observations are independent of the process of observation, in which values and biases are prevented from

influencing the outcome of the study (Guba & Lincoln, 1994). Positivists argue that non-observable mechanisms should be rejected because they only represent speculations.

4.2.3 Methodological concerns

My case study recognises that since knowledge is socially constructed, therefore direct interaction with the phenomenon is required to obtain an inside view of it. I am expected to rely as much as possible on the participants' view of the situation (Creswell, 2013). Interpretivists derive their constructs by in-depth examination of the phenomenon of interests (Orlikowski & Baroudi, 1991). In this interpretive study I report multiple perspectives and identify the complex interactions involved in the phenomenon under investigation, whereas positivists would seek to explain and predict relationships between objects and events.

4.3 ANT and interpretive research

Consistent with Actor Network Theory, prior studies attempt to develop the lens through case studies, phenomenological and hermeneutic approaches (Gregor, 2007). I adopted a case study approach and the ANT guided data generation and analysis because of its assumption that actors are able to propose their own theories of action which should be the first port of call in creating a network. This approach primarily relies on the interpretive approach, not only to capture the human experiences, but how the individuals themselves make sense of these experiences. Yin, (2013) defines a case study as an empirical inquiry that investigates a current issue or event within its real-life context, particularly where the boundary between such issues and context is not visibly defined. Yin (2013) further argues that the vehicle for empirical research approaches that focus on human interpretations and meanings is the in-depth case study. Reviewed prior ANT-based studies predominantly used a case study approach.

My case study specifically sought to tease out those special insights that participants bring to make sense of how a mobile remittance sociotechnical network is created. This is consistent with interpretivism which accepts that research participants have a rich gamut of experiences and insights derived from their cultural backgrounds, which shape how they make sense of reality. Further to that, interpretive studies emphasise the primacy of constructing theory from data (Eisenhardt et al., 2016; Gehman, et al., 2017) which is what I endeavour to do in this study. My study sought to enhance the potency of ANT, as a research lens, by augmenting it with the Legitimacy Perspective to foreground the role and influence of contextual factors.

4.3.1 Illustrative applications of ANT

A rich repertoire of exemplar studies has carried out in-depth case studies of organisations implementing an innovative system within a given setting through the Actor-Network lens (e.g. Michael, 2017; Booth, et al., 2016; Heeks & Stanforth, 2015; Ballantyne, 2015; Harry, Sewchurran, & Brown, 2014; Keith & Van Belle, 2014; Mpazanje, Sewchurran, & Brown, 2013; Sarker, Sarker, & Sidorova, 2006; Allen, 2004). ANT-based studies have been primarily anchored on the interpretivist paradigm and case study design. Case study is the most regularly used qualitative research approach in the IS field (Orlikowski & Baroudi, 1991; Tatnall, 2013).

ANT-based studies also adopted the mantra to "follow the actor and networks" (Latour, 2005) as a way of selecting participants. Researchers primarily utilise multiple data generation techniques dominated by semi-structured interviews while being complemented by active field observations of both humans and non-human participants, and archival data reviews (e.g. project documents, videos, pictures, photographs). The key starting point has been the focal actor to map the boundaries of their cases (e.g. Heeks & Stanforth, 2015; Harry et al., 2014; Avgerou, 2013; Effah, 2012; Mpazanje, et al., 2013, Sarker et al., 2006).

My case study drew on several prior case studies that utilised the "moments of translation" concept from ANT. For example, Heeks and Stanforth (2015) applied the "moments of translation" framework to analyse a single case of introducing a new technology-based finance system in the Sri Lankan public sector. The study used multi data collection instruments that were dominated by interviews augmented with field observations and archival data. Similarly, Pollack et al. (2013) used the theory's moments of translation framework in an embedded case study examining the development and deployment of a project management information system (PMIS) in three public sector case study agencies (law enforcement, emergency services and health respectively) in New South Wales, Australia. Likewise, a case study strategy, utilising the translation framework, was also employed by Mpazanje et al. (2013) to carry out an in-depth analysis of an Information System (IS) project executed in Malawi. Keith and Van Belle (2014) also utilised a case study approach at the University of Cape Town (UCT), South Africa, to examine the use of Facebook as a potentially appropriate Social Networking Site to facilitate stakeholder's interactions within the institution.

4.4 Six key interpretive features of this study

1. Research design
2. Case selection
3. The use of qualitative methods
4. Strategy used for recruitment of research participants
5. The inductive logic followed during the process of data collection and analysis; and,
6. The perception of reality being socially constructed.

4.4.1 Research design

Consistent with some prior studies that have used ANT, this is a case study of a mobile-based remittance service provider (focal actor) as it is embedded in the context of a network of potential allies and competitors. Therefore, the case is the network of relationships around the focal actor. Just like in the given examples of ANT-based prior case studies, I adopted a case study strategy to generate a thick description and rich analysis of the process of creating a mobile remittance network. I generated empirical data through multiple sources: interviews, observations and archival data. Multiple data sources were employed to facilitate corroboration, which enables triangulation that enhance research rigour and trustworthiness (validity) (Morse, et al., 2016; Creswell & Miller, 2000).

Table 4.1: Summary of the research design and methodology

Research context	Understanding IS network building process
Research paradigm	Interpretive
Nature of research	Exploratory
Research underlying theory	Actor-Network Theory and the Legitimacy Perspective
Research strategy	Case study
Data gathering techniques	Qualitative • Semi-structured interviews • Observations • Archival data (website, videos, photographs, articles)
Data Analysis	Inductive, Actor-Network Theory
Time frame	Cross-sectional

4.4.2 Case selection

A typical case of mobile remittances network was purposively selected. It is gaining traction as a remittance channel of choice in a corridor hitherto dominated by banks, traditional money transfer operators (e.g. MoneyGram and Western Union) and informal cash transfer networks (e, g. bus and truck drivers and visiting relatives). I then used theoretical sampling to identify research participants by following the mantra advocated by proponents of ANT to "follow the actor and networks" (Latour, 2005). Eisenhardt et al. (2016) concur that purposive and theoretical sampling, particularly in extreme cases (whether notable failures or success), is a useful mechanism for building theory, because it allows scholars to generate insights that might be concealed, obscured or absent in typical settings or in large-N, comparative studies.

Both human and non-human actors connected to the emergent mobile remittance network were identified to elicit their views and experiences. The focal actor representatives were identified to elicit the intent of setting up the channel while users and channel partners were followed to elicit their experiences of the focal actor strategies and activities. Interestingly, the Actor-Network approach assumes a flat ontology, it does not embrace generic levels of analysis (i.e. micro and macro) and participant (actor) selection procedures (McLean & Hassard, 2004). Thus, actors of importance cannot be predicted, or selected *a priori*; rather they are supposed to emerge from the way they shape or modify other actors in the translation process (Walsham, 2017). Hence, the number of actors in the network was infinite, which posed a methodological challenge as one of the salient features of a case study is that it has to be bounded (Yin, 2009).

I had to make rigorous and pragmatic decisions of where (and from whom) to start and stop data collection. Prior studies suggest that when following the actor network, the researcher starts at a certain point, in most cases with the main actor and traces the heterogeneous elements that impact the actor's environment (e.g. Heeks & Stanforth, 2015; Mpazanje et al., 2013; Harry et al., 2014). Accordingly, the focal actor guided me in identifying the first generation of human and non-human actors with whom it had direct links. As illustrated in prior studies, the boundary of the case study became the primary network. However, this primary network only emerged upon engaging the focal actor. Likewise, based on the Actor Network Theory tradition, the calibre of research participants was not predetermined; rather they emerged from interviews (e.g. Heeks & Stanforth, 2015; Harry et al., 2014; Mpazanje et al., 2013; Pollack et al., 2013).

The interpretive character of this study was reflected in the strategies adopted to recruit research participants. Contrary to the strategy followed by positivists, of randomly selecting their subjects of study in order to generalise their findings to other contexts; this study followed and selected participants that reflected "polar types" (Eisenhardt et al., 2016).

The "polar types" concept is found in interpretive theory in which the researcher accepts the multiplicity of peoples, cultures, and means of knowing and understanding (Eisenhardt et al., 2016). Assuming this strategy assisted in choosing participants who had different and contradictory interests during the process of network creation thus helping to observe maximum variation and attain data saturation. Bernard (2012) suggested the interviewing of people that one would not typically consider. He advised against the "shaman effect", in that someone with expert information on a topic can deliberately or inadvertently overshadow the data by giving primacy to the voices of more powerful actors. My objective was to demonstrate complexity of the phenomenon under investigation without necessarily generalising findings.

4.5 Practicalities of the study

4.5.1 Access to study setting and participants

Access to the focal actor was sought through a formal letter for consent to allow access to interview participants in the organisation, observation sites and archival sources. This was granted in March 2018 after a face-to-face conversation with the Chief Executive Officer (CEO) to provide details of the doctoral research was held at the headquarters of the focal actor. The CEO expressed his keenness to support the research by providing access to participants and some innocuous official documents. There was an apparent concern about commercial interests. After an agreement was reached, a letter of confidentiality was signed by the researcher in May 2018. Despite assurances of confidentiality that I gave to focal actor representatives prior to interviews, I could sense discomfort on questions relating to commercial information. The following section describes and justifies the data collection methods chosen in the study, and how they were used.

4.5.2 Selection of research participants

As stated above, ANT forbids establishing a sample in advance. I utilised theoretical sampling - follow the actor and networks - to identify research participants. The relevant participants

emerged from my engagement with the focal actor and subsequent referrals from initial interviews. Three main categories of potential participants were identified as:

- o Project team members who were involved in the planning and execution of the emergent network. Their viewpoints were insightful to examine the origins of the mobile remittance technology and to offer an overall perspective of the phases of the emergent mobile remittance project.

- o Experts in the emergent mobile-based retail payment systems.

- o Regulators key in guiding the implementation of the mobile remittance network

- o Channel partners that include agents (large and small retailers), mobile network operators and money transfer operators (MTOs).

- o Technological artefacts and other non-human actants (e.g. regulations and events) which had a role and interests in the emerging sociotechnical network.

In line with the aim of capturing "polar types" for maximum variation, I then purposefully selected and followed eight (9) representatives from the focal actor for interviews to get a holistic perspective of the various activities deployed to enrol regulators, channel partners and users to stabilise the network. Purposeful sampling was germane because informants were chosen on the basis of better understanding the issues of major importance to the phenomena. That also assisted in my quest for data saturation.

To that end, the Table 4.2 shows that eight (11) participants representing the focal actor included Board members, Project Team leaders, a Business Development Executive, Sales Executives and a Risk, and Compliance Manager and Consultant. Then a sample of seven (7) technology users comprising remittance senders in South Africa was identified and selected for interviews to elicit the experience of technology's current and potential users. Consistent with the "polar types" strategy for maximum variation, interview participants purposefully selected also included migrants currently using the new channel (network) under study, secondly, those that used and stopped, and thirdly, those that have not used the system and may be using alternative networks. The sample also included an expert on mobile money technology (MMT), a regulator representative and three (4) channel agents. A total of twenty-four (24) interviews were conducted to achieve data saturation.

Table 4.2 Summary of research participants

Name	Gender	Age	Interview Location	Role	Representing
Debby	Female	36	Harare	CEO	Focal actor
Danny	Male	42	Johannesburg	Project Leader	Focal actor
Ashley	Male	45	Johannesburg	Ass. Project Leader (APL)	Focal actor
Nyasha	Male	38	Harare	Sales Manager	Focal actor
Edd	Male	36	Harare	Bus. Dev. Exec (BDE)	Focal actor
Sam	Male	37	Harare	Sales Exec. 1	Focal actor
Emma	Female	39	Harare	Sales Exec. 2	Focal actor
Doug	Male	55	Harare	Board Member	Focal actor
Stella	Female	42	Harare	Board Member	Focal actor
Dave	Male	37	Harare	Risk & Compl. Manager (RCM)	Focal actor
Grace	Female	42	Harare	Proj. Consultant	Focal actor
Phil	Male	42	Johannesburg	Agent 1	Focal actor
Sdumo	Male	38	Johannesburg	Agent 2	Focal actor
Farai	Female	35	North West Prov.	Agent 3	Focal actor
Zee	Male	43	Johannesburg	Agent 4	Focal actor
Nkosi	Male	45	Harare	Industry Expert	Industry
Tari	Female	34	Harare	Regulator Rep (RBZ)	Regulators
Ethan	Male	48	Bulawayo	Technology User 1	Users
Ngqe	Male	33	Johannesburg	Technology User 2	Users
Brain	Male	40	Bulawayo	Technology User 3	Users
Jabu	Male	58	Johannesburg	Technology User 4	Users
Thandi	Female	37	Johannesburg	Technology User 5	Users
Eunice	Female	43	Bulawayo	Technology User 6	Users
Similo	Male	41	Bulawayo	Technology User 7	Users
Jethro	Male	42	Harare	Technology User 8	Users
				Total Interviews	**24**

As stated above, an attempt was made to maximise diversity of opinions that could be of relevance to understand activities involved in the creation of a sociotechnical mobile remittance network while utilising legitimation strategies to stabilise the emergent network. In view of the emergent nature of the mobile remittance network, the selection of participants in the first part of the study relied on the Project Leader's knowledge. The Project Leader was interviewed first in Johannesburg. During the face-to-face interview, it was clarified to the Project Leader the strategy that would be used to select informants, in which selecting examples of "polar types" was essential to maximise variation.

For easy access at minimal cost, I selected participants in the focal actor's Johannesburg and Harare offices as well as users in Johannesburg to interview. Table 4.2 shows the research participants interviewed at each part of the research according to the rational described above. Full details of research participants, including demographic information can be found in Appendices six and seven.

4.5.3 Data collection instruments

Consistent with other Actor Network Theory-related case studies (e.g. Heeks & Stanforth, 2015), I employed multiple sources of data and also multiple methods for data-gathering to attain data saturation or data adequacy. Interviews, archival data and field observations are the three main methods by which I attained saturation. While data saturation is a concept that is hard to define, researchers do concur on some common tenets and concepts: no new data, no new themes, no new coding, and ability to replicate the study (Guest et al., 2006). Data triangulation (multiple sources of data) is a method to get to data saturation (Ness, 2015).

Being the primary data gathering mechanism, I conducted interviews in a manner to attain data saturation by collecting rich (quality) and thick (quantity) data. For example, I structured interviews in a manner that facilitated asking multiple participants the same questions (see Appendices 3 and 4) cognisant of the "polar types" approach to elicit multiple perspectives on the given topic. I politely and firmly engaged gatekeepers at the research site who restricted access to key informants and obstruct complete data collection and saturation.

Semi-structured interviews were employed as the primary method to collect empirical data. Other secondary methods were considered to a lesser extent – field observation of agent enrolment and transaction activities, and mobile payments and migrant remittances archival

data reviews. My approach echoes Yin's (2013) advice that evidence for case studies should come from multiple sources of data to allow for triangulation to enhance research trustworthiness.

Two main aspects influenced the choice of data methods that I employed in this research, namely:

a) The usefulness of the method to answer the research questions.

b) The possibility of adopting particular methods in the light of access and availability of resources. For example, a lack of resources and time to spend on field observation led to the adoption of interviews as the primary mechanism to collect empirical data.

4.5.3.1 Semi-structured interviews

Face-to-face semi-structured interviews - rather than structured or unstructured interviews – were used as the primary tool for data generation because of the method's consistency with the interpretive nature of my research (Creswell 2013; Morgan & Smircich, 1980). Interview knowledge is seen as socially constructed (Orlikowski & Baroudi, 1991), created in interactions between the interviewer and the interviewee (Guba & Lincoln, 1994) while privileging the voice of the informants (Gioia et al., 2013).

In contrast to structured interviews, semi-structured interviews offered flexibility to capture the research participants' points of view without pre-determining their opinions through a *a priori* selection of questionnaire categories (Gioia et al., 2013). Equally, semi-structured interviews offered the possibility of flexibility to explore relevant and emergent topics. Therefore, interview schedules or protocols related to semi-structured interviews offered an adequate balance in the flow of interviews to ensure that aspects relevant to answering the research questions were discussed (see Appendices three and four). For example, in the interviews schedule, the questions are posed to elicit data related to legitimation as part of network creation activities. Technical language and direct questions on legitimation were avoided. Rather, the influence of social structures emerged from the activities and strategies implemented by the focal actor

Most interpretive studies use semi-structured interviews as the main route to accessing the interpretations of informants in the field (Yin, 2013; Walsham, 2005). This instrument also demanded careful, focused and acute listening and observation skills on my part to accurately

capture and interpret participants' experiences. I used probes to extract detailed descriptions and contain (bracket) my prejudices, hopes and biases to access insights on the influence of social structures on network creation.

Common risks that I kept in check include asking leading questions or imposing my view when exploring relevant aspects of a phenomenon under investigation. I was equally aware that interviewees might want to give a good impression of themselves and their institutions which might drive them to cheat and lie and say things that favour them. To mitigate such risks, different strategies were employed, such as commitment to build rapport and trust. I adopted an attitude of respect that showed research participants that their experiences, knowledge and feelings were important and respected. This was particularly important given that I was dealing with migrants some of whom fall under hidden populations since a significant number are undocumented, therefore, illegal (Silove et al., 1997; Higginbottom & Serrant-Green, 2005). I also sought explicit consent by asking participants to sign an interview consent form prior to interviews and adopted a balance between excessive passivity and over-direction in my interviewing style (Yin, 2013; Walsham, 2005).

The first interview provided a lead to meet the next set of interviewees depending on the direction the interview took. I asked for permission to tape-record all research interviews to allow a full and accurate record and description of what was said. All participants agreed to note-taking complemented by tape-recording.

Interview protocol

The schedules were mainly used to maintain the focus on relevant areas to be explored and conduct the interviews in a flexible way thus avoiding the need to ask specific questions in a particular order. One schedule targeted the focal actor and channel partners, and the other one targeted users. While the former was designed to trace and understand the intent of the focal actor in undertaking its network building activities, the latter focused on the experience of the target users in relation to the focal actor's activities and strategies in the different phases of the network building process.

The interview protocols provided some structure for engagement between the respondent and the researcher and enabled both to clarify, challenge, recontextualise, elaborate and interpret their experiences and discernments of the emergent network (Walsham, 2005). The criteria for designing the interview protocol were based on recommendations around creating tools for

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data collection that capture both form and content - both what is said and how it is said (Marshall et al., 2013).

Piloting interviews

Prior to collecting primary data using the interview protocols or schedules, I designed preliminary interview schedules. Two interview protocols that were commensurate with the type and calibre of the informants were then pretested through carrying out 4 interviews (2 with the focal actor and 2 with users) during a piloting exercise. The objective of the exercise was to test the clarity and relevance of the questions as well as the respondents' level of understanding of the content, learn the time it takes to complete the interview in the local setting, and to fine-tune the logistics of data collection.

Piloting exercises allowed me to identify factors such as variation, meaning, task difficulty, participants attention, flow of questions and attention (Gioia et al., 2013). Questions that seemed irrelevant, ambiguous and confusing were either discarded or modified to elicit the desired response that would address the research question. The data collected by the pilot test are not suitable for analysis (apart from testing the data entry and tabulation program) (Gioia et al., 2013) thus it was not merged with the data collected for analysis during the actual study.

Conducting interviews

As stated in the Research Design category above, a total of 24 interviews were conducted. The collection of data through interviews was carried out in two parts. Twenty (21) interviews were interviews were conducted on a face to face basis while three were conducted over the telephone. A few days in advance, prior to the interview, a phone call was made to each research participant to confirm the date, time and place of interview. For the focal actor representatives, the schedule of the interviews was arranged with support from the Project Leader. On the day of the interview, the arrival at the location was from 30 to 60 minutes early.

All interviews were conducted at the place preferred by the respondents. All interviews took place either in the office or alternative location of research participants or the interviewer. There were no major material differences on data collected from different locations except the fact that interviewing the focal actor representatives like agents on their business premises provided me with observation insights on how different network elements interacted during business executions.

After a personal introduction to interviewees, all interviews began with a brief description of the purpose of the research project , and how their collaboration by taking part in the interview was critical for the study. While explaining how the study emerged, the previous relation of the researcher to the mobile money technology sector, as an employee, as well as a former migrant in South Africa, was always mentioned. Doing so proved to be an effective strategy to create an appropriate atmosphere as I was then seen as part of 'the tec community and/or one of us'. This was a first step to establish rapport with interviewees as the researcher was not seen as a complete stranger. Likewise, it was noticed that conducting research in their offices or preferred location made research participants feel comfortable.

Before formerly initiating the interviews, the voluntary nature of the interviews was highlighted, and I also mentioned to research participants their right to withdraw at any time. Issues of confidentiality and anonymity were also addressed and stressed, and participants were asked to sign a consent form, specifically designed for the study (see Appendix two). Permission was sought to record the interview; all participants agreed.

The interviews for the focal actor representatives started by asking informants about their background, which included their general responsibilities in their jobs. At all time, genuine interest to what interviewee were saying was shown by concentrating and listening carefully. Guided by the interview protocols, the initial conversations during the first set of interviews with focal actor participants were followed by questions exploring their role, activities and intent in the network building process. I was careful not to use technical terms that are very commonly used in ANT-based accounts. The role and interests of various human and non-human actants emerged from the interviews and so did the focal actor's use of social structures to legitimate its new sociotechnical network. For instance, the aspect of communication, particularly through symbolic management to magnify the technical experience, resilience and market size of the focal actor, emerged as key elements that contributed to the focal actor's good reputation. Reputation was then used as a risk reducer in contexts characterised by low confidence and user trust in formal remittance channels.

The use of interview protocols offered the flexibility to prompt questions without the need to follow the sequential order ordinarily common with structured interviews. Thus, a conversational style was used. Doing it this way, though, also required full attention to ensure all important aspects stated in the interview schedules were explored. Using interview

schedules did not prevent me from exploring and probing emerging issues that appeared to be relevant to understand how a mobile remittance network is formed.

In comparison to the first set of interviews, when conducting the interviews in the second part with channel partners and users was more comfortable. Previous experience during the first part, familiarisation with the mobile payments terminology, and a clearer focus for the study enhanced confidence and facilitated the flow of the conversations. While being familiar with theoretical resources of ANT and the Legitimacy Perspective, including theoretical terms in the vocabulary that could have been unclear to research participants was avoided.

All respondents in the respective groups were asked identical questions in the same sequence, but I probed inductively on key responses. Despite all interviews being broadly guided by the same interview protocol, each interview was different. There was an increasing awareness of different issues permeating remittance practices so that these concerns were explored in more depth. Aspects frequently mentioned included the importance of a strong brand, and positive reputation for the focal actor as an antidote to social trust deficit in existing formal and informal remittance channels, the active role of both remitters and receivers in the formation of the new channel, challenges brought by excessive regulation in the mobile money space, and the political and power issues permeating the mobile remittance network creation initiatives.

Overall, interviews ranged in length from 30 to 80 minutes. The average interview was about 40 to 45 minutes. The decision to stop interviewing was made when all the key aspects outlined in the interview schedules had been covered. Before concluding the interviews, research participants were asked if they could be contacted again if required. Each interview participant was sent an expression of gratitude on email or on WhatsApp the same day as the interview.

Transcribing interviews

Data were collected between December 2017 and July 2018. While interviews were predominantly conducted in English, respondents were also given the option to use isiNdebele and Shona, the two dominant local languages for Zimbabwe when they felt that would help them better articulate issues. During this process of data collection, I began preparing the data for analysis. All interviews were tape recorded, and verbatim responses to each question were translated and transcribed by a professional translator (Creswell, 2013), using a standardized transcription protocol (McLellan et al., 2003). Being very proficient in all the three languages I then reviewed all transcripts for translation accuracy and revised when necessary.

4.5.3.2 Semi-structured observation

I purposively selected field observation sites and activities based on what or who to observe as well as how target field sites observed would help answer the research question. For example, using a Field Observation Guide (See Appendix 5), I selected observation episodes of user remittance transfer experiences at two agents' outlets in Johannesburg in Gauteng Province and Brits in North West Province to illuminate interactions between humans and technological artefacts. I had one more observation in Hillbrow, Johannesburg in the popular taxi rank for Zimbabwean migrants known as "Ezibayeni" to gain insight into the operations of the informal remittance service which would shape the positioning of emergent network by the focal actor to gain acceptance in that market. Field observations are seen as compatible with case study method (Gehman, et al., 2017).

In my agent observation in Brits, I was especially struck by the branding of the outlet that brought to the fore the interests and roles of various non-human actants such as outlet branding, tariff-sheet, terms and conditions chart, the Flash point of sale (POS) machine that is used for selling airtime as well as facilitating cash-in into mobile money wallets and the log book. These are the tangible items that the agent shows the focal actor sales representatives and the risk and compliance personnel as confirmation of compliance with set service levels and regulations in addition to the human interaction between agent personnel and customers.

Actor-Network Theory recognises that non-human actants cannot be interviewed hence the importance of observations to document how they translated human experiences during the human-technology interactions in the network building process. Audio-visual materials such as photographs were captured and used to document the field site experiences, which is consistent with the need for thick descriptions that mirror reality to enhance credibility.

I particularly used semi-structured observations in this study to observe specific interactions between the humans and materials using criteria such as the transaction outlet, setting and nature of physical materials (physical evidence) in that setting and how that facilitated or constrained actor interactions. For example, at one of the agents in Johannesburg, some transactions were not immediately recorded during peak periods such as the first week of the new month because the "transactor" (the agent representative facilitating transactions) focused on quickly working her POS machine to ensure customers were quickly served and recorded transaction details afterwards.

4.5.3.3 Archival data

Archival data such as publications on the sectoral context of the organisations, contracts, minutes for meetings, and internal documents (e.g. strategies, plans and evaluations), videos, photographs, and the focal actor's web-based data (e.g. e-mails, website or chat rooms) were valuable sources of data for onward triangulation with data from interviews and observations. Archival data was particularly useful in the initial phases as I sought to establish how the project was conceived and implemented. I elicited customer interests and perceptions through feedback channels such as the Facebook page of the focal actor.

Data saturation

Data saturation is a concept that is hard to define as what may be data saturation for one research design is not nearly enough for another (Ness, 2015; Guest et al., 2006). Inevitably, because study designs are not universal, there is no one-size-fits-all method to reach data saturation. However, researchers do concur on some common tenets and concepts illustrating data saturation: no new data, no new themes, no new coding, and ability to replicate the study (Guest et al., 2006). How and when one reaches those levels of saturation will differ from one study design to another, again contingent upon the chosen research design.

After analysing all 24 interview transcripts for this case study, my code-book contained a total of 438 codes and 54 codes groups to attain data saturation. Of these codes, 176 were identified within the first four transcripts. An additional 113 codes were in the next four transcripts for a cumulative total of 289 out of eight interviews, or 66% of all codes attributed to interview transcripts. As one would expect, the remaining 149 codes were identified with progressively less frequency (see Figure 4.1). Evidently, based on the code book I prepared (See Appendix 6), the full range of thematic discovery occurred almost entirely within the first eight interviews. Similarly, archival data sources generated a total of 72 codes of which 58 came from the first eight documents with the remaining 14 coming from the last 12 documents. The total number of open codes to reach data saturation was 510. Figure 4.1 below demonstrates how I reached data saturation from the interview transcripts.

Figure 4.1: Demonstrating data saturation
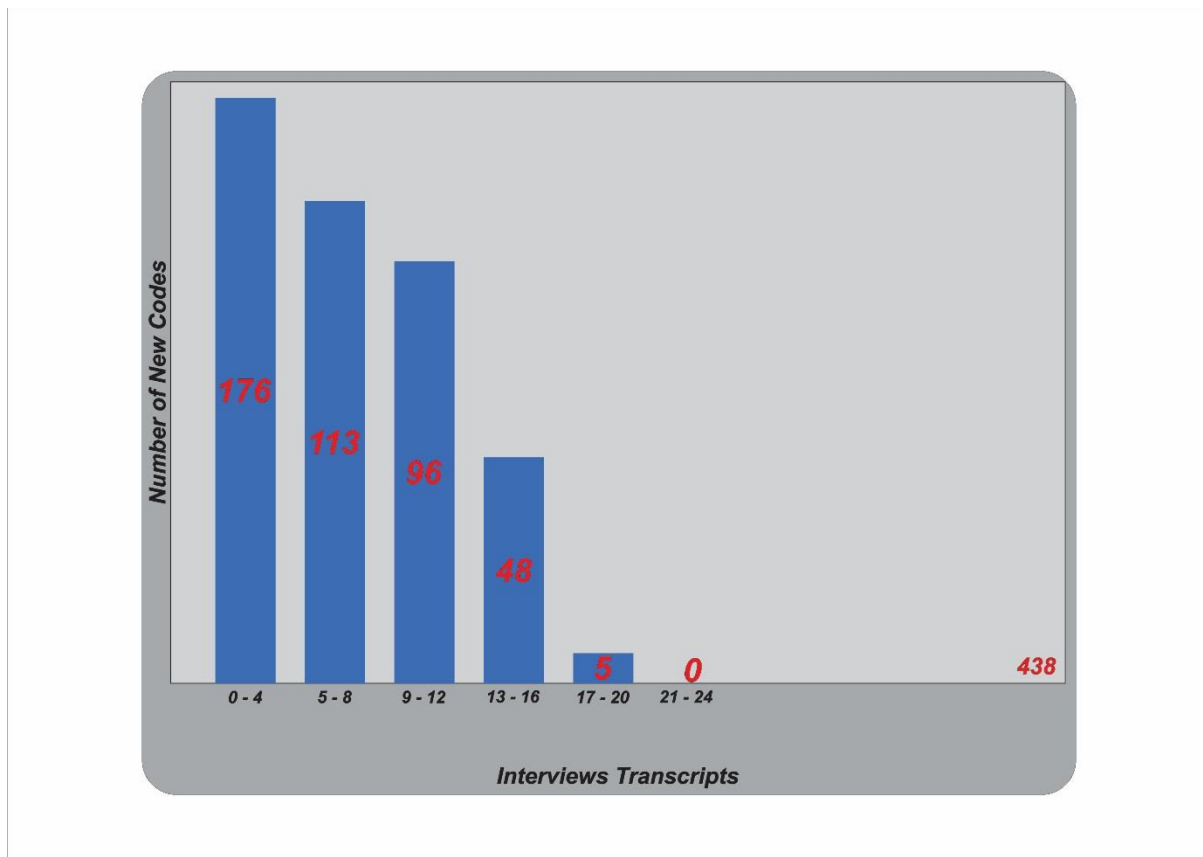
Burmeister and Aitken (2012) contend that neither a large sample size nor a small one can guarantee one will reach data saturation. Hence, in this case study, I thought of data in terms of rich and thick rather than the sample size. Accordingly, I adopted Ness' (2015) conception of rich as denoting quality while thick refers to quantity. Ness (2015) argues that, "thick data is a lot of data; rich data is many layered, intricate, detailed, nuanced, and more" (p. 1409). In this study, I aspired to have both rich and thick data descriptions obtained through relevant data multiple data collection methods for the case study research design that had the best opportunity to answer the research question. That helped me attain data saturation.

I also credit methodological triangulation as the avenue that helped me towards ensuring data saturation through multiple data sources. In addition to semi-structured interviews, I also utilised archival data sources as well as active field observation. Triangulation involves the employment of multiple external procedures to collect data including the analysis of the data (Denzin, 2009). This methodological triangulation ensured that data was rich in depth (Bekhet & Zauszniewski, 2012). Denzin (2012) equates triangulation to looking through a crystal to perceive all the facets or viewpoints of the data. Critically, the application of triangulation in

this study not only went a long way towards the attainment of data saturation, but it also improved the reliability of results.

4.6 The inductive logic during the process of data collection and analysis

This research followed an inductive and emergent logic during the processes of data collection and analysis. While based on a set of relevant themes to be explored, the data collection processes followed an emergent logic that assisted in conducting the interviews with flexibility and awareness. For example, the four moments of translation were seen as taking place in an ongoing and disorderly (messy) process, rather than looking at them as theoretical categories to prove their universality. In the case of the Legitimacy Perspective, the legitimating strategies that include selection and conformity assisted in exploring, for instance, the power aspects of institutions at the macro level rather than privileging one aspect over another in the analysis.

4.7 Knowledge is socially constructed

This study subscribed to the belief that data is core-created by the researcher and the research participants (Walsham, 2006). For example, the data collected via interviews was a way of seeing participants' reality as expressed by each participant. This was achieved by privileging the voice of research participants (Creswell, 2013). Equally, the interpretations provided not only reflected the view of the research participants, but also my interests, expectations and background knowledge as the researcher. Findings were then seen as relative and context-specific (Orlikowski & Baroudi, 1991) while multiple and contradictory realities were acknowledged to exist. Consequently, the interpretations provided in this research were just a few among many other possible interpretations.

4.8 Ethical considerations

The research discussed in this thesis involved working with human subjects. Accordingly, ethical issues such as anonymity, confidentiality, informant consent and privacy had to be considered and addressed throughout the research process (Patton, 2001). In November 2017, the ethics application forms to the Ethics Committee of the Gordon Institute of Business Science of the University of Pretoria were submitted. Ethical approval for the study was granted in November 2017 (see Appendix one), and the process of seeking organisational consent to collect data commenced.

Despite giving several assurances of confidentiality, being granted official permission to study the focal actor, as the primary sponsor of the emergent mobile remittance network, was difficult because of perceived risk around sharing commercial information by gatekeepers. It was only granted after over four months. Equally, most Sub Saharan African migrants are undocumented (Crush et al., 2017; Makina, 2012) hence this study population satisfies the criteria of a difficult to reach group in South Africa. As a result, ethical concerns arise on issues around participant selection, addressing cultural norms, and dealing with disclosure (Silove et al., 1997; Higginbottom & Serrant-Green, 2005). To this end, the three most important ethical elements applicable to the current study are:

- initial permission and voluntary participation,

- confidentiality and anonymity of the participants and the case study

- Researcher's objectivity and integrity.

Being granted permission to undertake the study from the GIBS' Research Ethics Committee would not necessarily suggest voluntary participation of all study participants. Thus, the company, as the focal actor, was approached prior to field work to grant formal consent to participate in the study. An initial email was sent to the Chief Executive Officer of the focal actor introducing the research project in detail. All participants were informed of the purpose of the study before commencing the interviews and were also informed of their right to withdraw from the interview at any time. It was further assured to all participants that their data would be treated in confidence and kept private. Critically, individual participants were informed up-front that they reserve the right to decline participation even if the authorities had given permission for the study.

Likewise, individual participants (e.g. users) were asked to give their consent in writing. Just like the company representatives, users were also given the opportunity to sign the 'Consent Form' that stated that they may exercise their right to withdraw from participation at any stage of the research process. Informed consent was received from all participants and the 'Consent Form' was signed by all participants (*see Appendix five*). Once the interviews were conducted, empirical data was kept securely in a password-protected folder. When reporting findings, codes to ensure total anonymity are used.

4.9 Data analysis

This section describes the procedure followed in the analysis of interview, observation and archival data. The data was interpreted through the Actor Network lens. Analysis phase was:

- o Guided by an interest in answering the research questions of the study
- o Theoretically informed. However, the theoretical lens was not used as a theory to be tested, or with the aim of proving its universality, but as a resource to identify key elements that make up that network and how they relate to create a stable sociotechnical network. The Legitimacy Perspective, a theory of social structure, was introduced to shed light on the role and influence of the macro-environment on network creation.
- o Aimed at identifying themes representing the core meaning of what research participants expressed about a phenomenon under investigation.
- o Was highly influenced by the analytical procedure of Saldaña (2015) to conduct coding and thematic analysis.

4.9.1 Analysis of interviews

The study utilised insights from the "Coding manual for qualitative researchers" (Saldaña, 2015) because it is an inductive qualitative analysis approach that offers a clear, comprehensive explanation of codes and coding methods and the role they play in qualitative research.

Data analysis was mainly guided by the research question and I adopted a hybrid process to identify themes within data and make sense of them through the lens of ANT being augmented by the Legitimacy Perspective. Analysis, therefore, incorporates both the data driven inductive approach suggested by Braun and Clarke (2006) and a more theory driven analysis guided by the particular preoccupations of ANT and the Legitimacy Perspective. The hybrid process allowed relevant themes to emerge directly from the data, while at the same time making sense of the empirical data through the theoretical resources of ANT and the Legitimacy Perspective.

4.9.2 Analytical procedure

After all interviews were transcribed, I adopted the six-phase approach to thematic analysis suggested by Braun and Clarke (2006). After the transcripts were read and edited, I loaded them onto ATLAS, TI. The following steps that I followed are suggested by Braun, et al. (2019): researcher familiarisation with the data, generation of initial codes, searching for themes, defining and naming themes, reporting findings. However, these phases were not

always followed in a linear way. Rather, this procedure was iterative and reflective, and moved back and forth across the empirical data and the theoretical resources as required.

STEP 1: Researcher familiarisation with the data

The process of my familiarisation with the data started before the interviews were conducted through an exploration of alternative data sources (e.g. a review of archival data) to gain insights about the project implementation. The familiarisation process continued during the interview process and the transcription process.

Through repeated readings of interview transcripts, a holistic sense of the whole set of empirical data collected was gained. For example, a list of activities implemented by the focal actor to attract other stakeholders onto the platform of mobile remittances was generated. These activities and ideas about network creation were also captured as part of memoing, which was further used during the analysis. After the analysis most of these initial thoughts were reflected in the findings.

STEP 2: Generating initial codes

A code represents a meaningful summary of the data and it is a mechanism by which the researcher can detect emergent patterns (Saldaña, 2015). Open coding entails making a decision about what is important (Cooper, 2009). This may have been what the respondent said, which represented an interpretation of the world from their point of view. For example, "regulation", "trust" and "reputation" emerged as open codes. My role was then to make meaning of those codes and establish patterns of interpretations in relation to network creation.

Once familiar with the data by doing several readings of the transcripts, four initial interview transcripts representing examples of polar types of interviewees were chosen in order to maximise the diversity of opinions to be included in the preliminary process of developing the codes. From this open coding process, a total of 510 codes was generated to reach saturation. A list of 176 initial codes was produced from the first batch of four transcripts followed by a new list of 113 new codes generated from the following batch of four transcripts suggesting a decline. The last 16 transcripts to make a total of 24 interviews merely generated a total of 149 new codes to suggest saturation as many of the codes were repeated from those developed in the initial transcripts.

Coding was done using ATLAS ti software. Before coding, all the interviews (i.e. the three interviews representing examples of polar types, the four that were coded later on and the remaining 16 interviews to make 24 in total) a brief definition of each code was provided to ensure consistency in the coding process. In the process of coding all interviews, each segment was checked again, and sometimes the choices were reconsidered by giving a segment multiple codes, completely removing a segment to a different code, renaming the codes or creating new codes. Codes that overlapped or had similar content were double-checked and a decision was made to either keep them separate or put them together.

As shown in Apendix Six, coding was informed by research questions. The fisrt focus area was the micro-level activities in the translation process. These were followed by identifying codes that helped to tease out the role and activities of institutions (non-human actors at the macro-level) in the translation process. Then I focused on how the focal actor managed perceptions in order to stabilise the network which was then followed by the history of remittances and remitting in the study setting.

STEP 3: Developing and refining categories

After identifying and refining the initial codes, the following coding level was axial coding (also known as creating categories) (Saldaña, 2015). This entailed making meaning of codes through categorising them into families based on a certain criteria. This phase necessitated a shift from looking at particular codes to exploring how the different codes could potentially be merged into categories to generate themes. Just like in the case of coding I did not get this process right the first time (Saldaña, 2015). It was an iterative process.

In my quest to refine the categories I created code groups or sub-categories first and then major codes (See apendix 6) to demostrate how themes eventually emerged, Suitable quotations that convey the key elements, activities and strategies that shape an emergent sociotechnical network were identified and selected in Chapter 5.

STEP 4: Developing Themes

A combination of constructs is exemplified by propositions (see Figure 6.3) as themes are a higher level of abstraction that emerge out of one or more categories (Gioia et al., 2013). Themes then create a theoretical framework (see Figure 6.3) which is the highest level of abstraction (Saldaña, 2015).

Developing the code book

The qualitative data was analysed using an inductive approach. Contrary to the deductive approach that starts with a code book with propositions, the inductive approach started with research questions, which meant that I started by generating many codes from the thick data collected in order to generate propositions. The initial codes and code groups (families) were generated on a computer-aided qualitative data analysis software program (CAQDAS), ATLAS. TI. As shown by my code book captured on Microsoft Excel, several codes generated categories or code groups which then led to themes. A comprehensive log of codes and categories of the identities of elements constituting the emergent network and how it was created were captured in the code book. Creating a code-book from data was an iterative and messy process. The code book for the study is in Appendix 6.

Presenting and interpreting the data

The final stage was presentation sand interpretation of the data which is done in Chapter 5 followed by a discussion of the findings in Chapter 6. The interpretations emerged from a comparison of the findings on sociotechnical network creation with the reviewed literature and the main theories used in the study. The insights on the augmentation of ANT with the Legitimacy Perspective brought to the fore the importance of context in which technological implementation happens.

A constant iteration between the theories and empirical data also proved to be a good strategy to explore potential themes. For instance, the essence of the themes "legitimacy acquisition strategies", "symbolic management activities" and "essence of positive reputation" was clearly reflected in the codes and then categories. A regular interface with the supervisor was equally helpful in providing alternative views to be considered for analysis.

Naming themes and reporting findings.

Seven main themes were defined in the study, namely:

a) Equal agency of human and non-human actors (e.g. technology, regulations, events) in network creation.
b) Relational and collective character of networks highlighted during translation process.
c) Political processes during the translation process.
d) Power issues at micro- and macro-levels during the translation process.

e) Tensions between actors during translation process.

f) Context is emergent and historically-shaped.

g) Role of social structures in legitimation activities

An effort to select extracts from the interviews that capture the essence of each theme was made during the presentation of findings with the commitment to provide a coherent, logical and interesting account. As stated, apart from interviews, other complementary methods of collecting empirical data included field observation sessions and review of related archival data. The next segment provides a brief description of how the data collected through these complementary mechanisms were analysed.

Thematic analyses of data from field observations and archival sources

Firstly, it was initially through observation of agent activities in enrolling users that levels of enrolment were observed. Through observation, I was also able to identify agent commitment while in other instances lack of it as an important variable in the enrolment of potential mobile remittance technology users. There was evidence of lack of active promotion of the service by one agent. This is a general dealer who did not promote the mobile remittance service during peak time to concentrate on selling grocery items and airtime recharge that did not require time and effort to interest potential users. Yet, at market introduction phase, the new service required agents to actively promote it to potential users.

In my observation of training sessions of agents and other channel partners, unique insights were elicited into 1) the objectives, interests, main activities and participants responsibilities of the mobile remittance project implementation, and 2) how the launch of the new remittance channel took place, and how the functionalities and policies of enrolling were introduced to other channel actors. Note-taking on the Researcher's Diary accompanied the observation.

Analysis of archival data (e.g. official documentation, media reports and website content) generated detailed contextual information regarding the mobile remittance project implementation and the policies and functionalities of the collaborative technology that supported transaction activity of the payment platform. Mains stream and social media documents regarding the emergent mobile payment services were reviewed and 19 documents were coded for analysis. The analysis of documents comprised reading the content of each document to gain an initial understanding or clarification on 1) the objectives, main activities

and participants responsibilities of the mobile remittance project implementation, and 2) the functionalities and policies adhered to in using the mobile remittance channel.

In sum, the whole process is inductive since it entails working from data through discovery of patterns and meanings and finally building theory about how a focal actor uses legitimating strategies to build a stable sociotechnical mobile money. Collected data was managed and analysed with the help of the qualitative software package ATLAS TI. This helped reduce time spent and manual work in coding and analysing.

4.10 Research quality assurance

Section 4.3.4 has defined the current study as an interpretive theoretically informed research. Hence, the need for criteria for evaluation appropriate to the nature of this study cannot be overemphasised. Equally, target audiences need to know that they can trust my account. Patton (1999, p. 1189) argues that "…issues of quality and credibility intersect with audience and intended purposes". Accordingly, since my role as an interpretive researcher was to report my interpretations of other people's interpretations, it was vital, in order to establish some credibility to the reader, that I provided an audit trail of how I arrived at the study results. Therefore, I need to foreground what I have used as criteria to ensure trustworthiness or rigour during the conduct of the study.

Although efforts have been made to guide interpretive researchers in judging the quality of qualitative research (e.g. Guba & Lincoln, 1982), Morse (2015) continually observes a tendency to import concepts such as objectivity, validity, reliability and generalisability into the valuation of non-positivistic research. These standards "tacitly articulate positivist philosophical assumptions" (Johnson et al., 2006, p.133). The quality of this study is evaluated based on Guba and Lincoln's (1982) criteria for determining trustworthiness in qualitative research. This criteria entail the study's credibility, transferability, dependability, and confirmability. Klein and Myers (1999) caution that these criteria are not employed in a mechanistic manner, but rather with judgement and discretion. For each of these elements in turn, I will explain what it requires, why it matters, and the strategies employed in this study to ensure that they are upheld.

In this study, criteria are defined as the standards to be maintained as appropriate in interpretive research while strategies are seen as the methods and techniques used in the study to diminish research quality threats (Whitemore et al., 2001).

Trustworthiness: Research trustworthiness and authenticity in qualitative studies equates to reliability and validity traditionally used by positivists (Morse, 2015).Among other things, trustworthiness seeks to establish confidence that an accurate interpretation of data is offered (Whitemore et al., 2001) with a view to ensure that the results of the study accurately portray the meanings and lived-experiences of the participants (Guba & Lincoln, 1982).

Different strategies to address these concerns were employed to gather high quality data for analysis. For instance, all interviews were audio-recorded with the express consent of the interviewees, which meant that the analyses were carried out on the basis of an honest representation of the voices from research informants. Equally, the selection of examples of "polar types" (Eisenhardt et al., 2016) ensured that all the different voices were fairly represented. Actor-Network Theory particularly allowed me to be methodological in reporting, in rich detail, data and the process of analysis that a reader could follow. However, due to practical concerns, other strategies such as member checking to ensure that informants' responses were fairly represented was not conducted.

Credibility: This is equated to internal validity in quantitative research - a measure to establish whether the research findings actually mirror reality (Creswell & Miller, 2000). This meant that my research practices had to be visible and auditable so that the target audiences could follow the research process. Consistent, with the aim of securing credibility in this study, I ensured that my account demonstrated factual accuracy by electronically recording interviews and complementing that with field notes. In addition, evidence for my case study is derived from multiple sources: interviews, direct observation of field activities and physical artefacts, as well as archival records. Electronic copies of data collection and analysis procedures and tools together provided a means of tracing the study in support of credibility.

The use of data from multiple sources allowed for triangulation – the cross-validation attained when dissimilar kinds and sources of data (semi-structured interviews, field site observations and archival data) are used (Golafshani, 2003). Triangulation added richness to the account as the converged data were then tested for consistency which enabled me to trace the emerging patterns and understand when and why there may be differences (Morse, 2015). Significantly, Sections 4.9 presented a detailed description of the procedures to collect and analyse data. This enhanced the rigour of the study by ensuring that the process followed was transparent.

Transferability: This refers to the ability to transfer original findings to another context or individuals (Creswell & Miller, 2000). In quantitative research, the criterion equates to external

validity of the data to allow for generalisability (Morse, 2015). The emphasis in this study was on gaining deep insights into the issues surrounding network creation, stability and legitimacy through detailed descriptions of the translation process at individual actor level with the aid of Actor-Network Theory complemented by the Legitimacy Perspective providing insights on the role and impact macro-environment on the process. The account, arguably, demonstrates that the researcher has 'been there', by projecting the vitality of life in the field (Walsham, 2005).

Walsham's (1995; 2005) argues that generalisations from single case studies can take the form of rich insights, concepts, theories, or specific implications. Therefore, detailed descriptions of the different phases of the network building process sought to provide opportunities for replication (Morse, 2015). Significantly, being an inductive study, the thick description contributes in the building of theory in this study.

Dependability (or reliability): To ensure dependability, the descriptive power provided by Actor-Network Theory allowed me to offer an audit trail through documenting all procedures, techniques and processes that are followed in sufficient detail as I followed the different actants to understand their role and responsibilities in the implementation of the mobile remittance project. I also utilised overlapping multiple data gathering techniques, namely: interviews, field observations and archival data, which allowed for triangulation. During structured field observations, I made field notes to capture the setting's physical evidence, participants' language, facial expressions, gestures, and context pictures and photographs. The notion of triangulation is insightful to look at how the use of multiple methods of data collection and theoretical lenses serve to enrich our understanding of a mobile remittance sociotechnical network creation. To ensure transparency at the data analysis stage, I used the ATLAS.TI qualitative application for coding and analysis of the data.

Confirmability: This element relates to the objectivity of the research (Guba & Lincoln, 1982). This is not an easy feat in interpretive qualitative research because the tradition assumes a subjective reality. Since I attempted to interpret meanings of reality with the respondents, my values may have impinged on data collection and interpretation, albeit subconsciously (Ponterotto, 2005). To mitigate this risk, I adopted bracketing of biases.

4.11 Conclusion

This chapter has introduced the research design and data collection and analysis methods to answer the research questions of the study. The chapter shows that the study adopted the use

of qualitative methods for data collection and analysis to investigate how the focal actor (a mobile remittance service provider) employed legitimation strategies to create a stable channel for cross-border remittances. Project team members, regulators, channel partners, agents and users who played different roles, at times with divergent interests, in the creation of the sociotechnical network were interviewed. To explain and contextualise some of the data collected through interviews, complementary qualitative methods for data collection such as structured field observations and archival data reviews were employed. The use of multiple methods for data collection not only availed an opportunity for triangulation and data saturation but also allowed for the presentation of a chronological narrative of the implementation and perceptions of how the collaborative technology was introduced into the cross-border remittance practices.

Equally significant in this chapter is my attempt to demonstrate an audit trail in the way that results were generated using different activities and strategies to secure research quality. This includes ensuring that research practices were transparent, different voices were taken into account, triangulation of methods and theories was possible to achieve rigor. This was in order to ensure that the study is trustworthy, credible, dependable and confirmable. The following chapter introduces the findings of the study in which theoretical resources from ANT and the Legitimacy Perspective were used to explore both 1) *How the mobile remittance network has been established*, 2) *What legitimation strategies were used and how they play a role during the different stages of translation in the network building process*, and, 3) *To explore the human actors' perceptions and interpretations of the emergent actor-network and how that informed the choice and application of legitimation strategies.*

CHAPTER 5

ANALYSIS OF RESEARCH FINDINGS

5.1 Introduction

The chapter considers the research questions and the findings of the study. The focal actor is the main actor driving the process of enlisting the other actors' support for project implementation. It is the first important source of data to establish its intent in building the mobile remittance channel while users and other stakeholders shed light on how they experienced and reacted to different strategies employed by the focal actor of the focal actor to enrol them on the emergent remittance platform (system). The data gathered are analysed and interpreted, consistent with the interpretive research methods. I used theoretical sampling and purposively selected and followed the focal actor first, as the prime motivator for the mobile remittance project. This enabled me to identify the first generation of actors who constitute the primary influence or impact on the central actor to a certain point of interest, based on the research objectives indicated in Chapter 1 of this study. Hence, the case boundary became the primary network that emerged after engaging the focal actor. Semi-structured interviews were conducted with twenty-four research participants. A template of questions asked are provided in this account as Appendix 3 and Appendix 4. In the ensuing segments, the three main research questions considered are:

1. How has the mobile remittance network been established?

2. What are the legitimation strategies used and how do they play a role during the different stages of translation in the network building process?

3. What were the human actors' perceptions and interpretations of the emergent actor-network and how did that inform the choice and application of legitimation strategies?

I consider these questions from three perspectives. These are the themes that emerged from the four phases of the translation process, the role of legitimation strategies in those stages of translation and the insights derived from augmenting the ANT with the Legitimacy perspective.

5.2 Case study findings

Chapter 2 focusing on the study setting in section 2.4 as well as Chapter 4 focusing on research methodology in section 4.4.2, provide a brief case description to frame this study. This is a typical case of a mobile remittances network that was purposively selected because it has

gained traction and scaled as a channel of choice in a remittance corridor hitherto dominated by banks, money transfer operators and informal cash transfer networks. Actor Network Theory was used as a primary lens to study trace the trajectory of this emergent mobile technology-based channel because of its renowned descriptive power. While referencing is traditionally avoided in the findings chapter in qualitative research, for this ANT-based account, I am going to need to reference key ideas as I define some concepts and vocabulary that may be unfamiliar.

The findings confirm that one of the limitations of using the ANT to trace the landscape of sociotechnical networks is that it poses challenges in locating, in any obvious manner, where they begin and where they end (Walsham, 2017; Creswell, 2011; Sarker et al., 2006; McLean & Hassard, 2004). Therefore, just like prior ANT-based studies by Heeks and Stanforth (2015) as well as Mpazanje et al. (2013), I relied on the research question to identify the actants and trace the enrolment of those that constitute the primary network (i.e. key actors that directly link with the focal actor).

The research findings and analysis show that the mobile remittance platform to mediate Zimbabwean migrants' cross border money transfers from South Africa to Zimbabwe was made up of actors located in the focal actor (organisation), business and regulatory terrain (in both South Africa and Zimbabwe) and consumers (Zimbabwean migrants as senders and recipients back home). These three "sub-cases" or "punctualised networks" emerged as the primary groups that shaped the incubation and implementation of the assemblage as a stable sociotechnical network of mobile remittances.

Punctualisation refers to simplification of a network by clustering and treating a heterogeneous network as an individual actor to reduce network complexity. Often, in a quest to simplify their investigation, analysts tend to treat networks as individual actors. ANT allows a discerning analyst to "unpack complexity by zooming in "or collapse complexity by zooming out" depending on the objectives (Sarker et al., 2006, p. 54). This finding, which will be explored in greater detail below, responds to the first and second research questions: (1) *How has the mobile remittance network been established?" (2) What are the legitimation strategies used and how do they play a role during the different stages of translation in the network building process?*

To respond to these broad questions, analysed data sought to establish:

a) The identity, roles and interest of actors in the emergent mobile remittance network.

b) Trace how the actors related with each other at the micro- and macro-levels of analysis.

c) Identify activities related to the translation process: *problematisation, interessement, enrolment* and *mobilisation*.

d) The role of social structures in the legitimation quest of the focal actor during the creation of a mobile remittance network.

e) The role of broad concepts like, *inter alia*, reputation, power, politics and trust at each of the four phases of the translation process.

Figure 5.1: Chronology of the mobile remittance network creation
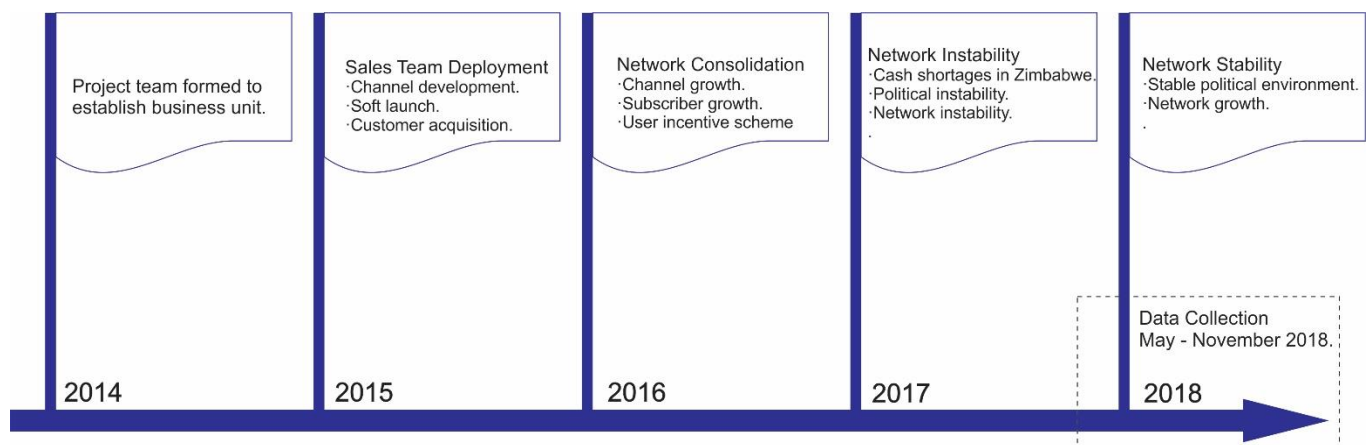
Emergent sub-cases

Undeniably, other researchers could have come up with their own accounts, depending on their choice of lens, perceptions as well as their study objectives. Because of its relational ontology, ANT was useful at the micro level of analysis in identifying human and non-human actors and tracing their relationships in forging a sociotechnical network of aligned interests.

Data collection started off by seeking to establish the focal actor's intent and activities in initiating the formation of the mobile remittance network. The focal actor then helped me to identify key actants that constitute its targeted allies in creating this network. Three sub cases or punctualised networks emerged and were examined with the aid of the translational process. Each of them is briefly presented in turn before their closer description and examination through the lens of ANT's four phases of translation.

Figure 5.2: Network nodes constituting the mobile remittance primary network
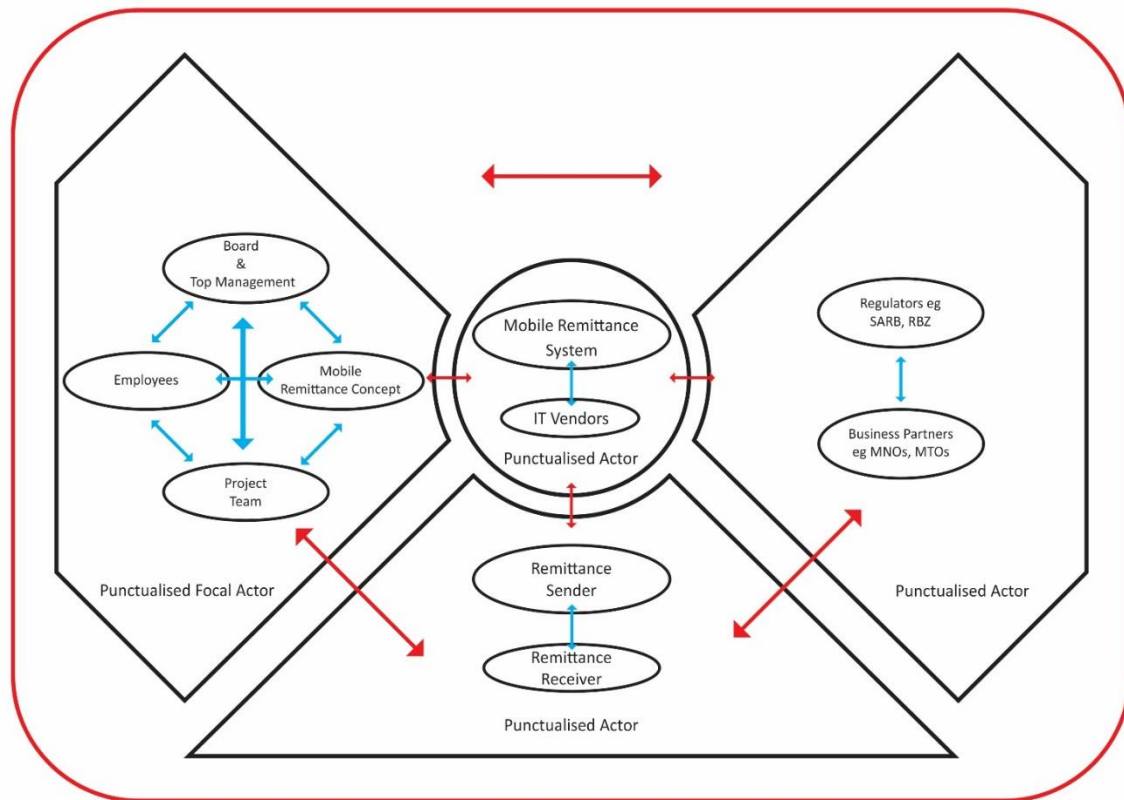
a) The organisation context subset

The first part of my account starts with identifying key actants within the focal actor. A mobile money operator in Zimbabwe is the focal actor that seeks to extend its technology to mediate cross-border remittances from South Africa to Zimbabwe. Consistent with the ANT's "follow the actor and their networks" mantra (Latour, 2005), actants approached within the focal actor (organisation) include, inter alia, Board of Directors, Management, employees, consultants and mobile money technology. The findings show that the creation of a cross-border mobile remittance unit was a product of a decision by the Board of Directors and top management to create an extra revenue stream to complement its successful implementation of the domestic mobile money business.

> *Yes, we were directed by the Board of Directors and top management after they had engaged consultants… experts in different functions to set up the Project Team. We engaged the services of a technology vendor and a team of employees with a diverse skill set primarily from our existing mobile money business. So, the entire Project*

Team was constituted and became very active at the conception stage of the project.
   Assistant Project Leader (APL).

They sought to establish another use case for the mobile money technology; that of facilitating cross-border transfers between the migrant host country, South Africa, and their home country, Zimbabwe. This is after they had identified an underserved but potentially profitable market segment that was a regular and significant source of income for local Zimbabweans. The Reserve Bank of Zimbabwe estimates that the country receives just under US$1 billion per month from remittances that use the formal channels. And, a similar volume is also estimated to make its way into the country through informal channels. Therefore, as representatives of the focal actor, the Board of Directors and top management sought to exploit this opportunity to formalise these remittance flows by establishing and availing a formal mobile remittance mechanism for Zimbabwean migrants in South Africa.

To create this network, the mobile money operator, which is hence forth referred to as the focal actor, introduced changes within the organisation to create a new actor network. As can be inferred, the Board of Directors and top management were the initial supporters of the emerging network and set up the Project Team led by a Project Leader (the CEO of this emergent network). Internal buy-in was essential hence the translation process started within. Accordingly, this study employed the moments of translation to trace strategies used to elicit support from the internal publics and establish what motivated those changes and the impact of this shift on the focal actor's endeavour to construct a mobile remittances network.

   b) The business and regulatory context

This was another punctualised network or group of actors that constituted the focal actor's primary network targeted for enrolment. This group comprised the regulators, potential channel partners, and competitors such as existing money transfer operators, banks, remittance service providers as well as the informal stakeholders like cross-border couriers (also known as Omalayisha), truck and bus drivers. Therefore, the translation process was also used to trace the changes and impact the creation of the mobile remittance sociotechnical network had on the business and regulatory sub-case.

   c) The consumer context

The four moments of translation were also used to trace the changes and impact on the users of the system. The primary approach adopted by the focal actors to acquire and maintain

legitimacy for the actor-network revolved around communication with target user groups. For instance, this included storytelling through scripts where the focus sought to project the mobile remittance channel as a reliable tool for the remitter to fulfil an obligation, a sacrifice, a show of love and an investment. The focal actor utilised "symbolic management" – the various actions taken to ensure legitimacy – as a communication strategy to be seen as legitimate even given its country of origin and the entrenched character of cash-based remittances.

As stated in Chapter 2, the focal actor was originally established as a unit of a mobile network operator (MNO) that initiated mobile financial services as a diversification strategy. The MNO had concluded a partnership with CellC, a South African MNO, to carry voice calls for Zimbabwean migrants with a special Call Home SIM that offered special rates. The core-users in the emergent mobile remittance unit were Call Home SIM card holders in South Africa. Therefore, service consumers comprise Call home subscribers, who are also registered as mobile remittance users in South Africa and remittance recipients in Zimbabwe.

5.3 Problematisation Phase

During the review of related literature in Chapter 3, it was stated that problematisation seeks to reformulate a solution to a problem situation in such a way that the focal actor catches the attention of target actants in a manner that they see their problem being addressed by the reformulated solution. This phase occurs at the project initiation stage (Cresswell et al., 2011) which is similar to the conception stage of a new venture (Fisher et al., 2016).

5.3.1 Problematisation for the organisational sub-case

My findings reveal that in the face of the imminent changes in the business environment, as customer acquisition volumes declined and as threats from new entrants into the mobile money service space grew, the Board of Directors and top management of the focal actor noticed profitability and long-term viability threats to the organisation's interests. This brought to the fore the urgency of significant changes to the old mobile money organisation in order to protect these interests. The suggested solution was to exploit an opportunity in an under-served market by extending the mobile money technology to migrants that predominantly use informal channels along the South Africa-to-Zimbabwe corridor. According to the Business Development Executive (BDE) interviewed:

*This was a no-brainer given that the South Africa to Zimbabwe remittance corridor is one of the largest in Sub-Saharan Africa and yet it is one of the most expensive hence dominated by informal players (**BDE**).*

This view introduced the salience of context. Equally, formulation of the project's strategy, objectives and motivation to solicit buy-in of internal role players was a function of commercial, macro-economic and social imperatives. This is summarised below:

*On the commercial front, we noticed glaring possibilities and successes registered by models like M-Pesa and EcoCash to mediate domestic remittances. We began to view financial content as a viable business and also an appealing growth area for the MNO. People were fairly familiar with the technology. But mobile money feeds off liquidity without which it dies, and we had to recoup our investment in GSM and distribution infrastructure. Remittances was a low hanging fruit! We had to exploit this use case to drive revenue fast (**BDE**).*

The Business Development Executive cited some of the reasons for venturing in international mobile remittances that the domestic mobile money growth had stagnated in Zimbabwe, there were new entrants in the domestic mobile money business that were clawing some market share from the operator and the need to expand financial inclusion to incorporate migrants and their remittance recipients. The initial problematisation phase demonstrates that sociotechnical network creation is a political process in which numerous strategies were developed. Actors were persuaded and resources negotiated in order to sponsor the emerging network.

In response to the observed opportunities and threats confronting the future prospects of the company, the Board of Directors and top management had to address this problem. The first step was to get buy-in of other salient stakeholders in the organisation and convince them of the need to address the problem.

*It was imperative to generate a consensus…construct common definitions and meanings within the organisation since the implementation of the project must be of relevance to the actors involved (**Board Member 1**).*

Communication as a tool for legitimation

The internal actors were familiar with the technology hence little effort was expended to convince then of the technology part of the system. The controlling actors focused on the

broader benefits of the new direction. Therefore, communication was key. Evidence suggests that during the problematisation phase, the communication is primarily diagnostic as it is focused on understanding who the relevant actors are and what their interests may be. This dovetails with the argumentation legitimation strategy, which entails explaining, convincing and motivating for the new direction in order to, not only create an obligatory passage point (OPP) but also establish the basis of desired legitimacy.

One of the first legitimation strategies taken by the controlling actors was to position the merging network as disruptive but at the same time compliant to the scripts, norms, values, rules and standards to garner legitimacy. Interviewees from the focal actor kept harping on the aspects of experience and technical capability. This is evidence that this was an attempt to convince and motivate both internal and external audiences that it had the requisite assets to execute the new initiative.

> *We first argued and convinced fellow employees … the internal customer … that we had invested heavily in equipment and distribution infrastructure and we needed to sweat these assets by adding cross-border remittances as a use case of the domestic mobile money technology that would add a revenue stream. **Ass. Project Leader (APL).***

This equates to "technical plausibility" (Fisher et al., 2016, p. 389), which refers to the desired perception that the organisation is equipped to address challenges associated with the project. This can also be discerned from the extract below:

> *Look, it was pretty clear! One, we had the technical arsenal, wide Telco network coverage, that could not be matched by competition. Two, we had the unmatched distribution infrastructure…26000 plus agents and still counting and, three, we had vast experience in the mobile money business that could only be matched by M-Pesa. We need to leverage these assets as we adapt to a changing competitive environment and position the business as the gateway to the digital economy (**Board Member 1**).*

Symbolic management strategy

The packaging of problematisation in the organisational setting also included positive persuasion through symbolic initiatives as well as compliance with what target allies would evaluate and regard as the norm. Norms emerge as a non-human actor in which interests of the legitimating group are inscribed. As part of the targeted communication approach, symbolic

actions that convey the Project Leader's academic and entrepreneurial credibility are aimed at bolstering the perception that the emergent network is in safe hands. This is evident in his portrayal of the Project Leader. He is portrayed to be a competent technical expert:

> *He is a heavy weight in the mobile money landscape. An MBA with vast practical experience, he served the* ████ *Group in various senior executive roles spanning over almost 20 years, including as CEO and Chief Marketing Officer within the Telco Operations. He has also worked across major African markets of influence that include Nigeria, Kenya, Zimbabwe and South Africa, among others. He is, without doubt, a seasoned business development expert (**APL**).*

These symbols of personal credibility, including symbols of personal competence and commitment do not only inspire confidence but also reassure potential allies that the focal actor's Project Team is able to endure adversity when faced with difficulties. Relatedly, symbolic actions are evident in the quest to leverage relationships with prestigious personalities to enhance legitimacy in the eyes of potential third parties. Findings show that during interviews, research participants representing the focal actor consistently dropped high profile names like that of its famous founder and equating the focal actor to the industry leader and success story in mobile money technology, M-Pesa. As the focal actor's Business Development Executive admitted: *"The founder has been a real asset in terms of credibility and utilising his name in the Board has helped us forge vital partnerships".*

Symbolic actions are also revealed by the focal actor moving its operational and financial headquarters for Africa to South Africa, a more stable neighbour. The entire Project Team was also stationed in South Africa to create the new unit. This was meant to shield the emergent network from continual economic turbulence characteristic of Zimbabwe, which could potentially create anxiety in the channel. As an emerging multi-national, the company's international headquarters has been moved to London as a way of enhancing its legitimacy as a global player.

The focal actor also utilised intimidation or coercion initiatives to ensure internal alignment on the new business trajectory. In an interview, the Business Development executive equated mobile remittance project to a juggernaut hence *If our people so much as try to impede this juggernaut, they will be run over! Simple!* With the unemployment rate in Zimbabwe estimated to be above 90%, the Business Development Executive

reasoned that any rational employee would not risk losing their employment. The operational users were therefore likely to cooperate.

After a systematic analysis of the situation, the team came up with a report whose primary recommendation was that the business needed to introduce and encourage formal remittances to the diaspora. This large migrant community primarily relied on informal channels to remit to their social network back home. The company Board of Directors made a resolution to introduce and deploy mobile money technology to harness migrant remittances into its domestic mobile money network. At the problematisation phase articulated in the strategy document, the focal actor, identified commercial, macro-economic and global benefits of introducing mobile money as an alternative to the existing formal and informal channels. The Sales Manager (SM) summarised the drivers for this initiative:

> *The South African-to-Zimbabwe corridor has a lot of money being channelled…remittances do not only fund the local wallet and benefit our business but formalises remittances and brings scarce foreign currency. Remember, ODA, FDI and export receipts are down, so, government is encouraging the Zimbabwean diaspora to channel remittances via formal channels. On our part,* ▉▉▉▉▉ ▉▉▉▉▉ *was our idea of extending the successful mobile money service to our subscribers across the border thus grow the mobile money wallet.* **Sales Manager (SM).**

The strategy would entail setting up a project team with varied technical and business development skills and experience with a view to enrol a large community of Zimbabwean migrants. This would involve, setting up a robust channel and encouraging the MNO's current base of active subscribers and prospective subscribers of other networks, on the telecommunications arm, to adopt the mobile remittance service by subscribing to the emergent mobile remittances network. That meant a telco-led mobile money model, which was going to be relatively similar to the domestic model. To achieve this, the strategy report recommended that the emergent mobile remittance unit would have to deploy a series of initiatives to entice migrants' adoption of the mobile remittance service. Executing these initiatives required various actors to participate in creating the consumer network. It is important to briefly identify primary actors that constituted the project team within the organisation.

5.3.1.1 Identification of the relevant actors in the organisational sub-set

Within the emergent mobile remittance network being assembled, the Board of Directors and top management took on the role of the speaker and the most visible actor representing the emerging network. Further, top management assumed the responsibility of identifying and enrolling other key actors to drive the formation of the network. A few employees (internal experts) from the old network (mobile money operator), who were highly knowledgeable of various aspects of the company's business processes, were handpicked to constitute the cross-border mobile remittance team. The Project Team's term of reference included crafting of the project budget, recruitment and selection of mobile remittance technology vendor, the appointment of consultants, selection of channel partners and consumer acquisition.

The role of information technology (IT) is central to the stability of the network. Accordingly, attempts were made to enrol the mobile money system vendor (representing envisioned process-enabling systems) through a competitive process entailing the issuance of requests for proposals (RFPs) and awarding of contract. Thus, the focal actor's Project Team viewed IT as an actor in its own right with potential to pose resistance because of its interests and not as a passive element that, when plugged in, would automatically enable new functionality of facilitating cross-border remittance processes. Therefore, the designing of this system was to incorporate the user input to enhance appropriation.

5.3.1.2 Definition of the OPP in the organisational sub-case

The next step in the problematisation stage was to define the Obligatory Passage Point (OPP). Top management representing the focal actor explained the problem of informal remittances, identified other relevant stakeholders within the organisation such as management, employees, internal experts, consultants and IT vendors and highlighted how the problem affects them. This was followed by top management outlining broad strategies for addressing the problem at hand. This approach confirms how the focal actor established an obligatory passage point (OPP) in a way so as to render itself indispensable. Broadly, the OPP refers to a situation or process that is specified by the focal actor such that all the relevant actors can achieve a shared focus in successfully pursuing the interests attributed to them (Sarker et al., 2006). The definition of OPP was accomplished by implying the following in the communications with some of the stakeholders identified in the organisational setting:

Table 5.1: OPP for the focal actor punctualised network

Target actors	Communicated benefits	Evidence from data
Top management	If top management wanted to improve the overall growth and financial performance of the mobile money strategic business unit, they had to pass through the OPP.	*Top management had to appreciate that international remittance was the next best opportunity for mobile money growth. We needed a new revenue stream…a new source of liquidity to support the domestic wallet and sustain the business.* (**APL**).
Employees	If employees wanted to retain their long-term financial well-being, they had to pass through the OPP.	*Given our precarious employment situation in Zimbabwe, this was an assured growth area for business survival and growth. That means extra revenue stream and in turn secure jobs* (**BDE**).
Internal experts	If the internal experts wanted to be viewed as key actors in the mobile remittance initiative, enjoy financial gain, acquire valuable experience, and receive recognition, contribute to socio-economic well-being of marginalised communities, they had to pass through the OPP	*We had a group of experts constituting the Project Team. They were eager to make a difference …financial inclusion. They would acquire more expertise in a different setting and earn expatriate salaries at the same time, they were motivated* (**APL**).
Consultants and IT vendors	If consultants and IT vendors wanted to enhance their reputation in the digital payments space, enjoy financial success, and, most importantly, be retained by the mobile money operator, they had to pass through the OPP	*We had our experienced and trusted vendor Mahindra Comviva from India. We insisted on a simple, secure and convenient system for the users…(APL).*

Passing through the OPP would, for instance, allow employees to avoid the obstacles (e.g., threat of unemployment due to competition and loss of market share and related revenues for their employer) that they would face in achieving their own interests (e.g., job security, professional success). However, in passing through the OPP, they would have to experience some inconvenience, deal with some tensions and conflicts associated with the implementation, subject themselves to the uncertainties and stress associated with setting up a mobile remittance sociotechnical network, deviate from their current and familiar paths. Similarly, the internal experts would have to put in extra hours to understand new partners, learn new regulations, grasp unknown methodologies, learn and design relevant business processes, and adopt and adapt new tools. IT vendors would have to invest in mastering new technologies and in adapting their existing technologies/techniques as per the mobile remittance technology requirements. They would also need to work under tight deadlines and possibly forego alternate and potentially fewer complex opportunities to serve other clients in the marketplace.

5.3.2 Problematisation in the business and regulatory context

The business setting sub-case is a significant stakeholder that emerged from data during the network creation efforts orchestrated by the focal actor. This target group includes, among other role players such as policy makers, regulators, suppliers, channel partners and competitors. As one of the respondents summarised their role as;

> *The regulators are very significant as they gave us guidelines on how to execute the project. MNOs and distributors provided the infrastructure to access users. Agents are the face of, or mobile remittance unit and we are keen that they get their role right. Finally, users make it happen because they are our end users (**BDE**).*

The focal actor largely sought to target business partners and regulators; MNOs, Money Transfer Operators; mobile money technology, retailers, marketers and a range of others that may be relevant and interested in the opportunities and anti-poverty potential of mobile remittances. Therefore, in problematising to attract stakeholders in this sub-case, the focal actor communicated the benefits of joining the emergent network to each target ally.

Table 5.2: **Summary of problematisation for the Business and Regulatory sub-network**

Target Actor	Communicated benefits	Evidence from data
Policy makers	Formalisation of remittances would complement government in encouraging the diaspora community to channel funds via formal channels thereby formalising remittances which is one of the major sources of foreign currency	*Remittance transfer was a source of foreign currency for Zimbabwe which was starved of FDI and ODA. However, no one knew how much was coming into the country ... no one had records of senders or accurate estimates of remittance receipts. Informal systems use the grey channels. In contrast, mobile remittances are transparent and auditable (**Project Leader**).*
Regulators	Mobile remittance system is secure and would enhance the integrity of the financial system.	*Anti-money laundering (AML) and Countering the financing of terrorism (CFT) requirements are important in safeguarding the integrity of the financial sector.*
Channel partners	Mobile remittances would expand the market for business partners such as MNOs, MTOs and retail outlets. That meant an additional revenue stream.	*We went the partnership route. Though it meant limited control over the channel to ensure consistent customer experience, this strategy allowed us a quicker entry and quicker access to resources such as distribution networks of our partners like Flash Mobile Vending. In turn they also*

			*got to earn a commission for enrolling service users and facilitating transactions (**BDE**).*

The broad benefit recorded in the findings was to be part of the revolution in the payments space in which people are shifting from traditional channels to mobile technology, which is shaping how people send and receive international remittances. For instance, target channel partners were offered a commercial opportunity to earn a commission or diversify their revenue streams by growing their product portfolio to include mobile money. Traditional Money Transfer Operators (MTOs) and Remittance service providers were convinced that by partnering the focal actors they would enhance efficiencies in remittance transfers, which would help to reduce costs and speed in transfer. This would stimulate an increase in remittance frequency and more revenue for them.

The focal actor argued and convinced policy makers and regulators that mobile money can help to manage the risks of money laundering and the financing of terrorism (AML/CFT). Additionally, this emergent formal channel would also facilitate sender or receiver identification and traceability, which is useful for planning and tax collection. These benefits are impossible through the informal remittance market. This is summarised below:

> *So, we anticipated that cross-border mobile remittance would make it easy for us the regulators and relevant government organs to collect transaction taxes, allow traceability for the remittances and transactors to curb the twin evils of money laundering and financing of terrorism. This system is also auditable and creates a database of transactions and identities of transactors. We could not afford to reject this system as it was addressing a host of our concerns. **Regulator Representative (RBZ)**.*

Anticipating regulatory interests in formal remittances, the focal actor also demonstrated the mobile money technology would increase taxable income for receivers and frequency of transfers of foreign currency particularly in a context like Zimbabwe where Foreign Direct Investment (FDI) and Official Development Assistance (ODA) had declined. Problematising to the Reserve Bank of Zimbabwe was easy because the financial regulator had been spearheading the mobilising, coordinating and driving awareness and education campaigns targeted at policy makers and stakeholders in the financial services industry about the Zimbabwe National Financial Inclusion Strategy 2016-2020.

Once the focal actor was able to interest the regulators in the value of mobile money as a vehicle to formalise remittances, the next significant actor targeted for on-boarding was the distribution network and primarily the agent. Findings indicate that mobile remittance agents are a crucial asset for emergent network because they are primarily responsible for registering customer accounts and conducting customer due diligence for the focal actor. Mobile money agents also principally act as cash-in/cash-out points for mobile money consumers, a role that sometimes earns them the moniker of 'human ATMs' (Maurer et al., 2018).

> *With traditional banking system, the place of clearance and settlement functions are performed by electronic and automated infrastructures. Yet with mobile money, agents are, in fact, referred to as 'infrastructure' in some discussions as they provide retail infrastructure, distribution infrastructure, and provide settlement services. They are essentially bridging to cash and channels for financial inclusion (**BDE**).*

The findings indicate pertinent issues related to the provision of agent networks and their supervision include finding a balance between sufficiently spread distribution networks, safeguarding the eligibility of these agents and maintaining high quality agents through regular monitoring and training. While some of the criteria for agent selection were dictated by regulation, the focal actor sought to control the quality of the mobile remittance agents by establishing eligibility requirements and selection criteria of its own. The agent had to be accessible to the targeted service consumers, have financial capacity, a good reputation in the community and basic literacy level for themselves as well as their transactors. Largely, the regulator allowed the focal actor to set their own measures and standards for the selection of third parties. *However, regulation required remittance service providers to notify the central bank of all third parties. **Risk and Compliance Manager (RCM).***

While problematising to target agents in Zimbabwe was made easy by the experience of the agents with the domestic version of mobile money, it was replete with challenges in South Africa where mobile money had failed to take off in spite of extensive effort and investment. These challenges are illustrated in the interview extracts below:

> *We initially tried to replicate the agent model that we had fashioned in Zimbabwe to recruit agents. We changed tack when we learnt that due to the prevalence of crime in the South African setting no one wanted to deal in cash. Dealing in cash as agents do in Zimbabwe is suicidal here. Boom, reality check! So, our agent recruitment had*

*to factor in context-related risk in the new model. We went partnerships! Likewise, branding initiatives were impeded! (**BDE**).*

*We relied on the existing retailers…chain stores…as the agent network backbone. These agents have pre-existing relationships with potential clients for mobile money because they already play in the payments space. They are located in safe places and customers feel safe transacting there. We retain a residual independent agent network which provides own security and know the risks (**Sales Exec. 2**).*

5.3.2.1 Identification of the relevant actors in the business and regulatory context

Findings indicate that, because the mobile remittance product is complex, the focal actor needed many partners on board. The most visible target partners were regulators, business partners, agents and users. The regulators are particularly significant as they give guidelines on how to execute the product while business partners provide the base for the product in a foreign setting and credibility in the market. Agents are the face of the focal actor in the market and thus the desire to ensure that they are well-resourced to discharge their role. And, users are the consumers of the product while technology links different actants to complete the ecosystem.

The channel partners in the business setting sub-case include networks financial services regulators (e.g. South African Reserve Bank (SARB) and Reserve Bank of Zimbabwe (RBZ), technology partners (e.g. Mahindra Comviva), mobile network operators (CellC, MTN, Vodacom and Telcom), competitors (e.g. money transfer operators such as MoneyGram and Western Union and remittance service providers like World Remit, Hello Paisa, Mukuru.com, Mama Money) and retail chains (such as Pep and Pep Store, Checkers, Shoprite and Pick 'n Pay) as well as the informal channel competitors such cross-border couriers (also known as Omalayisha), truck and bus drivers as the object of analysis. After the identification definition of relevant networks' representatives, the specific role, functions of each actor approached and the rules and norms that underpin the proper functioning of the network was spelled out.

In line with ANT 's prescripts, Non-human actors were identified for problematisation by ensuring that what they stood for was consistent with the emergent network. Standards, procedures and policies were such examples. For instance, in line with international standards, regulators expected the emerging network processes and procedures conformed with set of Anti Money Laundering and Counter Financing of Terrorism (AML/CFT) Standards. These international standards, which clearly stem from the broad institutional environment, are

designed to ensure that cases of money laundering, financing of terrorism and other criminal activities are deterred and or detected to protect the integrity of the global financial services system. This is summarised by the Reserve Bank of Zimbabwe representative (RBZ):

*AML/CFT requirements are important in safeguarding the integrity of the financial sector, by ensuring that criminals do not abuse and misuse financial services for purposes of cleaning-up illicitly acquired funds (**RBZ**).*

The representatives of the focal actor also demonstrate the importance of context in packaging problematisation. Findings indicate that contextual considerations introduce complexity during problematisation. While it was easy to problematise to the Zimbabwean regulator and potential business partner, it was difficult to convince the South African stakeholders because the history of mobile money was different in the two settings. Domestic mobile money rapidly gained traction in Zimbabwe, yet it failed twice in South Africa

*We primarily reached out to role actors on the South African side because they may not have had the experience of a successful deployment of mobile money on the domestic setting. We argued for the service very hard because they were sceptical (**Sales Exec 2**).*

5.3.2.2 Definition of the Obligatory Passage Point (OPP)

Like in the sub-case of the organisation setting, the definition of OPP in the business and regulatory setting was realised by suggesting the following in the communications with some of the stakeholders identified in the business setting:

Table 5.3: **OPP for the Business and regulatory sub-network**

Target Actors	Communicated benefits	Evidence from data
Policy maker	If policy makers wanted formal remittances that would increase foreign currency receipts and related transaction taxes, they had to pass through the OPP which is the mobile remittance focal actor.	*Research figures released by FNB when we launched our SA-Zim remittance service in 2013 indicated that as much as ZAR 6.7 million is remitted back home every year by Zimbabweans in South Africa through official channels. A similar figure is suspected to be remitted using informal channels hence is not recorded (**SM**).*
Regulators	If regulators wanted to counter financing of terrorism and enhance anti-money laundering capabilities and trace remittance transactions, and transactors, they had to pass	*Last, but by no means the least, we wanted to play a part in ensuring that we contribute to global efforts to curb money laundering scourge and the financing of terrorism by adhering to CFT and AML regulations (**BDE**).*

	through the OPP which is the mobile remittance focal actor.	
Channel partners (e.g. MNOs)	If MTN, CellC, Telcom and Vodacom) wanted to enjoy financial gain, and curtail churn of Zimbabwean migrants who are their subscribers, they all had pass through the OPP	*MNOs enjoy financial gain through commissions or fees that we pay them, and Zimbabwean migrants who are their subscribers are unlikely to easily switch to competition once they have opened mobile money accounts (**APL**).*
Money Transfer Operators (MTOs)	If traditional money transfer operators (e.g. Western Union and MoneyGram) and news ones like World Remit, Mukuru.com, Hello Paisa and Mama Money desired efficiency and cost effectiveness of their services, access over 26000 agents of the focal actor in the last mile to its 9 million subscribers, they all had to go through the OPP.	*However, they lacked a robust route to market infrastructure that we had invested in back home. We controlled the last mile to 9 million potential remittance recipients. We told them that we had the channel in Zimbabwe to disburse the remittances they collect from Zimbabwean migrants in South Africa (**APL**)*
IT Vendors	If consultants and IT vendors like Mahindra Comviva and their hardware and software wanted to enhance their reputation in the remittance world market while enjoying financial success, and, most importantly, be retained by the focal actor, they had to pass through the OPP.	*We had our experienced and trusted vendor Mahindra Comviva from India that we paid licence fees. We insisted on a simple, secure and convenient system for the users…remember we are dealing largely with the bottom of the pyramid segment and remember we are talking about money. The integrity of the system as well as its simplicity is of utmost importance (**APL**)*

Just like in the organisational sub-case, in passing through the OPP, these stakeholders would have to experience some inconvenience (e.g., having to subject themselves to the uncertainties and stress associated with drafting and negotiating various legal contracts, deviation from their current and familiar business paths. Similarly, the internal experts would have to put in extra hours to understand new partners, learn new regulations, grasp unknown methodologies, learn and design relevant business processes, and adopt and adapt new tools, and be required to alienate many formal and informal partners whose business they would have to appropriate as part of the initiative.

In sum, Table 5.3 demonstrates that problematisation helped uncover different business and regulatory stakeholders' perceived benefits that can accrue to them through aligning their interests with that of the focal actor during the formation of the mobile remittance network. The benefits are grouped into four: (1) macro-economic benefits from taxes and increase in

foreign currency for policy makers, (2) risk management through user identification and traceability for regulators, (3) customer retention and diversification of revenue streams from mobile remittances for MNOs, and 4) enhanced efficiencies and cost effectiveness for MTOs.

5.3.3 Problematisation in the consumer sub-case

The consumer or user sub-case comprises remitters or senders and recipients who are both interested and actively involved in the configuration of this mobile remittance network. Contrary to conventional logic that remittance channel choice is the preserve of the sender, the study findings suggest that remittance senders in the host country and their recipients in the home country mutually determine channel choice.

> *My wife introduced me to* ▮▮▮▮▮*, which she advised was introduced to her by these ambassadors. For me, trust is an important condition when it comes to the choice of channel for sending remittances home (**Service User 4**).*

> *My wife asked me to try registering this side so that in case of emergency, I could use the service to send them money from South Africa. I know very little about it and I have not had time to look for the agents to explain how it works. I know just a little bit about this facility. I hate to take a risk with my little money that I send home. When I came to South Africa, there was no such service back home (**Service User 7**)*

> *My mom pressured me to buy* ▮▮▮▮ *Call Home cards in order to open a mobile money account and use the channel to send her monthly allowance (**Service User 5**).*

This could be attributed to the strategy that the focal actor adopts to leverage the prior enrolment of the receiver on the domestic mobile money service to attract the sender onto the similar platform of transferring money across the border. Therefore, findings indicate that the focal actor problematised to both senders and receivers.

> *They extensively advertised the service to the recipients and senders to drive demand. Border posts such as the Beit Bridge border were awash with brand ambassadors giving away fliers and selling Call Home SIM cards to driving awareness and promote registration by migrants and uptake of the service (**Service User 5**).*

Findings indicate that problematisation in the consumer sub-case focused on encouraging MNO subscribers using its Call Home SIM Card to register for its mobile remittance service in South Africa. Equally, prospective subscribers of other networks we also encouraged to buy

the SIM card and register on the mobile remittance platform. To adopt and actively use its mobile remittance service, the focal actor required the interests of the consumer of the service to be aligned closely to the OPP of the focal actor. Thus, a series of initiatives were deployed since 2015 to entice potential users to adopt the mobile remittance service. These included targeting travellers at ports of entry and incentivising agents and recipients who use the channel. The focal actor target registrations were 50% penetration into the more than 3 million Zimbabwean migrant population in South Africa. Attaining this target required various actors to participate in creating the consumer network. The primary actor identified will be discussed in the following section.

5.3.3.1 Identification of relevant actors in the consumer context

The focal actor required agents to sign up current subscribers that use the focal actor's Call Home SIM Card and as well as prospective subscribers. The subscribers are registered and signed up by the agents and Brand Promoters upon producing a valid identity document and an active SIM Card. This is a regulatory Know Your Customer (KYC) requirement meant to curtail incidences of criminality, such as the global scourge of money laundering and to counter the financing of terrorism thus protect and maintaining the integrity of the platform. Among the Zimbabwean migrants, who are the target subscribers, were documented and undocumented migrants of diverse economic and educational background operating in different localities in South Africa. Thus, were both human and non-human actors in this sub-case. For instance, potential and existing subscribers, Brand ambassadors, agents (human) as well as mobile phone handset, SIM Card, registration phone, know your customers regulations (non-human).

The focal actor, a unit of a multinational company, realised that the implementation of the mobile remittance system would connect with a new source of liquidity to fund the mobile money wallet and cement its dominance in the digital payments space that offers convenience, speed, confidentiality, security and control to financially excluded consumer segments.

> *We had almost reached saturation point in trying to grow P2P mobile money in Zimbabwe where we control 97 to 98 percent market share! We had to explore other growth opportunities … we needed a fresh source of liquidity to fund the local wallet. We resolved to explore other use cases like merchant and bill payments, banking services, micro-insurance and of course international remittances (**APL**).*

The international mobile remittance unit would position it to reward loyal mobile network subscribers resident in South Africa with loyalty products and services that were previously inaccessible to this group of subscribers. The emergence of the remittance transfer service also enabled the focal actor to market value-added services to the migrant community that it did not hitherto have in its products and services portfolio such as micro insurance.

5.3.3.2 Defining the Obligatory Passage Point (OPP)

The consumer had to have interests that are closely aligned to the OPP of the focal actor, which was to encourage adoption and active usage of the mobile payment service. This meant that the focal actor had to recruit actors to act as its spokespersons or representatives to interest the target group of consumers to adopt and use the mobile remittance service. The unique value proposition touted by the focal actor was that mobile remittances would enhance consumer convenience, speed of remittances, security of their money, sender control from the first mile up to the period that money drops into the recipient's mobile wallet, the confidentiality of remittances, and the cost effectiveness of using the channel.

Just like in the other sub-cases that discussed above, actants in the consumer network could choose to abide by their assigned roles in the emergent network, to adopt the system, or they could rebel against the role and challenge the focal actor to alter the role they play in the network. Choosing to challenge their intended role would either result in them being excluded from the network or would persuade the focal actor to adjust the network to accommodate them. Accordingly, passing through the OPP was straightforward for most users, who perfectly aligned their desires to those of the focal actor. The major impediment to the focal actor's endeavour were summarised by the observation made by some participants:

> *Initially we encountered low levels of customer trust and the established nature of cash-based transfers as the biggest obstacles to on-boarding consumers onto the mobile money platform. We adjusted our strategy. We then also targeted receivers with our messaging and cash incentives. They became our salesmen! (**Sales Exec. 2**).*

When the Business Development Executive was recruiting users of the service, she enticed them with financial incentives for the recipient, in addition to the obvious benefits such as convenience, speed, confidentiality, control, security and cost. I witnessed this during a field observation of an agent training session.

Box 5.1: Observation of an agent training session at a Johannesburg Lodge

Agent:	*Sir what do you think the market reaction would be to cash shortages in Zimbabwe*
BDE:	*We must allay their fears and concerns guys. We cannot afford to reverse the gains made in formalising these transfers. We will maintain our market share and you guys earn a commission!*
Agent:	*Yes, I hear you but what would make one stick around with us instead of going back to the minibus courier.*
BDE:	*You will tell them about the 5% incentive bonuses that is being offered by the Reserve Bank of Zimbabwe for transfers that use our channel. We also give them an additional two percent and another 3 percent to the agent. So, all in all a whopping 10% incentive bonus!*
Agent:	*Yes, but that benefits the last mile players! How about us? (He laughs).*
BDE:	*Once the recipient is happy with the channel, the sender will use it more frequently and you will have a steady flow of consumers ... and a steady flow of commission my brother!*

5.4 Summary of problematisation initiatives in the case study

The analysis of the case has revealed that the primary objective in the problematisation phase is for the focal actor to define the identities and interests of the target allies with a view to make them consistent and aligned with its own interests thus rendering itself indispensable by outlining the Obligatory Passage Point (OPP).

5.4.1 Micro (local) level of analysis

To establish itself as the OPP, the focal actor engaged its target allies, in the three identified punctualised networks, through different communication approaches to convince them that their interest could only be served if they aligned with those of the focal actor. It used meetings, trainings, incentives, moral suasion and articulating service benefits as problematisation strategies to persuade its target actants to align their interest with its own. Equally, the focal actor sought to design technology and processes that helps it to address the needs of its target allies. Hence, the interests of the target allies (regulators, users, partners and employees) were inscribed in the technology to aid and constrain behaviour. Research findings also show that during the problematisation phase, the communication is primarily diagnostic as it is focused on understanding who the relevant actors are and what their interests may be and convincing them to align their interests with those of the focal actor.

5.4.2 Legitimation strategies used

This study reveals that mobile remittance technologies do incorporate context of use, which is to be found in the designer's expectations of the settings in which these technologies will be used. Context, in this case, can be organisational, national and international. When the mobile remittance technology vendor successfully matched the technology to the user context, the design reality gap was averted while in cases where there was a significant mismatch the gap resulted in failure of enrolment. In view of the heterogeneity of the actor-network's target potential allies, the complexity of operating settings, and the overlapping nature of these generic legitimation strategies, the focal actor adopted "hybridisation" of strategies to match the technology to the context.

For example, while the focal actor mainly utilised the argumentation and selection strategies to identify and convince policy makers that a faster formal channel of remittances would not only reduce poverty and provide a way to meet this Millennium Development Goal but also serve as an alternative source of foreign currency in light of the dwindling FDI and ODA inflows into Zimbabwe.

> *Our initial understanding of context was of the rural poor remittance recipient in Zimbabwe lacking access to safe, convenient, fast and formal channels, yet they received regular remittances from their migrant relatives in South Africa. We put it to them that the channel was the best conduit to broaden access to livelihood opportunities, particularly women (**BDE**).*

Evidently, the context of mobile remittances channel in the early stage was being framed in terms of, what one may term, macro actor categories of the migrant population, rural poor, livelihood opportunities and a site for care and sacrifice mediated through novel mobile technologies. It then evolved into a payment service when even those migrants who used banks and formal money transfers operators like MoneyGram betrayed those networks to show interest in the emerging network. Equally the focal actor adopted argumentation and selection to convince potential channel partners that their commercial interests were best served through aligning with those of the focal actor at the problematisation stage.

There is also evidence of adaptation to regulatory requirements (targeted at industry regulators) to reduce the liability of newness and garner legitimacy in the eyes of the regulators. While the focal actor largely complies or adapts with existing rules of the game in the remittance space

to avoid creating instability and resistance, there are instances where adaptation is used together with manipulation. This may sound paradoxical. For instance, while it was complying with the regulations around Anti-money laundering (AML) and countering financing of terrorism (CFT) it was also manipulating the regulators through lobbying to convince them to ease Know Your Customer (KYC) regulations to get on board many migrants onto the emergent formal platform and enhance financial inclusion.

The focal actor deliberated with potential network allies such as the Project Team members, regulators and users to motivate them to join and support the network. Most of the target partners in South Africa had a fuzzy understanding of mobile money after it failed to take off in South Africa, which could be partly attributed to the complexity of the context which is one of the themes merging from the study. Thus, in order to conclude strategic partnerships with channel members, that included competitors, the focal actor had to justify and convince them to find a common ground and reach consensus or agree on compromise solutions.

One of the compromises was that existing money transfer operators like MoneyGram, Western Union, World Remit, Hello Paisa, Mukuru and others less common would integrate their systems in order to utilise its infrastructure to disburse remittances through its Zimbabwe mobile money network in which it has 97% market share. Argumentation was particularly effective in the introductory (problematisation) stage of this new innovative venture since it was used to help other actants to shift their behaviour. The basis from which the new actor-network could derive legitimacy was not be necessarily established, which called upon the focal actor to be creative to pioneer, discuss, explain and motivate for the new offering in order to, establish itself as the obligatory passage point (OPP) thus create a basis of legitimacy for those that come after it.

In addition to argumentation, the focal actor also adopted selection legitimation strategies to identify actors that make up its primary network. Selection criteria for target allies was primarily based on the reputation, accessibility and capacity of the target partner. The focal actor preferred partners with a wide distribution infrastructure, as a market entry strategy, because they would facilitate entry and limit chances of non-compliance with existing legislation and industry regulations, standards and best practices after it was denied the ADLA Licence at initiation. Selection strategy was also evident in the recruitment of formal and informal general dealers as the agent was expected to possess minimum qualifications of at least a tertiary qualification in order to appreciate the requirements of the business because it

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is a financial service that is regulated and would require constant training and reading of new regulations and standards to manage risk.

Research finding show that over the past 4 years, the focal actor has managed to sign up 568 000 from a target of 1 million subscribers as reported by the Business Development Executive. The success in aligning the OPP can be attributed to regulatory support, key partnerships with reputable retailers, as agents and MTOs and RSPs that have stabilised the mobile remittances network. Critically, negotiations and political manoeuvring are evident in the creation of a sociotechnical network through examining and describing actor interactions at the micro level and the influence of institutions in legitimating the emergent network macro levels of analysis. Equally significant is the finding that far from a straightforward initiative, the creation and implementation of a mobile remittance network can turn out to be messy and complex. As a consequence, problematisation is packaged differently for different stakeholders and it is not a once off event but a continuous process of negotiation and enrolment of actors. How it is packaged is contingent upon the actants to be problematised.

5.5 Interessement Phase

Following the establishment of the OPP, the focal actor moved to the interessement phase where intense outward communication was employed to establish its central role in the initiative and in defining interests of various target allies as well as determining their future. The focal actor deployed various interessement strategies to persuade relevant actors to align their interests to those of the focal actor.

5.5.1 Interessement strategies in the organisational sub-case

Prior ANT-based studies indicate that during this phase, actors that are identified during the problematisation phase are exposed to the different interessement strategies with the aim of enrolling them to enhance the stability of the network. Through these strategies, the focal actor attempts to negotiate, convince and co-opt each of these potential allies to accept the identity and role that it has been imposed on them in pursuit of aligning individual interests to the OPP (Callon, 1986). Therefore, interessement entails a political process in which the focal actor develops strategies to persuade target actors and negotiate organisational resources in order to sponsor and promote the emerging network. This includes negotiating agreement of the benefits to each actor at an individual level and at a collective level. To this end, consensus has to be reached on what each actor gets in order to enter into a partnership.

Just like in the problematisation phase, interessement was packaged differently for different actors. This is consistent with previous ANT-based studies arguing that an actor network projects a heterogeneous environment that recognises that target allies need not adhere to the same interessement strategy since they have different interests (Yusuf et al., 2016). The findings show that politics and power issues at the micro and macro levels invariably generate tension between actors involved in the processes of negotiation during this phase.

5.5.2 Interessement strategies deployed for different actants

As the focal actor packaged interessement differently as it engaged with target allies in the organisational setting, business and regulatory setting as well as the consumer setting to align their interests to its own, the findings show that communication during this phase was largely directed toward convincing the actors and stalling different competing messages from other actors in the network who may be initiating parallel interessement processes. Communicating exclusively with relevant actors' representatives was found to have great potential pitfalls because the relationships between an actor and its representative is always subject to change. The following sections attempt to capture the different negotiation and political strategies deployed by the focal actor to enrol actants in each of the emergent sub-cases.

5.5.3 Interessement strategies in the organisational sub-set

In the organisational setting, translation involved convincing the internal actors to agree on the interests defined for them by the mobile money operator's Board of Directors and top management. Accordingly, the first round of negotiations took place between the Board of Directors, top management and the concept paper on mobile remittances. While the concept, which is a salient non-human actor, was not initially recognised as an actor in the problematisation stage, as interessement started, the focal actor realised that the concept of mobile remittances (including commercial, macro-economic, regulatory and user benefits associated with it) was critical to the successful formation of the emergent network. It was particularly useful in defining the objectives on the project, the network's primary actors and the implementation matrix. That meant a high degree of alignment was required between the mobile remittances concept and the salient actors involved for them to obtain the benefits of the initiative and network stability.

Project leader was mandated to be the envoy in charge of implementation on behalf of the focal actor. The Project leader was thus authorised to support the Project Team in a full-time basis

in matters related to the implementation hence his appointment as the CEO of the mobile remittance Strategic Business Unit. The core of the interessement effort, in this sub-case, was the promise of the financial benefits to other networks (e.g., old mobile money provider) aligned to the mobile remittance concept, business and brand growth, expatriate employment opportunities to experts in the old network.

During a period of 6 months (from June to December 2015) the mobile remittance model was introduced to key actors (e.g. management of different functional areas, staff, and consultants) via seminars. The Project Leader and his Assistant utilised such platforms to communicate the aims, benefits and entailing activities of the network creation and implementation process. Specifically, the mechanics of creating the network was discussed as an essential topic in the agenda of meetings given identified complexities.

*We had to solicit their feedback as we set up this network. Feedback platforms included meetings, seminars and workshops that we held regularly particularly at the initial stages of the project and when we went live. For instance, once had gone live, we received feedback (from managers and staff) and shared experiences during meetings…so…that provided opportunities to continue improving the model (**APL**).*

Such aspects as co-ordination activities and strategies to prevent potential breakdowns during the creation and implementation of the network were discussed. Likewise, during monthly meetings the project leaders received progress update presentations and discussions of the project. This allowed the Project Team some time to listen to experiences from managers and staff on a regular basis. The Business Development Executive (BDE) commented on how the network formation initiatives became a priority at the meetings:

*Once the team leaders began offering regular seminars and workshops, we began talking about different aspects of the project in the monthly update meetings…I think these were two of the initiatives that added weight to efforts towards creating the mobile money international remittance ecosystem (**BDE**).*

The Project leader and his Assistant also visited all the sales territories in South Africa and Zimbabwe to seek stakeholder buy-in as well as provide support and assistances to business development, sales and services staff. These visits also sought to assess progress on set milestones after the focal actor was granted a greenlight to operate in 2015. Significant milestones are captured in a supplementary interview with the Sales Manager (SM):

The milestones that we were tracking included customer registrations, brand ambassador recruitment and deployment, agent network development, aggressive marketing initiatives to raise awareness and social presentations…you are talking church-based or stokvels where migrants gather (SM).

In the process of being enrolled in the emergent network, the concept of mobile remittances had to undergo substantial stretching and adjustment to suit the objectives and emerging realities confronting of the focal actor. Findings suggest that the focal actor encouraged continuous efforts to solicit internal user feedback to improve the system from the pilot phase to the time of the soft launch and when the system eventually went live. This was envisaged to reduce employee demotivation, which could spell doom for the emergent network as well as increase consumer registration and uptake. This resulted in several system improvements. Consequently, there were new project related documentation such as standard operating procedures (SOPs) and service process development. The Assistant Project Leader (APL) commented:

Now (February 2016) that we have gone live, we receive feedback (from managers and staff) and share experiences during meetings…so… we now have the opportunity to continue improving the model. For instance, we are not using physical registration books anymore; instead we register our subscribers online (APL).

This finding shows that non-human actors were as much a target for interessement as their human counterparts. What would differ are the strategies employed to attract these heterogeneous elements of the network. Negotiations also took place between the focal actor and the internal experts and consultants who were handpicked to be on the Project Team driving the creation of the new network. The focal actor identified their needs and offered them a competitive remuneration. Consequently, they closely aligned their interests with those of the sponsors because of the incentive offered.

Look, our project team comprised mostly employees…these are professionals and experts…you know, sales executives and consultants. Our job is to interest target allies and users ... but even then, we are being paid by management. So, we accepted the new role and did the job. (APL).

The Project team members were separated from their existing network including moving the selected employees, experts, and consultants from Zimbabwe to operate in South Africa. Thus,

the employees were bestowed with *"privileged expatriate"* status, which was meant to manipulate them and create a perception of being a special select few. The focal actor also hired experts from other actor-networks located in the *"world's capitals of mobile money"* (**Board Member 1**). These, together with Zimbabwean expatriates, needed a work permit to continue working in South Africa and they were rewarded with expatriate scale salaries for retention. To retain power the focal actor included a caveat that permit renewal would only be granted if the network was successfully established and gained sufficient commercial scale. It was, therefore, in the interests of these team members to work towards a successful creation of a network. This inclusion of some interests and exclusion of other amounts to political manipulation of the internal project team members. The extract below is equally instructive:

> *We went out and we recruited people from all over the world. We brought people for this from Philippines, from India, from Kenya and so forth. These are the capitals of mobile money (**Board Member 1**).*

> *We sought the best skills and experience from abroad. This was a wonderful opportunity for us to upskill our own experts and for the expert, both ours and foreigners, to derive some professional growth in a different setting while earning expatriate scale salaries (**Board Member 2**).*

These findings also highlight the influence of economic ties between the Project Team members and the focal actor. Hence, negotiations between the top management and the team members focused on proposing economic incentives that were used as a tool to manipulate in order to *convince* these legitimating actors. To demonstrate the success of this interessement strategy to the internal audience charged with implementing the project, the Assistant Project Leader explained:

> *What we negotiated with the company was the amount of incentives … and how it was going to be applied and different things like that. Largely ... wanted to make sure we were getting a reasonable amount. I think we did a good job (**APL**).*

In addition to interessement efforts targeted at the top management and the Project team, the focal actor also understood the importance of Information Technology in the mobile remittance initiative during the design of the mobile remittance system. The Assistant Project Leader argued *"IT plays a huge, huge role in organisations and particularly emergent digital payment systems like mobile remittances."* This impelled the team to initiate the identification and

selection of IT vendors who could provide the best system required to implement the vision within the scheduled dates. To this end, standard company procedures, such as issuance of Request for Proposals (RFPs), were followed for vendor selection. Unsurprisingly, the tender was awarded to its long-term vendor, mobile money system vendor, a value-added services provider for mobile operators. The following interview extract can be seen through the lens of benchmarking the new service against the best in the industry as a strategy to legitimate the new service.

> So, we insist on due process to ensure that we live up to our high corporate governance standards. ████████████ is a reputable vendor in the mobile money space…we always aim for high standards and experience to avoid inefficiency. This preferred vendor had provided the system for the domestic mobile money system. So, we were glad to deal with experienced and reputable companies (**Board Member 1**).

IT was also treated as an actor with the potential to exert influence on the mobile remittances initiative in its socially constructed role of an active administrative assistant. Hence, user feedback around its affordances and constraints was sought to improve its uptake. This finding contradicts the "substantialist ontology" that views an IT artefact as an actor who could be brought in a non-problematic way to undertake simple record keeping and dissemination of data while being fully under the control of its users and completely subordinate to their interests (Cecez-Kecmanovic et al., 2014b, p. 809). Rather, the focal actor considered technologies as active elements, rather than neutral and inert actors.

For instance, tensions arose in the relationship between the system and the users as the project progressed when the latter realised that the mobile phone short code to access the mobile remittance menu was too long.

> They also felt that the Short code *130*2697*1732*7 was long. We had to reduce it to *130*2697*7# for one to get a quotation (**SM**).

Similarly, continual negotiations occurred that related to the development and adaptation of systems between the focal actor and Mahindra Comviva, vendors of the new systems acting as IT representatives. This feedback, which the focal actor actively encouraged, resulted in the users' influence on design in the form of an adjustment of the menu short code to the satisfaction of users. The interests of users were eventually aligned with those of the mobile remittance concept, the system and the focal actor to stabilise the network.

5.5.4 Interessement strategies used in the business and regulatory context

In the business and regulatory sub-case, the focal actor articulated the project idea and benefits to allow different actants to play specified roles. Policy makers and regulators were particularly significant target allies for the focal actor because of their vested interest as custodians of the integrity of the financial system. They formulate and enforce the rules of the game. The focal actor needed to build relationships with these key institutional actors in the host country and facilitate the development and diffusion of best practices among its employees. By playing their roles as regulators, business partners and channel members, the focal actor would help meet its needs and expectations as well as those of its allies. Interessement in this sub-case demonstrates the use of legitimation strategies as a way of garnering acceptance in an environment that had experienced failure of mobile money. This sub-case particularly focuses on the interface between the focal actor and its market and macro environments. Hence, legitimation strategies drawn from the Legitimacy Perspective were germane in shedding light on actor interactions at the macro level of analysis.

The focal actor deployed a combination of manipulation, conformance and argumentation strategies to reduce the cost of not only being a new entity in the international mobile remittance space but also being of foreign origin. For instance:

> *We lacked valuable complementary resources needed by a firm entering in a new institutional environment. We had a fussy idea about industry regulation in South Africa, our target markets, competitors and potential partners. We lacked institutional knowledge...government regulations and institutional rules and norms. We had to adjust as we acquired more knowledge courtesy of our partners. We mainly relied on our partners to access some resources (**BDE**).*

The findings show that the focal actor had to bear relational and institutional costs of operating in a host market (South Africa) where it lacked power as demonstrated by its limited access to information networks and customer bases forcing it to rely on partners. Consequently, being a stranger in a strange land, the focal actor's priority was to establish its legitimacy with the institutions in the host country to limit the costs associated with a lack of relationships and network membership in the host country environment. Some of the strategies deployed to earn buy-in from local constituents are captured in the extract from a Board Member below:

*One of the key…early preparatory work that we had to do was getting the regulators and the policy makers to buy into this. And, it's a major issue that I wish I had time to discuss this! Suffice to say we needed to ensure that the policy makers and regulators understood what was happening, where the benefits were. And so, we started with workshops (**Board Member 1**).*

The use of workshops as an interessement strategy was useful in that it allowed the Project Team to convince its sceptical stakeholders given the disruptive nature of mobile money in retail payments space, a context that is highly regulated and has its norms and values. For instance, interviewees from the focal actor state that they anticipated resistance during the interessement efforts to enrol regulators in the source country because, traditionally, international remittances in the South African context are channelled through banks, MTOs and new RSPs using the over the counter (OTC) transaction model and not mobile phones.

*By the way, for us to be accepted by diverse range of target partners, allies and resource providers, we had made sure that our behaviour, practices and structures are not at variance with prevailing rules, regulations, norms, values and beliefs in the South Africa payments context to avoid resistance(**RCM**).*

*The stakes can be as high as losing your licence if you go to bed with a wrong guy. Look at what happened to MTN in Nigeria over customer registrations … penalties can put the very existence of the entire business at risk. (**RCM**)*

As a communication approach, the focal actor adopted manipulation strategies that include lobbying for changes in rules, regulations, norms, scripts, values, logics, or models to allow the organisation to engage in an activity that may have previously failed or that is totally new in this context. Manipulation through symbolic management was one of its strategies used to interest the host regulators and policy makers. The findings show that the focal actor had to enlist the services of international experts from the *"world's capitals of mobile money"* to help it create this new channel in South Africa. Merely importing skills from Zimbabwe, a country continually subjected to extreme conditions induced by economic and political turbulence, may have generated scepticism arising from the liability of origin of the service. The focal actor needed to project a global outlook to rapidly access resources hence the use of symbolic management to manage stakeholder perceptions.

Regulators, policy makers and civil society were also engaged through meetings, workshops, trainings to highlight the benefits of harnessing remittances via the formal channel. The main communication approach was to project the new channel as a contribution to the global desire to reduce remittance transmittal costs and contribute to Anti-Money Laundering (AML) and Countering the Financing of Terrorism (CFT) efforts.

> *What particularly got policy makers and regulators interested were statistics suggesting that the average cost of remittances in 2017 was above 10% in Sub-Saharan Africa against a target of minus 3% by 2030 stated in Sustainable Development Goal 10c. They realised that South Africa is the economic powerhouse in the region and needs, not only to lead by example, but be seen to do so* **(APL).**

Notably, the active role of non-human actants such as the AML and CFT laws and the G20's National Remittance Plans in shaping the translation process is amplified.

The focal actor also won industry awards for its success in driving financial inclusion through technology development. This feat, which they used to interest potential allies, was also in recognition of its contribution made to the evolving and developing mobile industry. Consistent with the symbolic management approach, the focal actor ensured that the media carried these feats to legitimate its new projects such as the emergent mobile remittance network.

> ▮▮▮▮▮ *was awarded recognition as the best mobile payment solution at the GSMA Mobile World Congress Global Mobile Awards (The GLOMO Awards) for 2017 in Barcelona, Spain. By the way, these are Oscars of the mobile industry.* **(SM).**

Partaking in competitions and winning honours are credentials that symbolise competences and establish social standing. Similarly, the technology industry congress endorsement of what the focal actor was doing helped in enhancing its profile thus attracting more potential partners and users onto the platform. This is also amplified as a social test that legitimated the emergent network by enhancing the focal actor's reputation.

Being a new payment solution introduced in an industry known for strict regulation to mitigate risk and given that mobile money could not be replicated in the South African context with many reasons for this (Budree & Williams, 2013), mobile remittance technology would inevitably encounter some hurdles. The main challenge that the focal actor faced in trying to interest the regulators in the new channel was around risk management. The focal actor engaged the South African Reserve Bank, for instance, to get an Authorised Dealer with

Limited Authority (ADLA) Licence so that it could have an end-to-end control of the channel from the source to the recipient. It also engaged the South African Financial Services Board (FSB), which regulates non-bank financial institutions. However, the focal actor was not granted the ADLA license due to the fact that the applicant was not only a non-bank player but also a foreign entity. Thus, the regulatory rigidity in South Africa also contributed to the initial sluggish uptake of the mobile remittance service.

The South African Reserve Bank (SARB) does not provide a special dispensation for nonbank or e-money providers. This may explain why mobile money providers in South Africa partner with banks, which is the strategic opposite of the experience in the Zimbabwean market. Mobile money providers in South Africa are treated as banks and must comply fully with all the requirements associated with banks – such as customer identification by means of face-to-face identity verification and proof of residence. This rigidity on the part of the regulator threatened the project and impeded interessement efforts in South Africa in this sub-case. The focal actor was forced to re-think and re-design the project by revising its entry strategy.

The findings suggest that financial environment in South Africa has been well established, is securely entrenched in a regulatory framework maturing since the establishment of the first central bank in Africa, the SARB in 1923 (Rouse, 2017). The Assistant Project Leader opined:

> *The SARB insists on FICA (Financial Intelligence Centre, Act 53 of 2008, amended 2010) compliance which definitely subjects the mobile money industry to laborious administrative procedures, but this is South Africa. The SARB is not likely to relax these requirements in the light of the concerted effort to curb criminal activities related to money laundering and financing of terrorism (APL).*

Faced with this reality, the focal actor adopted the alternative, which was to establish collaborative partnerships with existing Money Transfer Operators (MTOs) and Remittance Service Providers (RSPs) for scale and speed as these actors already had the licence to carry out first mile services leaving it to do the last mile. The advantage with this strategy was that it rapidly grew its diaspora remittances service arm by working with entities that have done the necessary groundwork to establish visibility in the diaspora source markets. It also allowed the focal actor to establish partnerships with entities that did not only control a wide distribution network and enjoyed a good reputation, but it was able to partner entities that accepted its low commissions in view of the limited capacity of the lower end of the target market. While the focal actor continues with efforts to get that licence to reduce middlemen and transfer costs,

this setback demonstrates that the translation process is beset with complexity and can be messy as interessement may sometimes fail forcing the project initiator to restart problematisation with a new set of target allies. It is an iterative process.

Regulatory compliance as a legitimation strategy

Regulation emerged as a particularly salient actant in this research study. Regulators utilise it for risk management. This is aptly captured by the focal actor's Risk and Compliance officer:

> *On the institutional and regulatory front, the service operates in two jurisdictions - South Africa and Zimbabwe - which may have different regulations that need to be complied with in addition to standard industry regulations and compliance with AML and CFT laws. We utilised regulation as part of risk management to facilitate acceptance in the host country (**RCM**).*

This role of regulation in risk management amplifies the aspect of politics, power and related tension between key stakeholders such as the regulator and a service provider. One is persuaded to notice derisking practices by financial services providers and regulators as a way of preserving the integrity of the services and how overregulation may in fact impede new initiatives to serve the excluded population groups like migrants and hamper their access to regulated financial services. Regulation institutionalises the inclusion of some interests while other interests are excluded hence the aspect of politics as a salient theme in the creation of sociotechnical networks. Tension around regulation is captured in the interview extract below.

> *Regulators' big concern is around risk. But we argued in meetings and workshops that there has to be a balance between the goal of formalising remittances and managing risks. The SARB had to apply a risk-based approach commensurate with the guidance from the Financial Action Task Force (FATF) (**Sales Exec. 2**).*

In Zimbabwe, the interessement phase in the creation of a mobile remittance network was rather fast because the Reserve Bank of Zimbabwe had put in place legislative and institutional frameworks to mobilise diaspora remittances and to facilitate 'formalisation of remittance inflows, effective accounting and monitoring' (The Chronicle, August 21, 2015). For instance, the policy on international remittances was legislated through the establishment of Authorised Dealer with Limited Authority Licence that allowed the establishment of links between mobile money operators and traditional money transfer operators that allowed the former to avail a channel to disburse cross-border remittances.

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Service distribution infrastructure

In terms of service distribution, the focal actor had established a robust agent infrastructure that would facilitate domestic remittances. The focal actor recognised early on that mass uptake of mobile remittances would be won or lost on field activities – distribution and marketing – rather than the development of new product features.

> *The initial focus was on building a robust distribution channel and acquiring a critical mass of users. It began by building a broad network of agent outlets, particularly in downtown suburbs that attract migrants, semi-urban and rural areas where users cash-in the transfers they send (**Consultant**).*

The focal actor understood that agents were the backbone of the mobile remittance network. Therefore, it negotiated and concluded collaborative partnerships with existing retailers in South Africa following its failure to get an ADLA Licence. Equally, it recognised that setting up its own agent networks could have required a significant capital outlay due to related high operating costs. For example, the Assistant Project Leader, in justifying the collaborative partnership strategy, argued that agent remuneration from Cash-In and Cash-Out (CICO) can account for more than half of total provider revenues.

> *Costs include agent selection, agent commissions, maintenance, training, branding, advertising, customer education, compliance, risk management, and others (**APL**)*

The focal actor implemented close and regular supervision and management of agent networks as a retention strategy. This was particularly important as the distribution network became more complex, as they spread out geographically. It also found out that:

> *A large agent network results in friction which can result in inefficiencies, apathetic agents who do not get the support they need, agent dormancy and eventually churn and of course, customer dissatisfaction (**BDE**).*

Therefore, the focal actor adopted a strict selection criterion of agents and channel partners to legitimate itself in the eyes of target audiences that grant legitimacy. The following extract from the Project Team leader summarises the motivation for the focal actor's selection criteria of channel partners, which once again brings to the fore the influence of socially constructed conventions in creating a sociotechnical network.

*We were alive to our brand equity and sought to partner channel members who complement our solid brand. We wanted experienced partners who are also experts in the field and have a reputation for good service. We also wanted partners who adhere to industry standards, regulatory requirements (**Project Leader**).*

For instance, the focal actor concluded a strategic partnership with an airtime distributor in South Africa because of its wide footprint. For instance, Flash Mobile Vending outlets plus all PEP and PEP cell stores across South Africa were the backbone of the agent network for the focal actor in South Africa.

*Flash Mobile payment solutions are used by 60,000 informal sector small business shop owners throughout South Africa and it has a clear appreciation of payment service integration. That made it an ideal choice for a partner (**Sales Exec. 2**).*

The focal actor introduced the use of technologies like web-based and digital application forms and contracts, which significantly reduced turnaround times and the costs of agent on-boarding. Consequently, interest among prospects was stimulated, which in turn increased agent registration volumes. Prospective agents would electronically upload the required documentation and digitally sign the contract on the spot to facilitate agent recruitment. Experience had taught them that agent registration was too cumbersome as it typically required large amounts of paper applications that were then manually collected, verified, and approved—a process that could take days and sometimes weeks.

The focal actor also used training and continuous monitoring as strategies to cultivate and resource new and old agents. While reducing costs and ensuring efficiency in agent training and monitoring, the focal actor worked with strategic partners for the training of agents and deployed e-learning approaches. This technology attracted prospective agents and is helping to improve retention and learning through virtualisation and gamification. The focal actor was also able to utilise these approaches to conduct training assessments and measure the effectiveness of its training.

*We utilised mobile apps and conversational interfaces through social media to bridge distances by facilitating easier transmission of real-time information with head office and improving communication between field sales staff and agents and between agents themselves. This mainly allows them to share best practices and quickly report fraud cases (**Sales Exec 2**).*

Continual training is a measure to sustain a healthy agent network because it provides a platform to communicate the new network's products and services, policies, processes, to an agent, which in turn educates customers. It also helps to draw agents' attention to the risks involved in the mobile money business, as well as the mitigation strategies provided by the focal actor and regulators. A Sales Executive observed that *"It is crucial that agents have a strong understanding of these elements and are capable of managing customer relationships"*. The focal actor offered initial training immediately after on-boarding an agent or when new staff is hired. This is followed by periodic refreshers contingent upon the focal actor's calendar and one-off training sessions whenever new products or services are added or there are any changes to operational processes.

Agent monitoring was another strategy that facilitated interessement. The focal actor then introduced technology-based monitoring done on a daily basis. The benefits of leveraging technology are captured below:

> *Strong data analytics emerged as a benefit of our partnership strategy, as insights are combined from different business lines and partnerships, agents and regulators' databases to understand how best to serve an individual customer or segment (**BDE**).*

Monitoring focused on ensuring that the network conformed to the industry regulations and international best practice. Performance indicators included commercial monitoring concerned with transaction values and volumes per agent; compliance checks focused on anti-money laundering (AML) transaction monitoring, checking agent and customer risk levels and predictive future activities, and generating reports and flagging suspicious activities. The field team also did operational monitoring that entailed checking for branding, training, float levels, and customer service. Transactional monitoring was concerned raising a flag when there was evidence of an abnormally high frequency of transactions per second (pointing to a spike in customer demand) or several transactions of equal value occurring within seconds of each other (pointing to possible fraud). This brings to the fore evidence of local interaction between actants. Equally, that interaction was shaped by social structures such as industry regulation and international best practice.

Although the agent participated in increasing the adoption rate of the mobile remittance service, its main focus was to manage and facilitate consumer transactions in mostly business and rural areas as well as townships where there is limited access to traditional banking services. Agents' primary focus was on the volume of the transactions, as more transactions meant a bigger

commission paid to them by the focal actor for the value of transactions. It also had to ensure that the agent network had sufficient cash and float liquidity to meet the demands of its rapidly growing customer base, and for this the focal actor provided bonuses and special incentives to motivate them to invest in the channel and educate new customers. The focal actor encouraged agents, particularly small outlets, to sell complementary items like airtime and grocery items. For instance, the Flash mobile Vending outlets provided several services that include selling airtime, electricity tokens, bill payments like DSTv and facilitating mobile remittances transactions. This would supplement their float for mobile money transactions.

An agent could have several outlets in an area or different areas to maximise on the transaction volume. This was common in such areas as the farming communities of Brits in North West province, South Africa, where I encountered one owner with more than four outlets during the field work. Similarly, pattern is common in Zimbabwe, where one or two agents would have several outlets amongst them because they had the float for Cash-Out transactions. I also observed during the field work that such agents with financial capacity would employ more transactors and often run the few focal actor's franchise shops, which meant more commission.

Marketing Activities

The centrality of the relationship between branding, trust and awareness of contextual dynamics in building a mobile remittances network is especially foregrounded in interviews with different research study participants. The findings show that initiatives that demonstrate legitimacy and trustworthiness are essential in attracting consumers. The centrality of the focal actor's reputation is amplified as an important aspect in interesting regulators and business partners in the following extract from the interview with the Assistant Project Leader.

> *We had the knowledge, skills and expertise, but to establish a mobile money ecosystem outside of Zimbabwe, we need a reputation (**APL**).*

The focal actor profiled its brand as solving a social problem that forces migrants to end up enduring the inconvenience of using informal channels like transport operators for remittances. Crucially, findings indicate that subscriber trust in the focal actor's brand facilitated interessement of potential partners and agents in the business sub-case. Agents particularly mentioned that they were attracted to the network because it was championed and sponsored by a known and trusted brand. The quote below aptly summaries this view:

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*In a business that relies deeply on trust and credibility, the role of longstanding brands and the understanding of local contexts is integral to the engagement of people outside of the formal financial system. We leveraged that advantage (**BDE**).*

*Their growth and diversification have been fuelled by two key brand building pillars that have remained constant. One has been customer focus…their drive to meet customer needs with relevant and cost-effective technology-based solutions, the other is their vibrant and dynamic team led by their entrepreneurial founder (**Agent 2**).*

Another significant stakeholder that the focal actor sought to interest in its international remittance services was the mainstream and social media. In this endeavour, different strategies were employed that include regular updates on the evolution of the project implementation from launch to its growth. For example, in the first press release confirming the intention of the focal actor to launch an inward mobile remittance service along the South Africa-to-Zimbabwe corridor, the Project Leader packaged the service as a social imperative to ameliorate the plight of those at the Bottom of the Pyramid.

*Our research suggests that by making it quicker and easier to send small amounts, of as little as R50, and at any time, we will see a massive inflow of money, just like we see on our platform here at home (**Project Leader in a press release**).*

Selected Board and top management representatives were authorised to update the media on project implementation milestones by the focal actor.

5.5.5 Interessement strategies used in the consumer sub-case

The focal actor moved the next step of creating the mobile remittance network by directly or indirectly engaging with the current and prospective subscribers so that they adopt and consistently use the mobile technology-based channel. The focal actor had an estimated number of over one million, out of a population of over two million Zimbabweans living in South Africa who use its South Africa CALL HOME SIM card, which is powered by Cell C, a mobile network operator in South Africa. The focal actor targeted to on-board at least 50% of this population, which amounts to 1 million subscribers. Enrolling that target group onto the mobile remittance systems required a huge interessement process. The importance of scale in sustaining the network was not lost to the focal actor, hence the extract below from an interview with one of its representatives.

*Then we turned our attention to our users, our customers being one such group. In consumer business like ours scale… whatever we do has to do with scale. We have to scale demand and communicate on scale (**BM**).*

The first interessement strategy was to start simple. The mobile remittance service launched with a simple product: a basic USSD interface that allowed customers to deposit and send money from their mobile phone or agent outlet to their families back home. The initial focus on person to person (P2P) transfers was driven by two inputs: a survey of existing money transfer options for Zimbabwe's large migrant community and qualitative customer research conducted prior to launching the product. The survey of existing options, including cash transfers through the regular cross-border couriers, revealed that the mobile remittance service could provide a better offering in a range of areas, including price and security.

The initial customer message was simple: "Send and receive money". By launching a product with a simple value proposition and mass appeal, the new remittance service has been able to focus its efforts entirely on go-to market activities.

*My client's leadership knew that to achieve its long-term goals, the company had to take a collective breath and start simple (**Consultant**).*

The findings show that users had to first experience going to non-bank retail outlets to load their mobile wallets for subsequent transfer to their social network in Zimbabwe. The focal actor had to create enough urgency in customers' minds to learn about, try and use the service. This entailed designing a very simply offering with a simple technology artefact to overcome any related anxieties. For instance, through the marketing consultant, the focal actor hired hundreds of young people and asked them to get on the taxis in areas dominated by migrants in pairs just as ordinary passengers. They were to ride a taxi at least 15 times a day to only talk about the new service.

*So, they would just jump on the taxi and say to each other "Have you heard about this new service? They start sharing its benefits aloud and other commuters would join in with questions (laughs). Simplicity is the key! And after doing this for about a month or two they then went back wearing t-shirts and bibs and they started registering people on the platform. They also adopted the Gazebo concept around malls and roadshows in areas dominated by migrants. (**BM**).*

Emphasis of simplicity in the solution

The emphasis on simplicity in designing the service meant for an underserved migrant population is illustrated by the use simple feature phones and Unstructured Supplementary Service Data (USSD) for remittance transactions. Unlike smart phones that would need access to internet connectivity, the feature phone that uses USSD does not need internet connection and applications and it emerged as an important non-human actor in this study. It is the most ideal basic model that those at the bottom of the pyramid could afford.

The USSD is a communications protocol used by GSM cellular telephones to communicate with the mobile network operator's computers. Therefore, the USSD technology allowed the feature phone as well as the smart phone to send and receive short messages service (SMS) when transactions were conducted via the mobile remittance service. This informed either party of the status of the transaction (whether it has been successful or failed). Because of the USSD technology an SMS is a strong inscription as is described in section 5.6.4 below. To leverage the simplicity of the technology, the focal actor trained the agents and marketing consultants to educate and allow customers to try the service in a bid to win user confidence and trust.

The findings also show that the focal actor invested heavily in above the line (ATL) and below the line (BTL) marketing strategies to create user demand and scale-up the business. They particularly deployed BTL and brand ambassadors. ATL advertising via the radio, TV, and print, was used to raise initial awareness of the service, but given the novelty of the service, the focal actor believed below the line (BTL) activities would be more effective at educating consumers about the service and convincing them to try it.

The focal actor contracted a third-party consultant to provide marketing initiatives to attract and on-board users while its Sales team focused on recruiting agents to provide cash-in/cash-out (CICO) services. The marketing consultant went on to deploy a team of brand ambassadors to execute awareness and education campaigns to generate demand for the mobile remittance service at malls and street corners while agents set up outlet infrastructure to educate users and facilitate CICO transactions. These third-party actors were coordinated by the focal actor's 10 Sales Executives, who in turn report to a Sales Manager.

Below the line (BTL) marketing activities

"Brand ambassadors," were at the core of the customer acquisition strategy. They were assigned to high traffic areas and economic centres of the informal economy and migrant

communities, such as taxi ranks, malls, farms, rural trade centres. The objectives were to educate people about the new channel and to register new customers.

The focal actor 's marketing consultant also placed brand promotors at the main ports of entry between Zimbabwe and South Africa to target both remitters and receivers for awareness and user registration. Public holidays that stimulate traffic of most migrants to and from Zimbabwe were particularly important opportunities for information, education and communication campaigns as well as user registration at these posts of entry. The initial focus for the Marketing consultant was to aggressively recruit users and achieve a target of 350 000 in the first six months. Generally, a brand ambassador was expected to register 10-20 subscribers per day. Approximately 75% of the users were brought into the service by brand ambassadors rather than agents. The more registrations they processed, the higher the financial incentive in the form of a retainer from the focal actor.

Rather than working for commission, the consultant paid brand ambassadors a flat salary, which was intended to motivate them to take their customer education role seriously. By not tying salary to registration numbers, the consultant could encourage the brand ambassadors to focus on the quality of registered users rather than simply quantity. Brand ambassadors were extensively trained and closely monitored to ensure high-quality customer engagement.

Through a Gazebo concept and mobile unit outreaches, the marketing consultant teams distributed pamphlets at taxi ranks, malls, train stations and street corners. Registration were done at gazebos pitched in the malls in South Africa with a substantial migrant footfall and at street corners in neighbourhoods like Hillbrow, Beria and Diepsloot, places known to attract Zimbabwean migrants. Additionally, the consultant did radio and newspaper marketing to support below the line marketing activities. In particular, roadshows were held in neighbourhoods such as Hillbrow, Beria, and Diepsloot as well as farming communities that employ migrants. As also observed during the fieldwork, the brand promotion teams particularly targeted areas such as taxi ranks in downtown Johannesburg in the Hillbrow area known as "Ezibayeni". This particular taxi rank is mainly used by cross-border couriers that ferry goods and cash from Zimbabwean migrants back home. Below are photographs taken during one of my field observations in downtown Johannesburg at a loading basement of an apartment block by the "Ezibayeni" area in Hillbrow.

Photographs taken in a courier's loading basement in downtown Johannesburg

Though not keen to be taken photographs, one of the agents that I visited provided a vivid description of the role of human and non-human actors. Significantly, her account brought to the fore that technology is an active actant and has interests in the sociotechnical network. She stated that the network of mobile remittance agents started off as an airtime resellers for mobile phones. As mobile remittance agents, they now handle cash transactions and customers of the mobile remittance operator can deposit money into their mobile remittance wallets. To register for the mobile remittance service an applicant provides photo identification such as a valid passport to an agent who checks it before processing an electronic account linked to the applicant's mobile phone number. The account is activated when money is deposited with the agent. Mobile phones are used to handle the account and their main functions are to transfer money to other accounts, buy airtime, pay bills, pay merchant, and check their account balance.

The agent further narrated that, at the outset, the mobile remittance agents hired Point of Sale (POS) devises popularly known as the "Flash machine" because it was provided by Flash Mobile Vending. It was initially customers proposed that customers would transact using magnetic striped cards, but it was quickly realised that the costs would be prohibitive. Instead, agents were given a "Flash machine" costing R800 which was linked to the mobile remittance

service. The mobile remittance interface is seen as easy to use and runs from an application on the registered user's mobile phone.

> *The user is prompted by a menu, one prompt at a time. All the processing including entering in a personal identification number (PIN) is done by the mobile phone and when the user has confirmed that the transaction is correct, it is encrypted as a single SMS message to the mobile remittance provider's server (**Agent 2**).*

The outreach teams leveraged on the focal actor's impressive track record of achievements to legitimate the new network. Their message was around how the emergent network deserved their confidence and trust, which they had lost in the formal financial services owing to hyper-inflation in Zimbabwe. Migrants had been forced to use informal channels. *Trust in us was a product of our history of achievement. (**Business Development Executive**).* The focal actor understood that until a mobile money deployment serves a large number of customers, people will lack trust in the new system, because they know few who can vouch for it. This uncertainty about the value of the focal actor's offering amplified the importance of legitimation mechanisms such as symbolic management to enrol allies with desired resources. The findings reveal that the greater the uncertainty in the marketplace about the value of the focal actor's offering, the more important legitimation is to create a network of aligned interests. Asked why users would trust them in light their past experience, below is what the Assistant Project Leader (APL) and the Business Development Executive (BDE) stated.

> *So, we differentiate ourselves by conveying a basket of benefits; robust brand that evinces values that resonate with our market, related industry endorsements to project a feel of validity of a well-established business, we adhere to established standards and procedures and benchmarked against the best! (**APL**).*

> *We reminded the market of our past accomplishments which are there for all to see. We have technical expertise that is matched by a few in the mobile money space. Our growth is enough testimony to our capabilities…what we could accomplish. So, we play with the big boys (**BDE**).*

Use of incentives to encourage trail

User acquisition initiatives also involved offering bonus incentives to receivers to encourage remitters to use the new channel. Because receivers were identified as an important influence on channel choice, the incentive was meant to influence them to persuade the sender to use the

new channel for remittances. Manipulation, as a legitimation strategy, is also evident in the use of persuasive discourse and manipulative rhetoric issued through press statements or press releases targeting consumers. The focal actor launched aggressive promotions to attract subscribers and encourage them to use the service. Airtime bonuses lured initial customers to the service – customers who registered for the service received US$1 in free airtime. The next step was to encourage customer activity. The focal actor then followed the aggressive customer acquisition campaign with a major promotion focusing on usage rather than just registration.

The collaborative partnership strategy utilised by the focal actor particularly enhanced user interessement because it allowed a prompt deployment of the service. Further to that, findings show that it minimised costs of none-conformity to local institutional pressures, which could jeopardise much needed legitimacy of the project and efforts to make it more comprehensible and taken for granted (Suchman, 1995). This is captured in the interview extract from a participant below,

> *Most of the money transfer operators which provide remittance services have now concluded agreements with us. We then provide the last mile services. So, whether you are Western Union, MoneyGram, World Remit, Mukuru.com or Hello-Paisa…all those we are now offering them the last mile to our 9 million customers (**BM**).*

The focal actor believed that wealthier, banked customers would use the mobile remittance services differently than their unbanked counterparts. Instead of making transactions through traditional mobile remittance agents, the focal actor anticipated that they would want more convenient payment options. Bank interoperability meets this need for convenience by creating a direct link with a customer's bank account, allowing them to load their mobile remittance wallet directly from their phone. This also created a clear value proposition for a new set of customers. Attracting active, high-value banked customers has the added benefit of injecting liquidity into the mobile money system.

For the last mile services in Zimbabwe, the focal actor utilised its current distribution channels comprising 26000 agents, franchised dealer stores as registration and Cash-Out points for the customers to transact. The findings show that these agents did not need much interessement as they already had enrolled on the domestic mobile money network which was integrated with the cross-border mobile remittance network. Thus, they understood the technology and the business benefits.

Interestingly, during three different agent observation sessions in South Africa, I found out that when the agent, who is a general dealer, becomes busier during peak time, there is a shift in the priority of staff that assist with the mobile remittance service towards assisting in selling other products and services that the dealer offers. That was observed as a source of tension between the focal actor's interessement objective and that of the agent for a quick turnover. Because of limited scale, the initial stages of the mobile remittance network were not profitable for the agent. Hence, during peak periods, limited attention was given to registering mobile remittance users and facilitating transactions. This hampered interessement efforts and, in turn, the growth of the mobile remittance network. Relatedly, I noted that the agents were not actively selling the mobile remittance service to potential subscribers. Rather, they only registered customers who overtly requested for the service. Yet, the agent's role was to increase business activity by allowing subscribers and prospective subscribers to register and transact at their outlets.

Inequality in resources among agents was a source of tension that impeded user interessement. Small agents such as general dealers and Spaza Shops depended on the focal actor for marketing assistance to attract subscribers and stimulate activity for the mobile remittance service. The desired support was not always forthcoming. Some big agents used their own initiatives to grow the mobile remittance network.

5.5.6 Summary of findings in the interessement phase

The findings show communication in the problematisation phase was primarily diagnostic to formulate the Obligatory Passage Point (OPP). Once the OPP had been articulated, communication in the interessement phase entailed the definition of interests of various actors. This required intense outward communication, establishing the central role of the focal actor in the initiative and in defining the future of the other actors. In this phase, communication was directed toward convincing the actors, and blocking out different competing messages from other actors in the network introducing parallel interessement processes. Machiavellian' techniques were used in the mobile remittance case to assist the translation of others' interests and identities to the focal actor's own technology agenda. These would range from communication through negotiation to bargaining, manoeuvring, subterfuge and threats.

A notable lesson learned from the mobile remittance case study pertaining to interessement is that communicating exclusively with relevant actors' representatives has great potential pitfalls, because the relationships between an actor and its representative is always subject to change.

For instance, the relationship between a service agent and target customers would change when agent interests change. During peak hours, some agents would concentrate on selling some items that consume little time and neglect persuading potential mobile remittance customers to enrol because it is time consuming. This stifled interessement and enrolment of users.

Consumer interessement efforts by the focal actor also confronted several obstacles. The major impediments related to doubts on contemporary initiatives to formalise remittance channels along the South Africa-to-Zimbabwe remittance corridor due to the established nature of cash-based transfers, limited understanding of the business models of new digital players such as the focal actor and low levels of confidence and customer trust in formal channels.

The findings also show that the presence of strong cash-based counter-networks (competitors) impeded interessement initiatives because of their socially embedded character. Interviewed potential subscribers and present subscribers generally concur that informal 'Omalayisha' channel system is built on strong social and community relations of kinship, friendship, neighbourhood, and referrals hence cannot be easily replaced. Interview participants were adamant that it can only be complemented by the emergent network as most migrants send a basket of remittances that include money and goods as well as news, norms and values acquired in the host country (social remittances). The following extracts are instructive:

> *I, however, still occasionally ask Omalaitsha to take physical goods that may be in short supply or too expensive back home. Well, you cannot totally eliminate them given that our economy is still struggling, and shortages and ridiculous pricing is still the order of the day (**Service User 6**).*

> *To compound the situation, Zimbabwe suffers from a liquidity crunch. This forces remitters to use informal channels like Omalaitsha when there is need for hard cash for some transactions back home (**Service User 4**).*

> *Secondly, cash is but one item in a monthly basket of remittances. Rarely does one send cash only unless when one is responding to an emergency or sending money to pay for a service or towards a debt. Zimbabweans in South Africa send home more than one item, which has rendered omalaitsha an enduring method of transferring remittances (**Service User 5**).*

The participant observations I carried out during field work also sought insight into the dynamics of these counter-networks particularly the seemingly entrenched minibus couriers

known as 'omalayisha'. Therefore, I focused on 'omalayisha' operations, their place in the migrant life in South Africa and role in remittance flows as well as how the emergent network compares with this channel. The observation corroborated insights from interview participants who identify 'omalayisha' with, cash transmission, overloaded trailers, ability to circumvent formality and illegal activities including people-smuggling.

A picture of an overloaded taxi of a cross-border courier

A focal actor representative observed lessons learnt from omalayisha system, which informed the design of the mobile remittances service.

> *Ever since the advent of the 'omalayisha' system way back in the 1980s, there has been one unique selling point that made 'omalayisha' indispensable to Zimbabwean migrants: the 'pick and deliver' and 'home to home' convenience they offered. They also tried to offer an overnight service, which connected Joburg and even the farthest areas of Zimbabwe by moving people, goods and cash, which provided a seamless exchange between remitters and recipients (**BDE**).*

Interview participants also revealed that, before the emergence of the mobile remittance services, both formal and informal remittances service providers like MoneyGram, Western Union, banks and passenger bus service cannot match the convenience that is provided by omalayisha. With 'Omalayisha', remittances are made with minimum complications and

disruption to the social life of migrants. For instance, while the cross-border passenger bus service transports remittances and people, engages in people smuggling and delivers passengers to their door steps in Zimbabwe, it only terminates in urban centres yet omalayisha pick it from a migrant's home in South Africa and delivers it to the given recipient's door step.

Interviewees who use both 'Omalayisha' and the emergent mobile remittance network stressed that the relationship between 'omalayisha' and their clientele is wholly based on trust from both parties that is not only derived from community membership (kinship relations, neighbourhood and friendship ties, as well as referrals) but also, trust that is earned through reliability, honesty and good interpersonal relations. The lack of a written contract between omalayisha and their clients was exploited by the focal actor to attract users.

> *Their operations are not legal like the taxi industry through registration and operation permits. This is where we saw a gap, an opportunity to satify a need of someone who wants the convenience of 'umalayisha', the speed, the flexibity and, in addition, the peace of mind knowing the system is auditable…you can track your transaction…you retain control. That was our selling point!* (**Sales Exec.2**).

During a participant observation session, I encountered one 'umalaisha' who also signed up as a mobile remittance agent for the focal actor. He aptly captured the similarity between the informal systems and the emergent network that made the latter an easy option for a user who is used to remitting through 'omalayisha'. He remarked that agent reputation and client trust support both the informal 'omalayisha' system as well as the emergent mobile remittance system. The mutual reward is what gave agents interest to sign up.

> *In this business, just like my other transport business, trust and reputation is everything and this is earned. Your reputation determines the size of your clientele. In this business of sending money, people trust us with their hard-earned money, and they pay for such trust. We earn a commission. All we need to do is to consistently honour our obligations* (**Agent 2**).

By emphasising the salience of a good reputation, the extract above once again foregrounds the role of institutions in shaping sociotechnical network creation. Interview participants revealed that trust and reputation of 'omalayisha' is earned from the speed of delivery, convenience and the ability to transport "anything" across the border. However, some fail to accomplish these on a regular basis. However, sometimes vehicles break down or the goods

get lost or are confiscated at the ports of entry where a client's cash may be used to pay a bribe. This may lead to a collapse of trust as such circumstances are more likely to lead to conflict between a client and service provider. The focal actor emphasised on its brand reputation and the presence of a written contract as insurance to attract users from informal couriers.

The ANT is often criticised for downplaying contextual complexity yet there are numerous examples in the data where the complexity of the context within the sociotechnical network is evident. The finding also reveals and magnifies the role of context in shaping digital payment platforms. For instance, the mobile remittance service was launched in 2015 when the economic situation in Zimbabwe had stabilised. Goods, particularly food stuffs, were abundant in supermarkets. To maximise the benefits of migration, migrants from urbanized area were choosing cash remittances rather than consumer goods. Their recipients would cash out in United States dollars. Interessement to enrol onto the emergent network was easy. New digital money transfer platforms like Hello Paisa emerged as prominent channels for cross-border migrant remittances. This move was to cut-off the informal 'Omalaisha' completely. The focal actor leveraged this advantage. In a field observation in Hillbrow, one subscriber said:

> *The new way of sending money home has come at the right time. In fact, it is now better to send cash than groceries since grocery prices in here and home, in Zimbabwe, are almost similar. After all, omalayisha charge exorbitant prices to transport goods especially during the festive season so why should I lose money when I can buy groceries home?* (**Nonhlanhla Siwela**).

In 2017 when cash shortages became widespread in Zimbabwe, agents experienced this as a major contextual impediment to their interessement initiatives to attract mobile remittance service consumers in South Africa. Recipients would get transfers into their wallets and upon trying to cash out at an agent outlet, they were either told to try later or given the local surrogate currency, the 'bond note' which did not have the same value as the United States dollar. As a consequence, some users betrayed the emergent network to resume using the informal min-bus drivers for remittances to their families in Zimbabwe. This demonstrates the prevalence of negotiation, renegotiations and even actor betrayal in network creation.

In response to that contextual development and related user churn, the focal actor launched a 'foreign currency account (FCA) wallet' that allows remittance recipients to cash out remittances as foreign currency (US dollars) at its shops and at its sister bank

branches. Additionally, the FCA wallet allows recipients to make forex payments, in situations where they are required to pay in foreign currency.

> *So, there is no need to register to have this FCA wallet. If someone sends you money now on our mobile remittance platform, it will automatically get into your FCA wallet and, if you decide to keep the money for whatever months or years, its stays in that FCA (wallet) as forex. It's as simple as that!* **(Sales Exec. 2)**

This demonstrates that interessement is not a once off event, but it is a continuous exercise in the creation of a sociotechnical network. The focal actor managed to on-board 483 000 subscribers over a three-year period through various interessement strategies. While this represents 48% of the target I million registrations, it was deemed as a successful interessement process that is still ongoing.

5.6 Enrolment Phase

5.6.1 The enrolment phase for the organisational sub-case

Just like interessement and problematisation phases, enrolment is an on-going process. The overall enrolment process targeting key actors in this subcase can be judged as a success. A number of empirical observations support this evaluation. For example, key actors, including the Board of Directors, top management, the mobile remittance concept, Project Team employees, system designers, IT vendors and the mobile remittance technology all came on board to contribute to the relative success of the exercise. Their active participation in several brain storming sessions and the approval of the plan, including the budget, for the project as well as the actual project implementation and eventual stabilisation of the network can be credited to their successful enrolment. The following extracts confirm enrolment of key field actors who drove the project.

> *Yes, top management, consultants, experts in different functions…I mean the entire Project Team, were in, very active at the conception stage of the project. We brainstormed on the concept, interrogated strengths, pitfalls, opportunities for improvement and everyone enthusiastically offered suggestions on how to implement. We implemented and adjusted as the situation required (**APL**).*

Consequently, milestones defined in the project plan were realised namely: conclusion of partnership contracts, customer registrations, brand ambassador recruitment and deployment,

agent network development, aggressive marketing initiatives to raise awareness and church-based presentations to grow the network. The focal actor reports that on average $50 million is being remitted per month through the mobile remittance network constituting a significant revenue stream that the focal actor sought to create.

Enrolment is also evident from the reactions of the Business Development Executive. He relished the challenge and was excited about furthering his career in a context that has a functional financial system and where the replication of mobile money by MNOs had failed. Mobile money had had been successfully implemented in Kenya, Tanzania and Zimbabwe but failed to gain traction in South Africa.

> *In this business I see another revenue stream…I see growth. Look, my job primarily role entails creating revenue streams…sweating the assets of the business by exploring different use cases of mobile money. One such use case is to utilise the technology to transmit international remittances. So, yea I was interested in this project. Personally, I see a performance bonus (**BDE**)*

On the negative side, a top executive, a key emerging network ally, betrayed it by resigning to join a competitor during this time, before the project gained sufficient traction and scale. Equally, service teams in the old network that were not part of the Project Team were apparently enrolled by duty into the emerging network and not by any other objectives. And yet, they were expected to be key actors in offering the last mile to their 9 million subscribers who are the bulk of the remittance recipients. In a field observation session, the following extract from a customer consultant in Bulawayo captures this finding.

> *Eish, I wouldn't say I knew much about the project when it was launched! I think no one from this Western region was considered for the Project Team. So, I wouldn't say it was anything wow! Frankly, it became one of those jobs you do because your boss instructed you (**Customer Service Consultant**).*

Importantly, analysis in this sub-case has revealed that personal objectives are strong enrolling agents in IS projects. Unless interests of actors were addressed, enrolment was difficult.

5.6.2 Enrolment phase in the business and regulatory context

The enrolment of regulatory stakeholders in the mobile remittance network was, arguably, successful though characterised by power issues and political manoeuvring, which generated

tension. The enrolment of these actors that reside in the macro environment was mainly achieved through conformance with existing regulations, standards and norms. The focal actor leveraged the conformance legitimation strategy to garner the necessary acceptance in order to access needed resources. This was particularly important because the focal actor is essentially a foreign player introducing a service in a new context. The first hurdle encountered related to its failure to immediately get an ADLA Licence forcing it to conclude partnerships with existing player including competitors. This compelled it to pay commission for services rendered by it partners. Equally it impeded its efforts to build a channel that allowed it direct control of its members. Hence the Assistant Project Leader lamented that approach.

> *Well...we had to sign up competing remittance services providers who had built strong brands amongst the target market but lacked a robust route to market infrastructure that we had invested in back home. We controlled the last mile to 9 million potential remittance recipients. We told them that we had the channel in Zimbabwe to disburse the funds they collect in South Africa (**APL**).*

Among the strong brands that the focal actor concluded partnership agreements with and enrolled onto the network were World Remit, Western Union, MoneyGram, Africoin, Mukuru, Hello Paisa and Mama Money. Benefits included an expanded service network. The extract below drawn from Techzim, an online technology news source illustrates the partnership agreement between the focal actor and Western Union.

> *Today, the two companies officially launched this partnership in the presence of various affiliates and stakeholders. The guest of honour at the launch was Dr Kuphukile Mlambo, the deputy Governor of the Reserve Bank of Zimbabwe (**Techzim, 10 Feb 2016**).*

Equally, as part of establishing a robust distribution network, the focal actor concluded non-exclusive agency agreements with the traditional supermarket chains such as PEP and PEP Stores, Checkers, Pick 'n Pay. Specifically, Flash Mobile Vending has a 60 000 strong distribution footprint with a mobile vending solution that is used throughout South Africa and has already been integrated with payments for a host of services.

In Zimbabwe, the focal actor was granted a licence by the Reserve Bank of Zimbabwe to connect with money transfer operators in South Africa and offer the last mile channel to its

subscribers and prospects. The main challenge that impeded enrolment was the intermittent turbulence on the economic and political environment manifested in acute cash shortages.

5.6.3 Enrolment of service consumers

Enrolment of consumers was a moderately successful process after the focal actor managed to enrol 483 000 subscribers of which less than 357 000 registered mobile remittance subscribers were actively using the service. This can be ascribed to the following observation in Table 5.4:

Table 5.4: Summary of customer enrolment

Field Observation	Description
Availability of consumer supplies in Zimbabwe as a result of dollarizing the economy.	Migrants from urbanized areas were opting for cash remittances rather than consumer goods, a move that coincided with the launch of the mobile remittance service resulting in the complete cut-off of the 'omalayisha' agents.
Active role of receivers in convincing senders to enrol.	The targeting of receivers in the marketing initiatives by the focal actor and the regulator to try and manipulate senders to remit through the formal mobile remittance channel.
Regulator support to focal actor initiatives to promote the service	The Reserve Bank of Zimbabwe actively supported formalisation of remittances as evidenced by the introduction of bonus incentives to incentivise both agents and receivers to use the new channel.
Affordances inscribed in the system during design encouraged enrolment senders.	The design of the system allows senders to pay merchants and billers directly from their wallets without passing through a middleman. This reduced transaction cost and restored desired sender control. Senders can send small values frequently and even buy airtime for receivers back home.
Constraints inscribed in the sociotechnical system impeded enrolment.	The design of the system excluded undocumented migrants who could not satisfy the mandatory KYC requirements. It also excluded migrants who did not want to send financial remittances but wanted to send a basket comprising goods and money.
Contextual complexity hampered enrolment	The economic decline demonstrated by cash shortages in Zimbabwe disrupted enrolment efforts of key actors. Top management decisions to reduce expenses in the holding company were made and in some extreme cases some regions needed to dismiss some employees. This disrupted regular agent support visits. Management introduced online agent registration and monitoring technology.
A lack of agent interest to actively promote the service impeded enrolment.	The low transaction volumes and values at the inception led to lower commission values for some agents which sapped their enthusiasm in promoting the service thus demoting the service to a lower level activity. This impacted the level of service rendered to mobile remittance subscribers who had to endure long periods of time before being assisted
Slow registration and transaction process impeded user enrolment.	The amount spent to complete a transaction perceived to be not commensurate with the value gained from the service resulting in mobile remittance subscribers being assisted only during off-peak times.
Shortage of cash in Zimbabwe	This resulted in some consumers opting to revert to personal cash transfers via omalayisha. To ameliorate that, the focal actor made a commitment to source cash for remittance recipients though its sister bank.

5.6.4 Inscription

As previously stated, an inscription typically occurs as part of the enrolment process. Once an agreement between actors (i.e., enrolment) has been reached, the obligations need to be documented into the shared memory of the social system (i.e., "stabilised") through inscription (Sarker et al., 2006). Strategies for inscription in the context of a mobile money system include technical artefacts (e.g., security systems to manage risk). Accordingly, this section seeks to analyse and discuss how the inscriptions that were identified during the analysis of the organisation, business and regulatory as well as the consumer sub-cases impacted on the identified objectives for these sub-cases. The section also seeks to scrutinise and document the focal actor's role in engaging these inscriptions and moulding it to interest other actors. Mpazanje et al. (2013) observes that inscriptions are informed by aspects that include:

- ❖ Identification of explicit objectives from which inscriptions are derived.
- ❖ How these objectives or anticipations are inscribed to attract actants.
- ❖ Focal actors undertaking the inscriptions.
- ❖ The strength of the inscriptions and their ability to form irreversible networks.

The following inscriptions were identified during the analysis of the case study.

Partnership contracts

The focal actor's engagement with multiple money transfer service providers to conclude partnership agreements needed a series of steps and negotiations that can be viewed as an inscription process as interests of these various actors were addressed. The focal actor needed licensed channel partners that met its own considerations around reputation and compatibility to complement its efforts to facilitate money transfer via the ubiquitous mobile phone.

> *The partners were deliberately chosen for their brand equity, adherence to industry standards and demonstrable capacity to complement (us) in their markets. They inspire confidence in our customers and fellow business partners. Who would want to stake their reputation on a potential fly-by-night business partner? Hence, we partner* ▮▮▮▮ *and* ▮▮ *for their extensive distribution footprint, good reputation and high service standards. They are already offering payment and agency banking services in their branch network. That inspires confidence (**Sales Exec 1**).*

Fourth, the partnerships that ██████ *forged with reputable as its agents, not only enhanced access but promoted confidence in the prospective users of the service like me (**Service User 6**).*

*The fact that I would only deposit my money for transfer at PEP and PEPCELL stores allayed my fears that I had that the service might very well be a hoax. Remember PEP stores are everywhere in SA, and we regularly buy from them (**Service User 8**).*

Multiple agreements were concluded amongst actors that together helped enrolment to achieve the objective as stated in the problematisation phase. This is considered a strong inscription in the case study.

Agent and subscriber registration process

The registration process of agents and subscribers also required a sequence of steps that could be seen as an inscription process because the interest of several actors was addressed. The extract below summaries the registration process in which issues of politics and power, are quite pertinent in the creation of this sociotechnical network, are also brought to the fore. Potential customers who fail to satisfy Know Your Customer requirements are automatically excluded from the network.

*On such visits account managers check compliance with KYC (Know Your Customer) requirements for registration such as copies of valid passport during registration as well as transaction records (**Agent 1**).*

Given that the registration process needed to occur before an agent and a subscriber started transacting on the platform, this process can be regarded as a very strong inscription.

Money (cash or digital)

Money (in cash or digital form) is regarded as a significant actant and the strongest inscription in the enrolment process. It virtually impacts almost all mobile remittance actor network. Migrants could remit if funds are available. Critically, findings reveal that digital money would not easily replace physical money in the remittances space. Some migrants use both the electronic mobile remittance channel and the physical cash-based informal systems thus

confirming the complexity of the context of digital remittances. The sociotechnical model views context as complex.

The channel partners get commission on all transactions that are processed through them; the mobile remittance subscriber can make Cash-In and Cash-Out. The lack of money to fund the wallet can obstruct the activity during the enrolment process. The acceptance of electronic money in a setting dominated by cash-based remittances was also a pertinent issue in the focal actor's quest to enrol some users. The extract below is instructive.

> *Digital money has been resisted in some developing countries where people believe in keeping physical cash. Likewise, most of these people migrated to SA before we had launched our domestic version of mobile money, so they were understandably sceptical about electronic money (SM).*

Starter Packs

Starter packs contain a subscriber identity module or subscriber identification module (SIM), widely known as a SIM card. It is also possible to store contact information on many SIM cards. Hence, a SIM or smart card plays a vital role in the enrolment process. It allows subscribers to have access to mobile remittance services on the focal actor's network. Subscribers who receive these starter packs need to have their identity documents, to get them activated by MNO agents to allow them access to the MNO's network services such as making voice calls, texting, and using packet switched service, provided the subscriber has the requisite credit to do so. They may also register them for mobile remittance services.

The study findings show that some subscribers buy starter packs solely for the purposes of registering them for the mobile remittance services to give them to family members or friends who do not possess relevant identity documents to register by themselves. To avoid criminal activities around one person opening several mobile wallets for abuse, the focal actor's system only recognises the national identity number upon registration hence the system 'refuses' to use the same ID to register for more than one account. Potential subscribers without valid identification documents are automatically denied registration by the system.

The flexibility inscribed in the system to allow subscriber to register for mobile remittances through another MNO render Starter Packs a very effective inscription for promoting enrolment and growing the mobile remittance service as well as the MNO's network because new subscribers join the network. Likewise, agents and the marketing consultant recognise that

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registering more Starter Packs equals additional commission from the focal actor. The SIM also enables the subscriber to be easily traced and identified by both the focal actor, partner bank and the regulators since each a SIM has a unique number.

Conversely, the benefit for the focal actor are not straight forward since some starter packs fall dormant on the MNO network. Some subscribers use the SIM once for fraudulent activities and throw it away while others just activate the SIM card to deplete the pre-provisioned airtime. Starter Packs can hardly be regarded as strong inscriptions since not all of them end up being activated or stay active on the mobile network.

Short Message Service (SMS)

Mobile remittances are sent as digital money through IT artefacts that include the mobile phone. This artefact is a significant actant in this network with interests as much as the human actors. For it to be utilised by the target users, it had to be simple. System designers made sure that those interests were inscribed in the system. Accordingly, because the mobile remittances system is targeted at the population group often found at the bottom of the pyramid, care was taken in designing the system to make it compatible with regular feature phones and the USSD technology so that target users could easily use the service even in the absence of internet services. The feature phone as well as the smart phone could receive short messages service (SMS) when transactions were conducted via the mobile remittance service.

If a remittance was made or received or if the subscriber interacts with the mobile remittance system, for instance, to check wallet balance, the system sends a SMS to notify the respective parties (both sender and receiver) of the transaction that occurred.

> *At the end of the transaction a customer receives an SMS to that that the money sent has dropped in the recipient's wallet while they are still in the shop. Receivers can approach an EcoCash Shop in Zimbabwe, show proof that they have received a transfer from SA and cash out their money in US dollars (**Agent 1**).*

Thus, users of the mobile remittance system see the SMS communication as a confirmation of a process that occurred via the mobile remittance system. For example, when a transfer is received via SMS, the receiver will use the content of the SMS to confirm and redeem the monetary value while the sender will confirm that the receiver has redeemed the transferred monetary value. Thus, the SMS is a very strong inscription.

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Agent location

One of the key criteria for selecting channel partners or agents was the aspect of accessibility, which is why the focal actor endeavoured to conclude agreements and recruit agents with partners that control a wide distribution infrastructure. The location of the agent or MTO determines that level of accessibility to consumers to do CICO transactions. The issue of agent location is a common thread that runs through participant interviews representing the focal actor. For instance, the Project leader opines that "*We wanted partners located in strategic places to ensure access to our service*". In concurrence, a Service User 5 observes "*The location of Gazebos in Malls, churches, stokvels and areas with high traffic of migrants such as Beria and Hillbrow facilitated access and registration*".

The unique value proposition of the mobile remittance network was in allowing receivers to have easy and quick access to remittances and for senders to quickly transfer risk of carrying cash to the system. Therefore, known and accessible mobile remittance service providers are also a strong inscription that aided enrolment in the consumer context.

Branding/signage

Outside signage or banding of an agent outlet informing users of the mobile remittance service had both a strong and weak inscriptions. Some agents, based on their location, preferred not to be branded due to fear of robbery. When the mobile remittance signage is visible from the outside, the inscription on the outlet could attract criminals as a place that keeps money on the premises. This was stated by agents operating under cover in Hillbrow and Berea. They serve only known customers. The following extract is instructive:

> *So here in South Africa, we hardly put up banners advertising our mobile remittance service because it can attract criminals. That is what made mobile remittance here differ from mobile money in Zimbabwe where crime is very low. Criminals and cash attract so we need to be extra vigilant that we deal less and less in cash (**Agent 2**).*

Regulations

These have been identified as having both a strong and weak inscription. For the regulators, the violation of relevant financial services regulations could compromise the integrity of the formal financial system. Operating in two different jurisdictions introduced some complexity for the focal actor's enrolment activities. For instance, unlike the RBZ, the SARB was not keen

to grant an ADLA licence to a foreign entity that is not a bank. This forced the focal actor to change strategy and deploy the partnership strategy to on-board compatible MTOs with the ADLA licence to access service consumers in South Africa. Some partners did not actively promote the service to on-board consumers although it leveraged its established robust distribution infrastructure in Zimbabwe to give its MTO partners the last mile to its 9 million subscribers most of whom are remittance receivers.

Convenient and safe use of services

User convenience, ease of use and safety was a huge value proposition for the mobile remittance service. This was a key inscription for the focal actor to nurture since it is seen as a big factor that contributes to enrolment and retention of consumers. The Business Development Executive acknowledges that loyal customers are *"critically important in maintaining profitability"* in the very competitive mobile money industry in both countries.

5.6.5 Summary of the enrolment phase

The study findings show that communication during (and after) enrolment was directed toward stabilisation of the new relationship through inscription in a medium with some permanence, such as documents and software. Through regular feedback on system development, the focal actor succeeded in its attempt to translate and enrol other actors into "programs of action" (Callon, 2007, p. 62) defined in the OPP to create a mobile remittance channel. Human and non-human actors in the organisational, business and regulatory as well as customer subsets began to accept and represent the roles and interests defined for them during the OPP (Law, 1986a). That is, they began to align themselves to those defined roles, which resulted in the growth of the network in terms of the agent distribution ecosystem and subscriber volumes. Over 483 000 mobile remittance subscribers are now reported to be actively using the network to account for an average of US5 million dollars being remitted through this channel per month.

The focal actor utilised different strategies that include continual negotiation, political manoeuvring, seduction and consent without discussion to conclude partnership agreements and achieve enrolment. This phase also brings to the fore the different power dynamics in network creation. Legitimation strategies such as symbolic management facilitated enrolment as they were used to manage the actors stemming from the wider context

. For example, target service customers lacked confidence and trust in official financial services, which had the potential to impede their enrolment in the formal mobile remittance

network. Key actants such as focal actor employees, IT vendors, regulators, mobile network operators, money transfer operators, retail chain stores, agents, users and counter-networks such as cross-border couriers were enrolled on the back of translation efforts that addressed their interests during micro-level interactions among themselves and with the focal actor as well as the focal actor's ability to deploy legitimation strategies to constrain non-human actors stemming from the macro-context (such as regulations and industry standards). The inefficiencies of the traditional formal and informal systems facilitated interessement and subsequently enrolment. The assigned role, obligations and interests of each actor were captured in strong inscriptions such as partnership contracts, regulations and branding and signage.

5.7 Mobilisation Phase

The findings show that, in terms of time spent and activities implemented by the focal actor the most arduous translation phases are the problematisation, interessement and enrolment stages while the last stage of mobilisation was not very distinct from enrolment. In fact, most activities were implemented concurrently with enrolment. As a result, little is discussed about distinct activities in that stage, because they were few. The major activity in the mobilisation phase is the identification of spokes-agents for the mobile remittance network to speak on behalf of other actors in the ecosystem, which "silences" actors who may want to speak against the service. In the case study, the following were identified as key spokes-agents: the remittance receivers, mobile remittance agents and industry regulators. The findings show that communicating exclusively with relevant actors' representatives has great potential pitfalls, because the relationships between an actor and its representative is always subject to change.

Remittance receivers as spokes-agents

The focal actor first introduced the mobile money service in Zimbabwe in 2011 to primarily facilitate person to person money transfer following the M-Pesa success story. This was implemented in a context where significant population segments were either unbanked or underbanked. When the operator, who is the focal actor in this study, decided to extend the service to facilitate cross-border remittances, it needed a spokes-agent to speak positively on its behalf. Hence, its product marketing activities were simultaneously targeted at remitters and receivers. The following extracts confirm the role of receivers as spokes-agents:

*My parents and in-laws also encouraged me to use this system, as an alternative after I told them about my experiences with Omalaitsha. EcoCash mobile money is now a currency in Zimbabwe (**Service User 6**).*

*I chose to use ▇▇▇▇▇▇▇▇ because my wife and children back home use this service a lot more than they use banks. Banks are not as popular as they maybe in SA. Zimbabweans have had bad experiences with banks. We lost a lot of money in the banks around 2007-08, during the worst inflation in Zimbabwe (**Service User 4**).*

*My wife asked me to try registering this side so that in case of emergency, I could use the service to send them money from South Africa. I know very little about it and I have not had time to look for the agents to explain how it works. I know just a little bit about this facility (**Service User 7**).*

The receivers, in particular, received cash bonuses as incentives from both the regulator and the focal actor to influence remitters to utilise the formal channels such as the emergent network for mobile-based remittances. This spokes-agent had numerous challenges during the translation process. These challenges were shaped by the economic context in both the source and destination countries. As a result, the receiver did not always portray favourable representation. The findings show that, when there was shortage of cash in Zimbabwe, the receiver encouraged the remitter to betray formal mobile remittance network and utilise the counter-network of 'omalayisha' which would guarantee cash receipts.

*Zimbabwe has been hit by cash shortages due to economic challenges. This sometimes forces recipients to ask me to use Omalaisha when there is need for hard cash for some transactions back home (**Service User 4**).*

This forced the focal actor to assure recipients of foreign currency cash-outs and to redesign the system to provide for a foreign currency account (FCA) wallet. When that was implemented, the receivers resumed to positively speak for the focal actor.

*Upon the separation of the currencies and the floating of the bond note, we also created a separate wallet for remittances to allow recipients to receive their money in foreign currency. That would preserve the value of the remittances. So, there is no need to register to have this Foreign Currency Account wallet (**Sales Exec. 2**).*

Agents and Marketing Consultant

The main role of the marketing consultant in the translation process was to convince existing and potential subscribers that the system will deliver and register those who satisfy regulatory KYC requirements on the mobile remittance platform. On the other hand, the agent was also to register subscribers on the platform and then facilitate the CICO transactions.

> *We engaged a consultant to do the information, education and registration of customers while agents would do all those plus facilitating cash-in and cash-out transactions (**Sales Exec.** 2).*

> *Others would come for registration on EcoCash. For those we explain to them about the requirements that include a valid passport and a Call Home SIM card with a wallet service. For those with SIM cards that do not have Call Home SIM card we do direct remittances for them using our own SIM card (**Agent 1**).*

As middlemen, the marketing consultant and agent interface with and represent the focal actor's interests while simultaneously serving subscriber interests. Subscribers would, in turn, provide feedback on their service experience to the focal actor via the agent and marketing consultant. Therefore, the agent and marketing consultant, by virtue of their middlemen status, assumed the role of spokes-agents for the focal actor, regulators and consumers.

The findings show that the agent and the marketing consultant, like the receiver, had numerous challenges during the translation process and as a result did not always portray fair representation. In my semi-structured observation sessions at three agents' outlets, the agent did not actively promote the mobile remittance service. Instead, the agent transactors opted for other services with a quick turn like airtime sales that allowed them to maximise the commission payment from MNOs. Inevitably, this negatively impacted the mobile remittance consumers' service experience.

Similarly, not all mobile remittance subscribers, who registered with the marketing consultant and the agent, use the service. Many may register to take advantage of free a starter pack and airtime credit offered by MNOs to promote subscriber volumes. This resulted in many registered subscribers but dormant mobile remittance accounts as evidenced by low numbers of active service users, which was an act of betrayal of the mobile remittance service.

Regulators as spokes-agents

The findings suggest that regulators, particularly the Reserve Bank of Zimbabwe (RBZ), became a passionate spokes-agent of the emergent network because it addressed its major objectives and concerns.

> *We were excited with the launch of this service because it is consistent with our objectives which are broadly: 1) market confidence – to maintain confidence in the financial system, 2) financial stability – contributing to the protection and enhancement of stability of the financial system, 3) consumer protection – securing the appropriate degree of protection for consumers (**RBZ**)).*

The regulator lauded the emergent cross-border mobile remittance channel for making it easy to collect transaction taxes, allow traceability for the remittances and transactors to curb the twin evils of money laundering and financing of terrorism. The regulator further observed that the system is auditable and creates a database of transactions and identities of transactors. That would ensure both financial stability and consumer protection. The regulator enthusiastically officiated at different well publicised events meant to profile the service. These include partnership launches.

> *Today, the two companies officially launched this partnership in the presence of various affiliates and stakeholders. The guest of honour at the launch was Deputy Governor of the Reserve Bank of Zimbabwe (**Techzim 10 February 2016**).*

Regulatory interest was around the formalisation of remittance transfer as it preferred that remittances come through prescribed formal channels that are auditable and safe. To demonstrate support to the emergent network, the RBZ offered an additional 5% of the value of the received remittances as cash incentives to encourage receivers to persuade senders to use the channel. Thus, promoting enrolment of potential customers onto the platform.

5.7.1 Summary of the mobilisation phase

An illustration of spokes-agents of the emergent mobile remittance network is summarised overleaf

Table 5.5: A summary of the spokes-agents in the mobilisation phase

Spokes-agent	Spoke for	Spoke to	Message and results
Remittance receivers	Mobile remittance service	Remittance senders	Convinced senders that the system will deliver on its benefits
		Service provider	Feedback on contextual constraints to improve the system
Agent and marketing consultant	Mobile remittance service	Target users (remitters and recipients)	Convinced the system will deliver.
	Existing and potential users	Service provider	Provided user feedback on service user experience.
	Existing and potential users	Regulators	Provided user feedback on customer experience
Regulators	Mobile remittance service	Existing and potential users	Convinced the system will deliver
	Existing and potential users	Mobile remittance service provider	Consumer protection

The discussion in this segment brings the analysis to the following findings:

1) A sociotechnical network project is represented by spokes-agents or mobilising agents who are authorised to speak legitimately for the rest of the actors, which silences actors who may want to speak against the network.

2) Perceived benefits of the emergent network are enough reason to keep allies loyal and the network stable.

5.8 ANT and Legitimacy Perspective insights in understanding network creation

This chapter analysed the mobile remittance network creation process highlighting as lived experiences as well as the impact of pre-project activities to the initiation of the venture. The chapter also highlighted how the objective of creating the network was crafted from the pre-launch activities up to its stability as it facilitates remittances amounting to an average of over US5 million a month. As shown in the translation process traced above, two key ANT concepts: translation and inscription enabled me to understand how the network creation process advances from one stage to the other. The network creation process was analysed following the four moments of translation, *Problematisation, Interessement, Enrolment*, and *Mobilisation.* This allowed me to respond to the first research question: *How has the mobile remittance network been established?* As shall be demonstrated in the ensuing chapter, these

phases provide novel insights on how the emergent network objectives are crafted to interest different stakeholders in the venture.

ANT was complemented by the Legitimacy Perspective, that draws from Institutional Theory, to enhance its explanatory power, given its limitation in highlighting political and power issues at the macro (institutional and contextual) level. This allowed me to answer research question 2 and 3: *What are the legitimation strategies used and how do they play a role during the different stages of translation in the network building process? 3) What were the human actors' perceptions and interpretations of the emergent actor-network and how did that inform the choice and application of legitimation strategies?*

The combination of the two lenses was insightful in eliciting the following insights that are addressed in greater detail in Chapter 6 of this study: 1) Portrayal of the creation of a sociotechnical network as a political process based on negotiations; 2) Creation of a sociotechnical network as an evolving process characterized by tensions between the actors involved; 3) Sociotechnical network creation as a process having a relational and emergent character; 4) Sociotechnical network creation amplify power issues at the micro and macro-level; 5) Agency of technology in sociotechnical network creation; 6) Active role of contextual institutions as non-human actors in sociotechnical network creation process.

5.9 Conclusion

The findings show that ANT's translation process was used to trace the major actors, their relationships and milestones realised in the formation of the mobile remittance network. The intent was not only to observe and provide a rich and thick description of what their role was and what they were doing in the network creation process, but also to tease out and understand the factors that influenced their loyalty (or lack thereof) to the network. This analysis revealed a few key findings from this case. For example, the revelation that the case study is made up of three sub-cases that were traced for closer examination to extract and shed light on interesting nuances and insights in the network building process. In addition, ANT interpretation suggests that each of the four overlapping and recursive phases of translation demands different approaches to communication. Timelines and negotiation intensity for each translation phase differs with the first two phases – problematisation and interessement – taking longer that the subsequent phases of enrolment and mobilisation.

Equally, findings show that different legitimation strategies, drawn from the Legitimacy Perspective and entrepreneurship literature, are used by the focal actor to illuminate and foreground the role interests and influence of institutions (at the macro level) in the formation of the sociotechnical network of mobile remittances. This role is discerned from different approaches to communication and strategies used by the focal actor to show that selection and argumentation legitimation strategies are more useful to attract target network allies during problematisation phase of the network building process. Similarly, manipulation and adaptation strategies are more useful during the implementation stages that includes Interessement, Enrolment and Mobilisation. This suggests that a stable sociotechnical network is a function of more than hums-technology actors and their actions, as ANT purists would assert. Rather, in addition to the actors and their actions, the active role, interests and impact of institutions as non-human actors should be magnified because it is significant.

Key contextual actors that emerged from the case analysis are regulations which allowed a linkage with other financial and remittance institutions. It is also clear that the mobile remittance network was able to take off and grow rapidly because of reasons that include the positive reputation of the focal actor (e.g. resilience, commercial success, market size) experience of the corporate and its functionaries derived from the implementation of a domestic version of mobile money in Zimbabwe, well designed, good technical support and resourced technology platform capable of scaling up rapidly coupled with strong founder support as well as constructive engagement with the regulatory authorities such as the South African Reserve Bank (SARB) and Reserve Bank of Zimbabwe (RBZ). Analysis also alludes to historically-shaped contextual enablers and constraints inherent in Zimbabwe as a destination country for remittances. One example of the actors in the emergent network is the extensive agents' distribution infrastructure which already facilitated domestic mobile money services and was therefore able to act as the agent network for international mobile remittances.

The study findings reveal that stability of the network is contingent upon securing buy-in from necessary actors. Where buy-in was slow, the network creation process slackened and where it was present, it flourished. For example, enforcement of stringent conditions for ADLA license applications delayed the deployment of the mobile remittance system, while critical feedback from users, facilitated the interessement and enrolment of consumers and use of legitimation strategies like manipulation through symbolic management to manage actors located in the macro-environment helped thus stabilise the network.

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In sum, I found that network stability is achieved when interests of actants are aligned with project objectives because the actants become loyal to and passionate about the project. The mobile remittance network can be described as stable because it is active and facilitates an average inflow of over US60 million a year into Zimbabwe from migrants in South Africa. Though seemingly small a figure, it is in fact a huge feat given that it complements other existing channels. This is despite continual recurrent monetary policy inconsistencies in Zimbabwe occasioned by economic turbulence. Undoubtedly, the emergent channel still requires a regular review of the translation process to interest, among other actors, current and prospective subscribers. Equally, there is an obvious need for regular scan of service context to ensure that institutional actors are aligned with the network.

CHAPTER 6

DISCUSSION OF RESEARCH FINDINGS

6.1 Introduction

In the preceding chapter, I have provided an ANT-based account of technological change that focuses on a single case study – the introduction of an emergent remittance technology onto the South Africa to Zimbabwe corridor – and which uses a segment of ANT ideas: the four moments of translation. My goal in this chapter is not to suggest that the lens replaces extant knowledge relating to factors discussed in the literature and the processes surrounding them; rather, it is to magnify how an ANT-based analysis may augment our knowledge surrounding many of the factors particularly cited in studies using adoption lenses. I intend to integrate the findings of my case with the more recent developments in the literature advocating for a pragmatic application of the ANT lens. To this end, interpretations to the findings will mainly involve exploring some remaining tension relating to macro-environmental developments and the consequences of technology in the remittances space. The chapter particularly focuses on discussing the main research question "*How does a central actor create and expand a mobile remittance sociotechnical network?"* To answer this broad question, three subsidiary questions are addressed in this discussion:

- o In the light of the theoretically-informed interpretations provided in Chapter five of this study, what have we learnt about the creation of a mobile remittance channel?
- o To what extent does the augmentation of ANT with the Legitimacy Perspective shape the current study and the understanding of the researcher?
- o In the light of the findings and the use of ANT and the Legitimacy Perspective, what would be relevant considerations when conducting research informed by these theories?

By addressing these matters, this chapter attempts to tackle a blind-spot in literature on the sufficiency of ANT in studying sociotechnical network creation. Specifically, despite referring to the influence of social structures as emergent actors in sociotechnical network creation, this lens only tends to do so in a rather *ad hoc* and secondary manner. However, this study's main finding is that contextual factors and particularly social structures play a significant role in sociotechnical network creation hence should be foregrounded and taken seriously, which is currently lacking in ANT-based studies. The chapter also brings to the fore the key content of preceding chapters together and proffers a set of considerations that might be relevant when

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carrying out further research of sociotechnical phenomena to explore not only the creation of retail payment platforms like mobile remittances, but contemporary organisational phenomena in general. Each of these questions will now be addressed in turn.

6.2 The length and heterogeneity of the mobile remittance network

While seeking to understand how the focal actor orchestrated the creation of a sociotechnical system of mobile remittances, ANT was invaluable in tracing the "translation process" thus guiding data collection. Hence, the research activity reported sought to follow the traces of the sociotechnical networks through the organisation (and in some cases beyond). But this was done not just in pursuit of understanding human actors but also to appreciate the role and interests of the technical elements of the network with the aim of recognising the close bonds between human actors and objects that make the nature of the networks so strong. Specifically, the research attempts to demonstrate the strength of the mobile remittance network by proffering evidence of its length and its heterogeneity (See Figure 5.2). Latour (2205) observes that the strength of the ``facts'' and inscriptions fashioned by a network are relative to the length of the network and the character of the nodes that it is made out of.

I primarily utilised interviews to trace how the network was created from the perspective of the focal actor and the target allies. The findings, captured in the Figure 5.2, indicate that there is the focal actor sub-set (punctualised network), the regulators and business partners sub-sets and the consumers sub-set. In addition, the technology sub-set, comprising the system vendor and the mobile money technology, mediate the interaction of the three sub-sets.

6.3 The utility of ANT in deconstructing the mobile remittance sociotechnical network

Consistent with prior studies that have used Actor-Network Theory in case study research (e.g. Heeks & Stanforth, 2015; Mpazanje et al., 2013; Harry et al., 2014), I adopted their suggestion that when following the actors and networks, the researcher should start at a certain point, in most cases with the main actor to trace the heterogeneous elements that impact the actor's environment. The heterogeneous elements that constitute the mobile remittance network include anything from human to non-human actants as illustrated in Figure 5.2.

I used theoretical sampling as directed by ANT to "follow the actor" and purposively selected and followed the focal actor as it sought to enrol other actors into the emerging network of mobile remittances. The focal actor (mobile remittance service provider) is the prime motivator for this initiative of technological change. Thus, following the focal actor enabled me to trace

the network by identifying the first generation of actors who constitute the primary influence on the central actor to a certain point of interest, based on the research intentions that were indicated earlier in the study. As illustrated in prior studies, the boundary became the primary network. However, this primary network only emerged after engaging the focal actor.

I found that ANT provides an understanding of our opportunities and limitations in our increasingly socio-technically rich remittance practice. This research has shed some light on the way digital payment knowledge and remittance knowledge can come together in sometimes arbitrary ways and yield some rich and influential inscriptions of digital remittance procedures. For example, the study shows that, as mediators of social interaction, the systems connect remittance procedures (carried out by the focal actor, regulators, business partners, agents) with mobile money coding processes (manipulated by coding personnel) to forge facts that shape the network. This would not be easily possible without information communication technology and complex computer software.

The findings also suggest that ANT offers a clear mechanism that illuminates these systematic relations. By using theoretical resources from ANT, I was able to untie the knots at different nodes of the networks and reveal just how regular and mundane the interrelationships are. For instance, I was able to demonstrate how receivers influenced senders to not only provide feedback to the system designers but also appropriate the technology. Thus, ANT, arguably, offers a more profound appreciation and critique of the basic relationships which pervade contemporary organisations characterised by pervasive technology (Lowe, 2001). The output of such long and heterogeneous networks are undeniably remarkable albeit daunting.

From the outset of the field work, ANT was useful as a tool for sampling by helping to identify vital nodes (human and non-human) that constitute the primary network with a direct link to the focal actor. Using the lens, I was able to identify and select relevant informants related to the mobile remittance technology. The informants then helped in identifying other relevant "actors" that included humans, things, ideas, concepts and their roles in shaping the emergent mobile remittance sociotechnical system. Primary nodes of this network emerged as the organisational sub-case, regulatory and business sub-case, and consumer sub-case. Contrary to the view projected in adoption literature that technology impacts on humans as an external force (Tatnall, 2013), using the ANT lens helped me to appreciate the potential of mobile money technology in shaping social interactions in the course of creating a sociotechnical system of aligned interests (Walsham, 2017) (e.g. between migrants and their social network,

money (digital and physical cash), IT artefacts (e.g. mobile phone) and between the focal actor and its business partners and regulators). These actants have assigned roles and interests.

ANT's forte is in describing granular network creation activities from the micro perspective (Heeks & Stanforth, 2015). The lens was useful in describing in rich detail this unity in which the human and the technology have roles and interests. I gained a deeper insight into the processes involved in forging sociotechnical relations. The study reveals that the social and the technical are in unity from the start. For example, remitting through the mobile remittance system involves the dynamic interplay of the human/machine interactivities in which a remitter approaches an agent (human) who uses a Flash vending machine that requires a sequence of steps in which the agency of both the human and the technology is vividly revealed. To facilitate a cash-in involves the pushing of the keys to input the service short-code (human), asking for PIN number (machine), pushing of keys (human), giving options (machine), following a sequence of steps (human), transferring of digital money (machine), generation of SMS as feedback (machine).

One of the outcomes of this study is a recommendation of how to make this mobile remittance network (involving both humans and mobile phone technology) more stable and facilitate the effective introduction of the technology into the remittance environment. In doing so, barriers such as difficulties encountered in integrating the new software into remittance practices of users were identified. This helped to explain why enrolment was sometimes slower than expected or came to be labelled as a failure by some actors. Investigations of these micro-processes that revealed some of these nuances in sociotechnical network creation drew on similar studies such as good examples by Harry et al., (2014) and Creswell et al. (2011).

6.3.1 The translation phases and the iterative nature of the process

As demonstrated in my account of how the focal actor orchestrated the creation of a mobile remittance network, Gad and Bruun Jensen (2010) vividly illustrate that ANT helps to tell tales of how the world cannot stop transforming. This highlights the recursive nature of the process. While the four moments' were presented above as separate stages, and there are cases that can be described by just those four stages in linear order (e.g. Heeks & Stanforth, 2015; Mulwa and Waema 2015; Harry, et al., 2014; Poolack et al., 2013; Mpazanje, Sewchurran, and Brown 2013). However, in practice, these moments of translation are hardly separate, linear phases. They are, in fact, a complexity of overlapping, iterative technology-related events This is consistent with the proponent of the "four moments of translation", Callon's (1986) assertion

that he did not intend to have a simple and linear model: thus, his use of the term 'moments' which in reality are never as distinct as they are in most ANT-based accounts. Rather than steps or stages, the allowance for iteration and reversal, and the explanation is that translation is an ongoing process, 'never a completed accomplishment' (196). In my account, these phases are used as one of the ways of using ANT to simplify complex reality. One also gets the sense that any ANT account captures a slice of an ongoing process of network formation and dissolution.

This study began by seeking to establish if indeed Callon's (1986) four moments of translation do emerge in the case study of the mobile remittance network. This study's finding is that certainly the four moments of translation do emerge. What is, however, noteworthy is that, as reflected below, the translation process was far from being linear and sequential. Rather, the phases in the translation process were highly iterative.

Figure 6.1: The phases and the iterative nature of the translation process
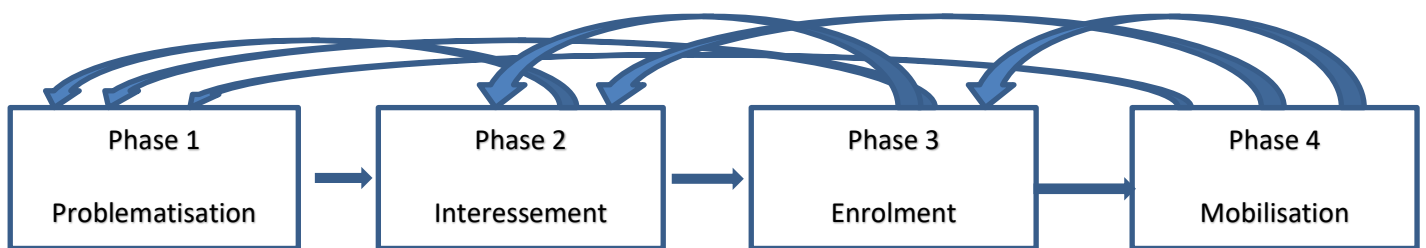
Source: Creswell et al. (2012)

While the different phases of translation denote some division, this study established that they are to a large extent arbitrary as they are all interrelated. In fact, the four moments of translation easily overlap one into the other. The most prominent stages were the problematisation and interessement and enrolment stages while the last stage of mobilisation was not very distinct from enrolment hence little was discussed about activities in that stage. Likewise, data collection and analysis within ANT research tended to be iterative and concurrent in nature. And, it is equally significant to stress that the success of the translation process is verified by the emergence of a robust sociotechnical network of aligned interests (Walsham, 2017). Thus, the success of the mobile remittance network is measured by the fact that remittance inflows of about $5 million per month find their way into Zimbabwe through the channel which has attracted close to half a million active users. This amount could have been making its way into the country through grey channels before the introduction of the mobile remittance alternative.

6.4 Use of legitimation strategies differs per translation phase

The translation process duration per phase was also a significant issue that emerged from the study. The findings show that the duration of the negotiations per phase differ. Significantly, the first two phases – problematisation and interessement- took longer time that the subsequent phases – enrolment and mobilisation. Negotiations in the problematisation phase tended to be lengthy because the focal actor first identified potential partners and then framed the problem of informal remittances in such a way that other actants recognised it as their own. Argumentation, as a legitimation strategy, was primarily utilised by the focal actor as it sought to establish itself as the Obligatory Point of Passage (OPP) or gate keeper between allies and inscriptions in the emerging network.

The focal actor also used conformance (adaptation) and selection legitimation strategies because both the digital payment technology and the market segments on which the emergent network sought to focus are evolving, which inevitably generates heightened uncertainty and anxiety among target allies regarding the channel's integrity and quality. This anxiety was the highest during problematisation and interessement phases in view of the previous unsavoury experience with formal channels by some target users. The focal actor had to demonstrate that it was legitimate by adapting to external expectations through conformance with established rules of the game (Suchman, 1995) thus reducing the "liability of newness through adaptation to external expectations and committing to a standard and regulations that are already established. These include the use of chain retailers like PEP Stores who already offer agency banking as its mobile remittance agents. Equally, selection of key allies that enhance its legitimacy was critically important during this phase. This was achieved through concluding partnerships with known and reputable service providers such as the mobile network operators and the money transfer operators like MoneyGram and Western Union that are located in a favourable locations (e.g. high traffic and concentration of migrants' communities such as the Johannesburg central business district and inner-city residential suburbs**.**

This phase was characterised by a lot of toing and froing as the focal actor tried to convince potential allies that the new channel would generate value for them in the form of commission for channel partners, reduction in informal channels to regulators, increased convenience, security, speed and control for consumers and increase inflows of foreign currency for the destination country. Because the partners developed trust due to time spent together planning and negotiating, time for the translation process in the subsequent phases drastically reduced.

The duration of the interessement phase was equally long as the focal actor deployed various tools to interest, convince or appease potential allies that by going ahead with the focal actor's interests, their interests are also served. While potential allies still bore some considerable uncertainty at this stage of the network building process, the nature of the symbolic mechanisms used by the focal actor to make legitimacy claims shifted from, for example, primary reliance on the founder's and the Project team's human capital and pre-existing ties to the well-known parent mobile network operator brand and the focal actor's history of accomplishments as signals of a quality and resilience. The focal actor went on to signal legitimacy by concluding partnership deals with "reputable" technology partners, various remittance service providers and agents that constituted a vital part of its network. Some elements of manipulation are also evident where the focal actor went on to profile and publicise these accomplishments via mainstream and social media platforms as well as its website to garner legitimacy. Awards conferred on the focal actor were publicised as demonstrable "proof points" of accomplishment of critical milestones that is confirmed by key external (not internal) actors (Rao, 1994). Proof points are an important antidote to uncertainty by serving as demonstrable evidence of a new venture's capabilities (Fisher et al., 2017).

Communicating its success in competitions and wining honours sought to leverage its credentials that symbolise competences and establish social standing of the focal actor to enhance its legitimacy. This symbolic action is consistent with two widely held beliefs articulated by Rao (1994) as a strategy to garner legitimacy. Rao, who is widely cited as an expert in symbolic management, argues that partaking in competitions and winning awards enhances the brand profile of an entity that seeks legitimacy because elements that grant legitimacy believe that "First, winners are better than losers. Second, contests convey rational and impartial testing.

Figure 6.2: Translation process timeline per phase
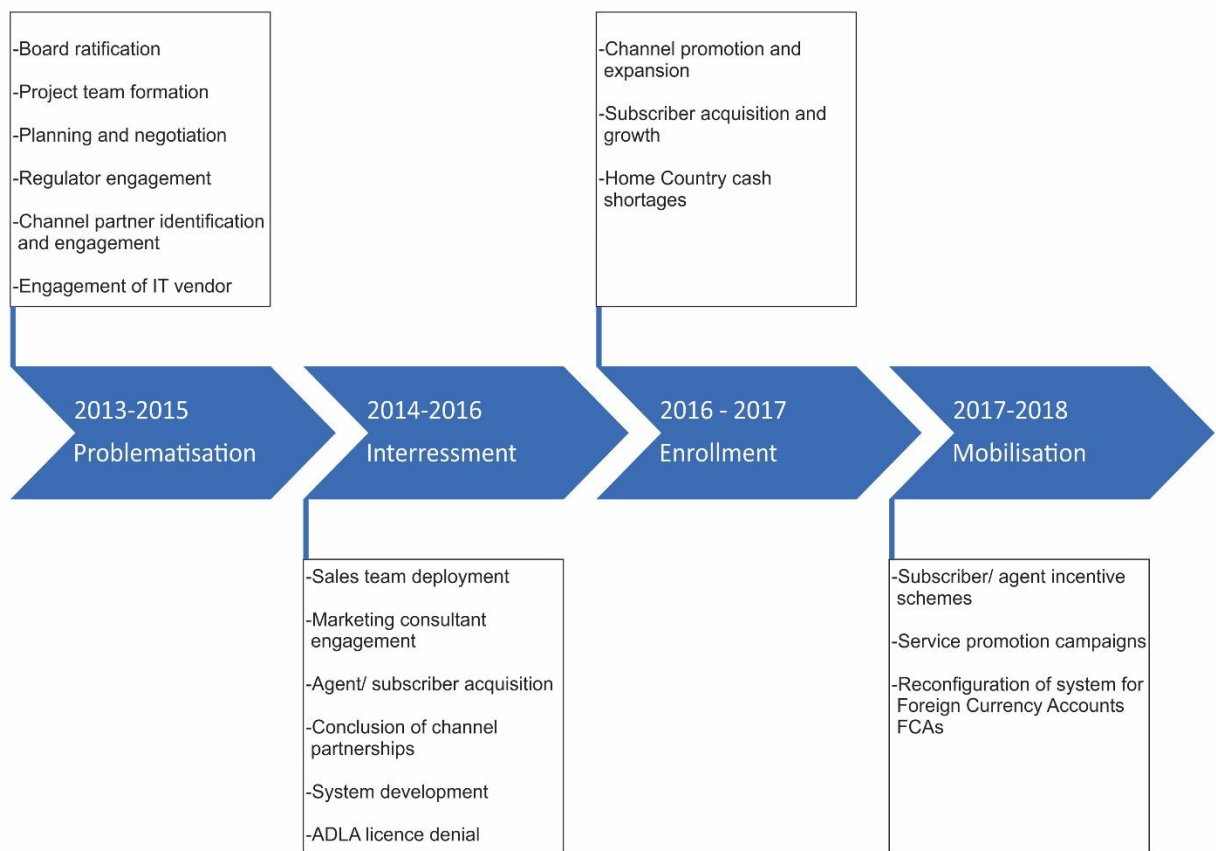
By helping to trace associations between network components or actors, the lens helped me to "zoom in" on network building blocks and examining the micro-context and processes (e.g. individuals directly interacting with technology) and macro environmental influences on those interactions. In turn, this helped to shed light on the nuances of social reality such as the motivations for users to adopt the technology. Thus, ANT helped in revealing the constituent parts of the emergent network, which adoption literature does not provide in rich detail.

6.4.1 Negotiation intensity varies per translation phase

Connected to the variability in the timeline spent per phase, the findings also showed that the intensity of negotiations that are related to the translation process varied per phase. The intensity of negotiations between the focal actor and the target allies gradually rose as the translation process began from problematisation and progressed to interessement then dropped accordingly in the enrolment and mobilisation phases. The findings show that the problematisation phase entailed modification of willing allies' current interests and to align

them to those of the OPP. This inevitably heighted intensity of translation efforts in the initial phase. Similarly, tracing interessement activities of the focal actor reveal that detaching potential allies from other networks and locking them into the problematisation required intense translation efforts and effective strategies.

Conversely, the drop in the intensity of negotiations in the final phases is attributed to the fact that potential allies are already sold to the roles and interests defined for them during the OPP. They begin to align themselves to those roles. Focal actor succeeds in its attempt to constrain - to "translate" and "enrol" other actors into "programs of action" defined in the OPP (Law, 1986a). This stage brings to the fore the different power dynamics in network creation. The less powerful submit to the powerful actors. For instance, regulatory enforcement of the KYC precepts achieves compliance by the focal actor and its partners as well as the consumers.

Likewise, the aim of the mobilisation phase was to maintain commitment of the enrolled network allies. Negotiations and political manoeuvring were not as intense in this phase as they were in the first two phases. Enrolled actants became spokes agents and represented the network as they were authorised to speak legitimately for the rest of the actors. These include remittance receivers, regulators and marketing consultant and agents. Through their role as spokes agents they silence actors who may want to speak against the network. For instance, as regulators speak on behalf of the emergent network, uncertainty and anxiety are reduced hence translation is reinforced as actants submit to regulations and standards.

6.4.2 ANT helps to explain power dynamics at the micro-level

Significantly, through the translation process, ANT helped me to gain detailed insights into how social effects such as politics and power came into being. ANT was a particularly critical analytical mechanism that I used to follow actors and trace negotiations and political manoeuvring at the micro-level of analysis. For example, consumers (human actants) were encouraged to give feedback on the utility of the IT system that enabled mobile remittances. ANT assumes that while human interests are easily discernible, technology is also an important actant with inscribed interests. A case in point is the initial short code or short number that was used to access the mobile remittance service, which the users felt was too long and could not be easily remembered. Yet short codes are designed to be easier to read and remember than telephone numbers. The focal actor had to negotiate with system developers and then inscribed that human interest in the system design.

However, human-technology negotiations had limits. Undocumented migrants, who constitute a significant number of the target population for mobile remittance service could not access the mobile remittance service. They cannot be enrolled onto the mobile remittance platform since the system is configured to accept one's identity document as a unique identifier to register. Equally, financial regulations insist on the Know Your Customer (KYC) principle to curb money laundering and combat the financing of terrorism. Consequently, the technology, which is paradoxically designed to enable financial inclusion, only served particular interests of those with requisite identity documents and excluded others without, and these interests are economic in nature. Therefore, this confirms politics of artefacts (Introna & Whittaker, 2006). Specific features in the design or arrangement of the mobile remittance system implicitly provided a means of establishing patterns of power and authority in the remittances space.

6.4.3 ANT amplifies the active role of objects in mobile remittance network creation

Thebe and Mutyatyu (2017) cite the socially embedded character of informal channels of remittances as the motive why it would be difficult to replace informal remittance channels such as cross-border couriers with contemporary mechanisms such as the emergent technology-based remittance services. In the study of one such emergent mobile phone-based remittance service, ANT has allowed me to try to understand what actors do and how their behaviour is changed as well as how mobile technology can actively transform social processes such as remitting while accepting the evolving nature of reality (Creswell et al., 2011). The lens amplifies the active role of objects such as technology artefacts that may also be socially accepted as symbols of power.

The study demonstrates that ANT opens up mobile remittance technology to reveal it as a socio-technical network of actors that constitute and operate through the technology, and that inscribe their interests into that technology. In the great majority of technology and development literature, often using adoption lenses, technology is only seen as a silent passenger in, or output from technological processes (Heeks & Stanforth, 2015). Through the moments of translation account, technology plays an active role as it shaped the network through the interests it inscribed and spoke for, and through the functionalities it offered.

Through a parable, Law (1997) vividly illustrated how objects such as a big office, a computer, and a phone can serve to create the manager in an organisation as the source of power. When the same manager is studied as a person and isolated from a network, comprising human and material objects, they are viewed as relatively powerless or "a naked apes' because they lack

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those objects that are socially accepted as symbols of power. ANT allowed me to trace those dynamic interactions humans and technology and how they facilitated or constrained the development and stability of the emergent network.

6.4.4 Mobile remittance network creation has a relational and collective nature

By utilising the theoretical resources from ANT, this study established the relational and collective nature of ICT appropriation (Gonzalez & Cox, 2014). This is why the study took interest in the role of the social and technological actants that shaped the creation of the sociotechnical network of mobile remittances. This marks a departure from previous studies on mobile banking and mobile payments that have followed a cognitivist tradition, which tends to solely explain action by looking at individual purposes, intentions and interests. It further sheds light on complexity introduced by the role and interests of inanimate objects like technology which are also active in the creation of sociotechnical networks

As stated in the review of related literature, mobile money and mobile remittances research is dominated by studies carried out by practitioners (Dahlberg et al., 2015). Therefore, the related literature reviewed focused on scholarly research done on mobile banking and mobile payments that utilised Technology Acceptance Model (TAM) (Davis, 1993), Innovation Diffusion Theory (IDT) (Rogers, 1995) and Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003). The researchers have explained ICT implementation and use as being influenced by, inter alia, technology's perceived usefulness, perceived ease of use, social norms, relative advantages, perceived risk, personal innovativeness, perceived cost of use, compatibility with life-style and needs and perceived security (e.g. Kremers & Brassett, 2017; Harindranath et al., 2015; Shaikh & Karjaluoto, 2014; Huili, Shanzhi, & Yinghui, 2013; Chitungo & Munongo, 2013).

While these studies have certainly augmented our understanding of why and how ICT solutions are appropriated, adopting such individualistic assumptions obscures the enduring social and collective character of human action while oversimplifying the complex nature of ICT adoption by isolating variables (e.g. motivations) and treating them as independent so as to be correlated and predicted via statistical methods (Hayes & Westrup, 2012). Conversely, using ANT in this study to trace, describe and analyse relevant actants and their dynamic interaction in the creation of a mobile remittance network has revealed that ICT appropriation and use could be seen as a relational phenomenon. It is an activity determined by relations established and maintained between actors during the process of translation. In particular, this relational view

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magnifies relations between both human and non-human actors such as technology (e.g. Lee et al., 2015; Harry et al., 2014). It demonstrates that both humans and technical elements have interests and play an active role in the emergent mobile remittance network.

The findings show that these relations were fabricated through a process of negotiation, political manoeuvring and manipulation. Equally, findings show that the inability of the technology to strengthen its relations with human actors undermine its use and, therefore, appropriation. A case in point could be the inscriptions in the mobile remittance technology such as the password to protect a subscriber's account. A password is a string of characters used to verify the identity of a user during the authentication process. Passwords are designed to be known only to the user and allow that user to gain access to the mobile remittance system. This inscription is part of risk management. It renders technology an active actant in the created network as the password inscribed in the technology can enable or disable a transaction.

The value of augmenting ANT with the Legitimacy Perspective

Adoption literature tends to look at technology implementation and use as a static event. This is an additional limitation of using lenses like TAM, UTAUT and IDT (Bagozzi, 2007) because looking at snapshots of technology acceptance tends to conceal its evolving nature and historically-shaped situation (Gonzalez & Cox, 2014). Conversely, ANT helps in highlighting the active role and dynamic relations between human and non-human actants such as technology thus deconstructing the complexity of sociotechnical network creation at the micro (local) level. Relatedly, I found that augmenting ANT with the Legitimacy Perspective allowed me to also foreground the dynamic, contextually and historically shaped nature of technology acceptance. This provided an antidote to the simplistic explanations given in adoption literature that look at technology acceptance and use as if it were a one-time event phenomenon detached from other (previous) enactments and the macro-environment. Creating a mobile remittance network and its appropriation is revealed to be a process with its own history, context and dynamics and that is continuously evolving.

The study findings reveal that adoption and use of technology is not an isolated action, but rather as being a process that is in continuous flux and shaped by the dynamics of the translation that occurs within and beyond the boundaries of the network. What shapes enrolment onto the mobile remittance network are continuous deployment of strategies (processes of negotiation, coercion, subterfuge) failures of enrolment, deployment of strategies and processes of betrayal and competition that occurs over time. These manoeuvres then, to different degrees, strengthen

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and threaten the emergence and maintenance of relations between actors that are required for network formation and stabilisation. Furthermore, the complexity of this dynamism is reflected in the findings that reveal how some actors betrayed, resisted, supported, disrupted, or competed against the technology supporting network creation.

Table 6.1 A summary of contributions made by the ANT in studying the creation and implementation of the mobile remittance network

Key Concept	Role of concept in studying IT implementations	Valuable contributions for a mobile remittances study
Translation process	Provides detailed understanding of the complexity of different actors at play when artefacts are introduced into a new environment.	Where an adoption lens would have neglected the design context and examined the adoption context in isolation, ANT helped in generating insights into how mobile money software designed by computer scientists is introduced, user feedback is solicited and negotiated, and the IT is eventually accepted to facilitate international remittances.
Active role of artefacts/objects	How objects like money (digital and hard cash) and technology are no longer viewed as passive "blackbox" containers of information, but as playing an active role as actants in shaping established practices by influencing the way human actors relate.	Rather than money and mobile money software being a relatively passive piece of equipment in adoption literature, which may lead to underestimating its influence, ANT projected the software as actively transforming the manner and frequency of migrant remittances while money is projected as also being an active actant with interests.
Generalised symmetry	Helps researchers using ANT to resist imposing a-priori differences between actors (e.g. human and non-human).	Where adoption literature could make prior assumptions of dualism between humans and artefacts, which may distort data collection and analysis, ANT helped in recognising that objects such as the IT, mobile phone and money can actively generate unpredictable outputs.
Enrolment	This entails exploring how different actors are enrolled into a network and how associations are created over time.	While using common lenses from adoption literature may not have allowed me to capture the different power dynamics among actors, ANT aided in mapping out interests of different actors and how the most powerful (e.g. the focal actor) try to enrol others (e.g. users) in adopting the mobile remittance technology as well as how mobile remittance technology enabled and disabled potential users.
Flux of reality and varieties	Refers to exploring how complex associations between actors and effects emerge through movements in the	Adoption lenses would invariably adopt a more linear and causal approach to studying IT implementations that projects a rigid view of reality which tends to be too

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	network (e.g. power relationships, social effects)	simplistic and conceals the complexity of change. Hence, ANT helped me to conceptualise how change (e.g. in channel choice) is a process that is also context dependent resulting in a nuanced picture of the dynamic association between actors.
Analytical mechanism and theory development	ANT is used as a conceptual tool to guide the research process, frame the research questions, collect and interpret data and theorise about potential explanations. It is augmented by the Legitimacy Perspective to help us better understand sociotechnical network creation particularly to role of social structures.	Sampling used in other lenses would neglect potentially important actors and yet using ANT helped me to focus on a mobile remittance technology and sampling different human and non-human actors associated with it. The notion of networks helped to conceptualise connections and active role objects (e.g. technology and money).

The case study suggests that because of its flat ontology, ANT is inadequate in helping answer questions about the role and influence of context or social structures on technological process. However, the lens has shown the potential to open the black box of technological change processes and offer new insights:

- an understanding of how the networks associated with those processes come to be created;
- an understanding of the active role played by technology in those processes;
- an understanding of how the interests and identities of various actors are translated during those processes.

That said, the relevance and utility of ANT in deconstructing the mobile remittance sociotechnical network brings us to the first proposition:

Proposition 1a) A sociotechnical network is forged by aligning interests between human and non-human actants at both the micro and macro levels.

Proposition 1b) Sociotechnical network's stability is maintained or undermined by diversity of actor's interests during the process of translation.

Proposition 1c) The extent of actor cohesion, competition, betrayal, and resistance is likely to determine the level of robustness of a sociotechnical network.

Proposition 1d) Sociotechnical network creation and stability is undermined by tension between actor's interests during the process of translation.

6.5 Contextual influences on sociotechnical network creation

The second question of this study, which also provides an opportunity for theoretical contribution, seeks to establish the nature of broad social structures captured in the legitimation strategies used by the focal actor and how they play a role during the different stages of translation in the network building process. Section 6.3 demonstrates that ANT was particularly strong in shedding light on the micro (local) level political processes involved in fabricating associations or relationships that result in a stable (or not) network of aligned interests. However, in emphasising the general symmetry principle between humans and objects, ANT assumes that research findings from the micro-context (individuals directly interacting with technology) are used to draw conclusions or inferences ("by zooming out") about the macro-context (e.g. the political and economic environment in which individual practices are situated) (McLean & Hassard, 2004). Because of ANT's flat and radical ontological position, it is less likely to help answer questions about the influence and power of context on technological process. However, this study argues for a pragmatic application of the ANT lens by taking context, particularly institutions seriously. Researchers that have adopted the purist approach in using ANT have been criticised for "symmetrical absurdity" in treating the issue of agency (ability to act) and structure (McLean & Hassard, 2004). In his critique of ANT, Reed argues that ANT tends to:

> …concentrate on how things get done, to the virtual exclusion of the various ways in which institutionalized structures shape and modify the process of social interaction and the socio-material practices through which it is accomplished (1995, p.332).

Scholars have argued that if this flat ontological position is applied in its strict sense, ANT has restricted theoretical applicability (Heeks & Stanforth, 2015; Creswell et al., 2011). As a result, calls that have been made that a deeper analysis of implementation of technological change in developing countries would require that we follow the example of other authors using ANT who have sought to combine it with other theoretical bases, in order to generate greater explanatory power (Heeks & Stanforth, 2015). Prior examples include ANT's combination with systems theory to analyse regulatory policy (Young, Borland, and Coghill 2012) and combination with activity theory to analyse innovation processes (Miettinen 1999). Hence, in arguing for a pragmatic application of the ANT to foreground the role of institutions in network creation and stability, my theoretical contribution was to combine ANT with the Legitimacy

Perspective, an institutional theoretical lens, to help address the former's shortcoming and enhance its explanatory power.

Evidence in this study demonstrates that macro-environmental factors and institutions are particularly important in understanding IT project implementation and adoption in emerging markets because these settings often lack market-supporting institutions (Hiatt & Sine, 2014; Khanna & Phalepu, 2010). Typically, in such a setting, "banks cannot always ensure access to credit; courts cannot guarantee the enforcement of intellectual property rights; auditors cannot reliably certify a firm's financial operations" (p. 2149). Zimbabwe meets that description as some scholars have cited it as an example of a country plagued by "extreme conditions" (Barnard et al., 2017, p.478) which is a consequence of conflict and political and economic mismanagement. It is interesting to find out how a firm from such a setting leveraged organisational legitimation strategies to orchestrate the creation and use of a channel.

Critiques of ANT wonder whether the lens is just narrative and descriptive or whether is it also analytical, even explanatory or predictive. This study makes an argument above that, with the aid of ANT, the study moves beyond the descriptive to the analytical in relation to the formation of networks, the agency of technology and the process of translation. The lens tells an insightful story and illuminates aspects of technological change at the micro-level of analysis that most other accounts side-line. However, it offers relatively little that is generalizable beyond the methodological (the moments of translation framework), and nothing at all that is predictive.

By complementing ANT with the Legitimacy Perspective, this case study generated insights on the role of legitimation strategies in managing non-human actors in the wider context. These elements include social trust, power dynamics and politics in ICT implementation. The study setting provides access to rare insights on such concepts from a case study of a successful creation of a sociotechnical network by a focal actor firm that originates from a context experiencing "extreme conditions". The study is far from being an extreme outlier that has little value to scholarly research because these concepts transcend contexts. The study shows how the focal actor managed to navigate or overcome those market-supporting institutional voids and contextual limitations and rebuild trust and garner legitimacy despite initial cynicism from target allies. Such studies as this one represents an "unusually revelatory, extreme exemplar" which is useful when building theory (Eisenhardt & Graebner, 2007, p. 27).

The findings suggest that, once the focal actor was perceived as legitimate, the emergent mobile remittance network that it underwrote was able to overcome its "liability of newness" and

access resources that increased its otherwise limited chances of survival (Singh et al., 1986). These resources included distribution infrastructure of its partners, subscribers, information and market access, among others. This is consistent with organisation literature, focusing on new venture legitimation, where scholars observe that in order for members of external audiences to afford a new venture with support and resources, they need to firstly perceive that venture as legitimate (Fisher et al., 2016; van Werven et al., 2015; Zimmerman & Zeitz, 2002; Lounsbury & Glynn, 2001).

In those legitimation strategies, the focal actor utilised ready-made socially constructed system of scripts, rules, norms, values, standards, and models that resonated with target allies in order to manage wider context actors like risks emanating from the macro context to garner legitimacy (Zimmerman & Zeitz, 2002). For instance, contextual non-human actors like political and economic risks, social trust, regulation and market-supporting institutional voids emerged from the data. These were managed through legitimation strategies like argumentation and manipulation. Interestingly, participant interviews were conducted without a focus on social structures or legitimacy as topics of inquiry - their importance emerged inductively from the data.

Although never directly asked about social structures or firm reputation, interview participants either mentioned these factors explicitly, or discussed mechanisms and processes related to focal actor's reputation, history of entrepreneurship, financial success, innovativeness or market size. After iterating between the data and the Legitimacy Perspective, I realised that what the respondents were describing most closely matched theoretical conceptualisation of focal actor values and characteristics which are socially constructed.

Consistent with the definition of legitimacy as a social judgment of appropriateness, acceptance, and desirability (Fisher et al., 2017; Kuratko et al., 2017; Zeitz & Zimmerman, 2007), the focal actor particularly leveraged communication approaches such as the use of symbolic management to project itself as a reputable and superior brand that is not only resilient and prominent but also represents superior quality acquired over time. In its communication and that of legitimating audiences, findings reveal that the focal actor touted its untarnished reputation and its industry experience and track record that shows its resilience for which it was recognised through industry awards. Thus, it could be trusted by its target channel partners, including service users. This brings us to the following proposition

6.5.1 Recognised social structures that gave confidence to potential network allies

The focal actor understood that given the trauma suffered by Zimbabweans over the collapse of formal financial services during the hyper-inflation era that peaked in 2008, there was need to convince the market that the emergent network, for which it was a promoter, deserved their trust and would guarantee that remittance recipients received their true value. Hyper-inflation of 2008 had eroded depositors of their savings and pensions. This generated cynicism in the formal financial sector and most migrants resorted to using informal channels for remittances. Therefore, there was high risk perception of the formal financial system. Consequently, the introduction of mobile remittances as an alternative formal channel was confronted with perceived transaction uncertainty (Gao et al., 2017).

The focal actor used symbolic management in order to restore transactional confidence and convince potential allies that the mobile phone-based emergent network was not only simple, easy to use and useful but was also underwritten by a reputable actor that can be trusted. This finding on the utility of symbolic management strategy is consistent with Barnard et al.'s (2017, p. 483) observation that emerging market multinationals are confronted with a plethora of institutional constraints. To reduce perceived risk by potential resource providers "… many of them actively seek a dissociation with the home country by moving their headquarters outside Africa and becoming migrating multinationals". It is not surprising that the global headquarters of the focal actor's parent company moved its location to London to reinforce its quest to be a perceived as a reputable global firm while gaining access to more resources.

Reputation is defined as observers' expectations about a firm's characteristics and particularly its capacity to generate high-quality products and services (Rindova et al., 2005) evident in its previous actions and principally its output quality (Gao et al., 2017). This study adopts Gao et al. (2017) conceptualisation of reputation, from an institutional perspective, as a construct that encapsulates collective beliefs about a firm, which is a product of the evaluation of three elements: brand prominence, perceived product or service quality, and firm resilience.

In concurrence with Rao's (1994) study, participant interviews revealed that the positive collective beliefs about the focal actor as an initiator and sponsor of the mobile remittance innovation was built over a period of time by high-status institutions such as industry analysts, media establishments and certification contests. These institutions engage in evaluations that shape a firm's reputation in the eyes of other stakeholders. In addition, findings reveal that

these positive collective beliefs (reputation) were magnified by the focal actor through symbolic management to attract potential network allies.

Strategy researchers have typically conceptualised reputation as one of a firm's many intangible resources (Gao et al., 2017). Accordingly, in the problematisation phase of the network creation process, the focal actor continually sought to attract potential allies by referencing its reputation as a reason why other actors should align their interests with its own to realise their needs. It mainly used the argumentation strategy since its target allies had a limited appreciation of the technology-based innovation that it sought to introduce in a remittances space hitherto dominated by banks and money transfer operators. It also conformed to industry standards and regulations as well as institutional regulations to garner acceptance.

Consistent with extant scholarship, antecedents of reputation cited in this study include the focal actor's entrepreneurship, market and product growth, financial performance and management practices (Staw & Epstein, 2000). The focal actor further argued that its reputation is a product of its rich history of entrepreneurship, resilience, customer focus and excellence. Potential allies and users in particular recognise its brand name as a signal of quality and value (Herbig & Milewicz, 1995). There is continual name-dropping and reference to the renowned founder of the focal actor in order to convince other actors of its legitimacy. This founder earned his stripes when he fought hard to be granted a mobile network operator's licence and subsequently growing the brand into a big operator in his native country.

The emergent network sought to tape into that positive reputation to attract stakeholders to align their interests to that of the focal actor to create a stable sociotechnical network. In order to foster and preserve this asset (reputation), the emergent network's partner selection and agent recruitment was primarily influenced by the reputation of the target ally in terms of customer service demonstrated by its accessibility and experience in the retail service. Equally, users were enrolled largely because of continual reference being made to the focal actor's positive reputation. Therefore, reputation is a source of power for a firm particularly in negotiations to create mobile remittances sociotechnical networks in uncertain environments as it reduces potential transaction uncertainty and provides transactional confidence.

Research findings suggests that through leveraging its favourable reputation, the focal actor enhanced its bargaining power as it sought to attract allies from the macro-environment in its network creation negotiation efforts. It helped the focal actor realise the potential of its resources (Gao et al., 2017), increase its ability to choose high quality partners (Dollinger,

Golden, & Saxon, 1997) and form alliances (Stern, Dukerich, & Zajac, 2014) and help mitigate the impact of negative events (Love & Kraatz, 2009). Thus, the concept of power is brought to the fore by utilising a Legitimacy Perspective, which is clearly appropriate in illuminating the role of institutions in network creation efforts at a macro level. I offer the following proposition:

Proposition 2a) *A favourable reputation is a potent source of power used by the focal actor to convince potential allies to align their interests with its own.*

Proposition 2b: *In emerging economies a favourable reputation allows a focal actor to circumvent institutional voids and attract allies into a sociotechnical network.*

6.5.2 Power relationships between stakeholders at the micro-level

What ANT and the Legitimacy Perspective could say on how power – acting as a force manifesting itself via individuals, organisational constraints or societal influence – played a role in shaping of the mobile remittances network, is explored because it is implicated as a significant theme in this study. Although power is a widespread feature of social action and interaction, it is often taken for granted or treated as an afterthought rather than integrated as one among a series of central concepts within the context of a socio-material analysis (McLean & Hassard, 2004). For the purposes of this discussion, power is defined as "the ability or capacity to achieve something, whether by influence, force or control" (Roberts, 2006, p. 624).

The work discussed in this study demonstrates that power manifests itself in different ways depending on the level of analysis (i.e. institutional, organisational, and individual) (Doolin & Lowe, 2002). The study findings show that, although it is important, network creation is not only shaped by the internal dynamic interactions (mainly between humans and technology) occurring within the boundaries of the emergent network for which the ANT is used to deconstruct. Rather, is equally highly shaped by the context, including macro-environment (e.g. social structures), in which it is immersed.

As discussed above, the sociology of translation was particularly helpful in shedding light on how power manifested itself at the individual level involving the dynamic human-technology interactions. For instance, the notions of translation and control helped explore how the focal actor orchestrated the creation of a sociotechnical network through engaging in processes of negotiation using different strategies in the interessement and enrolment phases in order to persuade potential allies to join the network and use the technology that facilitates cross-border remittances. Therefore, this study confirmed that the ANT can deepen our understanding of

mobile remittance network creation by foregrounding aspects of power during the dynamic associations, mainly between humans and technology, at the local level of analysis. The findings show that the focal actor developed different strategies to achieve this aim during the interessement and enrolment phases. For instance, the findings show how the mobile remittance system could only register documented users as it only recognised an identity number as the unique identifier thus confirming the essence of treating both human and non-human actors symmetrically as they equally have the ability to exercise control of other actors.

To illustrate the agency of technology, which was also revealed with the aid of ANT, the mobile remittance system would play a resistive role in the event that an undocumented potential user, without an identity card or book, wanted to register for a mobile remittance wallet. The registration process would not take place without an identity number of the prospective user. In addition, the system ensured that mobile remittance individual accounts are password-protected hence it would not successfully complete the transaction if a registered user or imposter entered a wrong password when prompted. Either of these influences, reflecting the power of non-human actors, ended up facilitating or impeding interessement and enrolment.

6.5.3 Politics and power issues stemming from the macro-level of analysis

As stated above, context in this case study can be organisational, national and international. The identification of a "relevant context" (Avgerou (2010, p. 11) is about persuasion and the exercise of power relations in which certain issues are presented as important while others remain invisible (Hayes & Westrup, 2012). The mobile remittance case highlighted how a strong alignment between public and private sector organisations, itself a working out of power relations, was vital to an apparently stable context. This was evident in the relationship between public and private organisations such as the emergent mobile remittance service provider and the Reserve Bank of Zimbabwe.

The Legitimacy Perspective was used to explore how macro actors and macro-actors (such as social structures) might have impacted network creation. Actors stemming from the institutional level significantly shaped the creation of the mobile remittance network at different phases of the network building process. Yet, ANT assumes context to be emergent thus assets that actors and their relations is all that is needed to explore to understand phenomena. The study results challenge this assertion. The study findings revealed that there were more than actors and their relations exerting influence in shaping network creation and use of mobile remittances technology. For example, the ANT could neither amply describe nor

foreground power relationships between the focal actor and other stakeholders from the macro-environment due to its flat ontology.

Doolin (2004) asserts that scholars should not assume that technology simply empowers some and disempowers others. Instead, it ought to be seen as both shaping and being shaped by social relations located in a wider context. As part of my attempt at theory building, the Legitimacy Perspective augmented ANT in order to illuminate the influence of social structures such as norms, standards, values (e.g. social trust and positive firm reputation) in shaping network creation through the legitimation strategies deployed by the focal actor. Accordingly, I argue that the Legitimacy Perspective enriches the ANT account by providing a deeper understanding of how politics and power played a role in the shaping of the emergent network at the macro (societal-related) level. This approach also draws from Friedland and Alford's (1991) assertion that an adequate social theory needs to pay ample attention to both the micro and the macro-levels of analysis to have a better understanding of organisational phenomena and change. This helps to interpret the limiting conditions in relation to power and control that emanate from both micro and macro-levels of analysis that influence behaviour (Doolin & Lowe, 2002).

The study findings show that different audiences have differing standards, rules, procedures, norms and values for evaluating a venture, which needed to be considered by the focal actor during the process of translation aimed at on-boarding them during the translation process. The negotiations, which considered those nuanced needs, gave these audiences significant power in shaping the emergent network. For example, regulators were more concerned with the conformance of the emergent channel with the regulatory regime governing financial remittances while the monetary authorities in Zimbabwe were concerned with not only regulatory compliance but the formalisation of remittance transfers for as many migrants as possible to enhance foreign currency inflows and financial inclusion. Target service users were more concerned with system simplicity and related benefits such as speed, control, convenience and safety. Inevitably, this introduced some tension between actors due to diversity of interests in some instances. Consequently, the focal actor packaged appropriate communication approaches for each of the four moments of translation and each of the interested actants. For example, symbolic management was the dominant tool used with different target allies at the problematisation, interessement and enrolment phases of the translation process, to demonstrate awareness of differing values, beliefs, rules, procedures and standards.

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Unsurprisingly, social trust of the service provider was one of the significant actors to emerge from the macro context as a condition for some actants to enrol onto the emergent platform. It is a foremost value that also acts as an antidote to perceived risk. Accordingly, in the problematisation phase, the focal actor utilised the selection legitimation strategy to identify and on-board reputable channel partners, located at strategic sites, with a wide distribution infrastructure to enhance service access. This was not only to gain the trust of its target allies but also garner legitimacy as a trusted partner. Similarly, in the interessement and enrolment phases, the focal actor largely adopted the conformance strategy by following existing regulations and practices in the payments space to garner trust and legitimacy in the eyes of the target regulators, channel partners and users. By adapting to existing industry standards, rules and regulations, the focal actor promptly acquired legitimacy, which enhanced the pace of subsequent phases – enrolment and mobilisation.

Equally interesting was the finding that imbalances of power became increasingly visible during the different phases of the network creation process. These power imbalances in the organisational, regulatory and business as well as consumer punctualised networks were amplified in the problematisation, interessement and enrolment activities initiated by the focal. This could be attributed to diversity of interests and the intensity of negotiations during those phases. Some actants were more actively engaged in (or definitely more able to actively resist) activities when compared to others. For example, the active role ascribed to technology varied in this case study. While it not given particular prominence, we have seen how technology shapes, enables, co-operates, resists. Subscriber accounts are password-protected. For one to be a subscriber and transact, they had to be registered. Registration needed one to have a valid identity document. The Know Your Customer principle was inscribed in the system to preserve its integrity and the integrity of the broad financial system as a means of preventing money laundering and the financing of terrorism, among other motivation. Therefore, technology, just like humans, was an active actant with interests and power.

There were power imbalances, for instance, between the focal actor and the regulators that arose mainly due to asymmetry in interests. While the former sought to increase access to a mobile-based payment solution to enhance financial inclusion and increase its streams of revenue, the latter was more concerned with reducing risk of money laundering and the financing of terrorism. Consequently, regulators actively resisted the focal actor's efforts to relax regulations around transaction limits and Know Your Customer requirements aimed at enhancing user enrolment to realise financial inclusion. The focal actor responded by lobbying

for relaxation of such regulations to facilitate enrolment of users by invoking financial inclusion of the marginalised migrant population as the main motive. Power imbalances were also manifest between the focal actor and consumers who had limited involvement in decision making on such issues like transaction limits that were prescribed by the regulators to control financial flows. This political manoeuvring and power issues generated tension between concerned actants.

Given the foregoing illustrations, individual users may easily be perceived as relatively powerless while the focal actor and the regulators are powerful. Consumers retained some power as they could influence the stability of the mobile remittance network by sometimes betraying it to use the informal counter-networks such as cross-border bus and truck drivers or visiting relatives once they saw more advantages in those channels. Thus, the theme of power relationships was brought to the fore at different phases of the network creation process and could only be better explained with aid of the Legitimacy lens. Hence, I propose:

Proposition 3a: *A combination of different legitimation strategies are used by the focal actor to stabilise a sociotechnical network across its development phases.*

Proposition 3b: *Legitimation strategies applied by the focal actor during different phases of the network building process help in aligning different actants' interests to those of its own and create a stable sociotechnical network.*

Proposition 3c) *Argumentation and selection legitimation strategies are more effective in the problematisation phase of the translation process.*

Proposition 3d) *Conformance and manipulation legitimation strategies are more useful in the interessement and enrolment phases of the translation process.*

6.6 Sociotechnical network creation is shaped by the surrounding context

In rejecting context, ANT proponents cite Latour argue that "networks are immersed in nothing (Latour, 1999, p. 128). This assertion poses two main problems. Firstly, it undermines a researcher's ability to explore how the nuances of a particular context and its historicity might have shaped network creation. Secondly, looking at ICT implementation and use as taking place within a context generally seen as a static backdrop obscures the highly contextualised nature of sociotechnical network creation. This study challenges ANT's assumption of context as a static, container-like setting where actors interact (McLean & Hassard, 2004). Thus, heeds

that challenge posed by Avgerou (2016) that the message of the importance of context is still neglected or downplayed in many specific applications, technology transfer projects and policy initiatives for the implementation of IS or IT in developing countries.

Hayes and Westrup (2012) aver that the focus of the researcher should be on how a piece of technology, or be it an application or a computer, is used in a specific social, political and cultural context. Context is of the essence in building a stable sociotechnical network. By foregrounding the role and influence of context, this study implies respect for the diversity of social structures, cultures and socio-economic conditions and the manner and significance of the appropriation of technologies by people in their local situation.

Despite ANT and the Legitimacy Perspective holding contrasting (but complementary) views towards the notion of context itself (ANT highlights its emergent nature and the Legitimacy Perspective assumes its institutional nature) the two approaches help look beyond the understanding that network creation and particularly enrolment can be solely explained on the basis of what occurs within the boundaries of an emergent network. The findings reveal that looking beyond the boundaries of an emergent network can provide new light to better understand the use and adoption of technologies.

By complementing ANT with the Legitimacy Perspective an understanding of how context surrounding potential network allies influenced their enrolment into the network was amplified. The Legitimacy Perspective helps look at context not only as a container in which potential network allies exist, but also as dynamic and historically-shaped. For instance, the history of the hyper-inflation era in Zimbabwe entrenched distrust of the formal financial system. Anything linked to banks (that had eroded value of depositors' savings invoked bad memories and trauma for remittance senders and recipients alike. The research findings reflect a palpable trust deficit in any bank-linked remittance channel, yet banks should ordinarily engender trust. By studying the role of context with the aid of the Legitimacy Perspective, the study was able to establish how historical contextual factors, and not the perceived complexity of the technology, impeded enrolment of users in particular into the new network.

The example of attempts to implement the M-Pesa mobile money model in South Africa are instructive. The sociotechnical network or "web of computing" (Orlikowski & Iacono, 2001, p. 126) from Kenya, could not be replicated in the South African context. Researchers ascribe this failure of the M-Pesa mobile money model in South Africa to the country's vastly different social context in which the system has been implemented in South Africa (Avgerou, 2016;

Hayes & Westrup, 2012). Accordingly, social context plays a "significant role in influencing the ways that people use information technologies … (Kling, 2000, p. 225).

The study reveals that implementing the sociotechnical network of mobile remittance is concerned not only with the mobile money technology itself, but also with the environmental context within which the focal actor orchestrates the creation of this network. Aspects such as the social context (e.g. crime rate in South Africa), the existence of alternative formal and informal remittance channels, the availability of different communication media, and the economic and political situation in the recipient country have been found to shape the emergent sociotechnical network of mobile remittances. Consistent with this finding Walsham et al. (1988) observed that the development and routine operations of computer-based technologies hinges on many human judgements and actions often influenced by political interests, structural constraints and participants definition of their situations.

Right from the problematisation phase, contextual factors stemming from national, regional and even global concerns influenced the approach of the focal actor. The focal actor believed that a similar context to the one in the home country, that had delivered tremendous success for it, would be encountered when mobile money technology was extended to facilitate cross-border remittances. The reality was different. Attracting mobile money technology users in a context in which the technology had difficulties in gaining traction was always going to be difficult.

It would later learn that a predefined problematisation that derived from the Zimbabwe, Kenya, Tanzania mobile money success was necessary but not entirely appropriate. Hence it encountered context related challenges in South Africa that impeded agent and user interessement and enrolment initiatives. These include fear of crime that impeded its agent recruitment drive to replicate its Zimbabwean service distribution model and regulatory constraints like the denial of an operating licence due to a much more stringent regulatory regime that eventually forced it to conclude partnerships to build a channel thereby forfeiting power and some level of control and influence.

In another striking example, the findings showed how the shortage of cash in Zimbabwe undermined the ability of the technology to become indispensable to other actors (i.e. consumers). This illustration demonstrates that uptake was not just a function of the applications of the technology itself, but also included actors (e.g. monetary authorities in Zimbabwe) located in the context where the technology was introduced. Therefore, in the light

of ANT, the low level of enrollment was not fully explained by the inability of the mobile remittance technology to further develop its internal applications, or by the low user activity taking place on the platform. Instead, enrollment was also seen as being shaped by the relations developed between actors within and across networks and also determined by events and situations that occurred in the context where potential allies (e.g. users) resided.

The findings also show how the existence of competing and disrupting actors (e.g. technologies and other formal and informal remittance channels) played an influential role in the shaping of the enrollment of allies by interfering in the development of strong relations between human actors and the mobile remittance technology. Similarly, and by looking at the context surrounding the potential allies, the findings show how despite negotiations or even manipulation taking place, and strategies being developed to persuade consumers or potential agents to enrol onto the network, the focal actor failed to interest some actants to do so. I, therefore, propose:

Proposition 4: *Institutions constrain the interests of network actants across the different translation phases in the sociotechnical network building process.*

6.7 Proposed Model

Prior ANT-based doctoral dissertations have hardly used a conceptual model to illustrate their theoretical contributions (e.g. Noruwana, 2015; Rivera, 2013; Booth, 2013). Given that the object of this study is to build theory, below is a proposed mobile remittance network creation framework that illustrates the role of social structures (mediated by legitimation strategies), which are hardly foregrounded in previous ANT-based studies owing to ANT's flat ontology.

Figure 6.3 shows the translation process characterised by different phases that human and technology go through in their dynamic interactions to align their interests with those of the project initiator and attain network stability as illustrated by Callon (1986). However, it is important to highlight that the translation process is far from being linear and sequential as depicted in the conceptual model for analytical reasons. In fact, the process is characteristically a complexity of overlapping, iterative technology-related activities (Heeks & Stanforth, 2015). Significantly, while the different phases of translation denote some division, this study established that they are to large extent arbitrary as they are all interrelated.

Different legitimation strategies, drawn from institutional theory, are used at each of the four stages to influence local interactions during the four moments of translation. These legitimation

strategies combine actors stemming from the institutional environment and the dynamic local human-technology interactions that occur during the translation process. The ANT's forte is foregrounding the agency and relations between both human and nonhuman elements as essential actants that lead to assemblage of networks through the notion of translation. The moments of translation generally provided the structural framework for the case chronology. For example, we have seen how translation shifts the goals of a particular group such as the focal actor's interests in end-to-end channel control were altered by the regulator to conclude partnership agreements with other players who had the ADLA licence and align with the channel re-design. Equally, we have seen how translation can shift identities during technological change: erstwhile cross-border couriers were transformed from a group that only dealt in informal cash-based remittance, to be a group that facilitated mobile remittance by signing on as agents of the emergent mobile remittance channel. And we have seen how translation shifts the network of relationships: the traditional money transfer operators such as Western Union and MoneyGram moved from being rather isolated to being integrated and a part of a concerted digital actor–network that involved most of the other remittance actors to formalise these flows.

Therefore, the translation process exposes the way in which the interests of particular actors in a technological change project can be changed over time. It also reveals how actor identities and relations can be changed. Likewise, it exposes how ideas move and change. That is, ii brings to the fore not just that these things change, and in what way they change, but also how it is that those changes come about, and how they relate to a technology project's trajectory. Thus, through the classification of these phases (and other acts of translation such as dissidence and de-enrolment), we also get a specific sense of what we might call the 'political tactics' that arise during that trajectory. It spotlights activities, which without ANT, would likely be obscured, and would not be understood in this way. That said, I argue that theoretical resources from the ANT alone are insufficient to provide a complete account of the processes whereby relatively stable networks of aligned interest are created and maintained or alternatively to examine why such networks fail to establish themselves. Social structures play a role in the stability (or lack of stability) of a sociotechnical network (Walsham, 2017) hence they ought to be taken seriously and amply foregrounded.

From a macro perspective, institution theory is lauded for foregrounding the nature and role of social structures in IT implementation. However, it is criticised for providing little detail on individual agency and the detailed process of change at the micro level (Walsham, 2017).

Consistent with the illustration in the conceptual model, this study argues that the two theories provide a rich account of the creation of a sociotechnical network if used to complement one another and, indeed, such an argument is made in Walsham (2017) and Avgerou (2002). Hence, while legitimation strategies play a mediatory role, they spotlight the impact of social structures in the creation of sociotechnical networks that the ANT would ordinarily obscure.

The Legitimacy Perspective was utilised to augment the ANT in, for example, explaining the role and impact of contextual actors that include focal actor social trust, power, regulatory, political/economic dynamics and other contextual actors coming from the wider context. Political and economic factors in the remittance destination (Zimbabwe), where recipients use the technology, include policy inconsistency, trust and confidence deficit in formal channels like banks, shortage of cash and high levels of mobile money technology use. Likewise, contextual conditions in the remittance source country - South Africa – which impinge of the stability of the sociotechnical network of mobile remittances include an advanced formal banking system, high incidence of undocumented migrants, high crime levels and limited appreciation of mobile money after the failure of M-Pesa. The contextual setting also includes strict industry regulation to mitigate incidences of money laundering and combat financing of terrorism. **Figure 6.3: Proposed conceptual model**
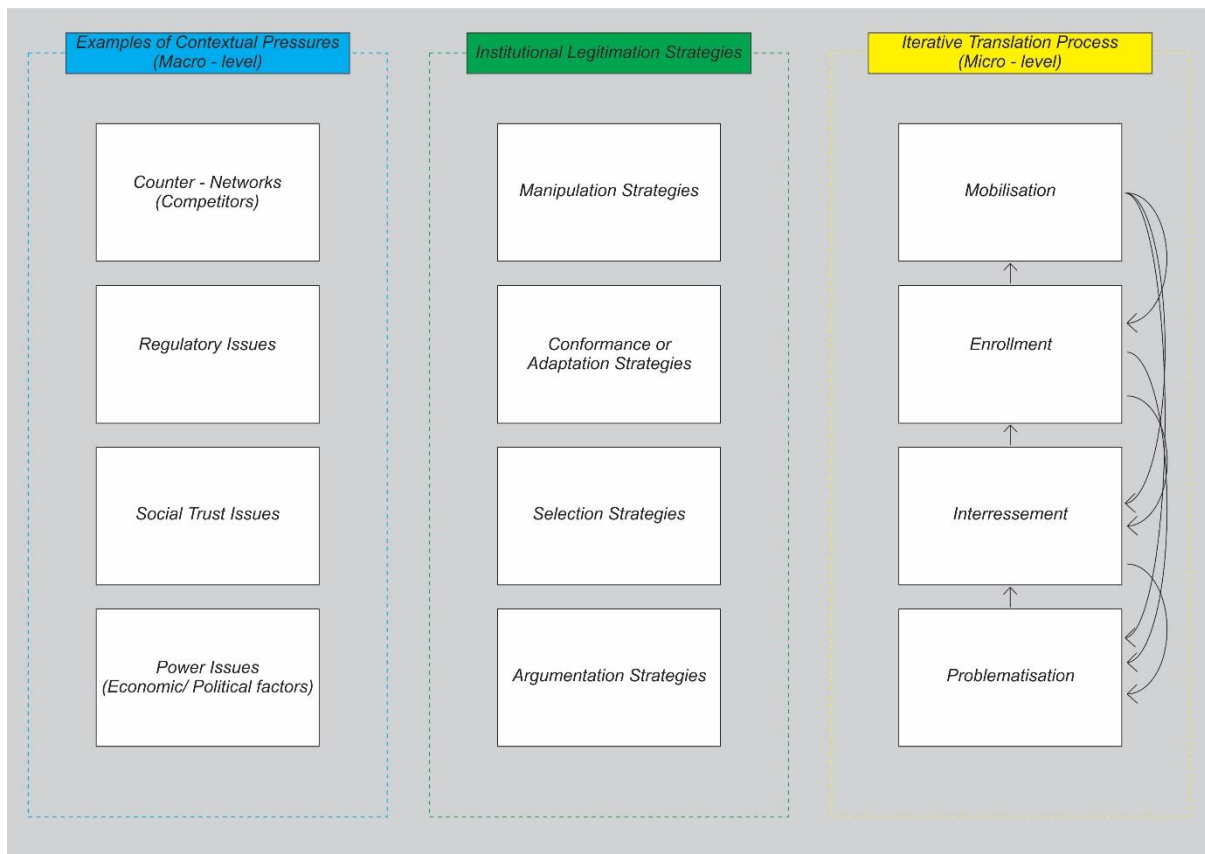
The conceptual model shows that a hybrid of legitimation strategies is used to mediate between local level interactions and individual actors and networks emerging from the broad context. These actants and networks include resources, regulation, competition, power issues (political and economic actors), and social trust issues (stemming from history of financial services in Zimbabwe). The case study showed that the focal actor adopted different communication approaches to garner legitimacy from diverse macro-environment constituents during the different phases of the moments of translation. A summary of propositions is provided below:

Proposition 1a) A sociotechnical network is forged by aligning interests between human and non-human actants at both the micro and macro levels.

Proposition 1b) Sociotechnical network's stability is maintained or undermined by diversity of actor's interests during the process of translation.

Proposition 1c) The extent of actor cohesion, competition, betrayal, and resistance is likely to determine the level of robustness of a sociotechnical network.

Proposition 2a) A favourable reputation is a potent source of power used by the focal actor to convince potential allies to align their interests with its own.

Proposition 2b: In emerging economies a favourable reputation allows a focal actor to circumvent institutional voids and attract allies into a sociotechnical network.

Proposition 3a: A combination of different legitimation strategies are used by the focal actor to stabilise a sociotechnical network across its development phases.

Proposition 3b: Legitimation strategies applied by the focal actor during different phases of the network building process help in aligning different actants' interests to those of its own and create a stable sociotechnical network.

Proposition 3c) Argumentation and selection legitimation strategies are more effective in the problematisation phase of the translation process.

Proposition 3d) Conformance and manipulation legitimation strategies are more useful in the interessement and enrolment phases of the translation process.

Proposition 4: Institutions constrain the interests of network actants across the different translation phases in the sociotechnical network building process.

6.8 Conclusion

This chapter has integrated my findings (outlined in Chapter 5) with the more recent literature and theoretical frameworks. The translation process in the ANT and its different phases identified in my review of related literature continue to be important yet very arbitrary and all interrelated. The translation process is highly recursive and largely aids in describing the micro or local level interactions between humans and material elements that are part of the elements that make up the sociotechnical network of mobile remittances. Equally, I outlined how the Legitimacy Perspective seeks to complement the ANT by introducing the capability to examine macro-environments and highlight the role of broad social structures that invariably influence the local interactions, particularly the role of the contextual economic and socio-political factors in the context of implementation. By examining both the macro- and micro-environments, my findings help explain why the implementation and adoption of the mobile remittance technology progressed slower than anticipated. There were particular challenges associated with the macro-environment which had significant consequences for technological design, adoption and spread across organisations.

CHAPTER 7

CONCLUSION AND RECOMMENDATIONS

7.1 Introduction

This chapter provides a summary of how all the work described in this thesis fits together, demonstrating how the objectives of the study were met, that the research questions were answered, and that a valuable contribution was made. I start by discussing how the study objectives were addressed. I then discuss how the study contributes to existing knowledge in the field of international remittances and social studies of technology. I continue by discussing the practical implications of the research and in the penultimate segment, I address the limitations of the study and directions for future research.

Recap of study objectives

The objectives of this study were to:

1. Describe how the mobile remittance sociotechnical network has been created.

2. Identify and establish the utility of the legitimation strategies during the different phases of translation in the network building process.

3. Describe the human actors' perceptions and interpretations of the emergent actor-network and how they inform the choice and application of legitimation strategies.

The review of related literature was anchored on these constructs: actor network theory, legitimacy perspective, mobile remittance network, organisational legitimation strategies and sociotechnical network translation phases. This study applied the Actor Network Theory (ANT) which was augmented by the Legitimacy Perspective to enhance its explanatory power after the former was criticised for solely addressing local effects while paying little attention to broader social structures that influence the local (Walsham, 2017; Both et al., 2016; Creswell et al., 2011; Reed, 1995). The gap identified in this study is that because of ANT's flat and radical ontology, researchers utilising the lens tend to minimise the role of social structures in the shaping of local phenomena during the creation of sociotechnical networks.

The focus of this study was on pragmatic application of the ANT approach with a view to foreground the role and impact of social structures in the creation of sociotechnical networks. This was a response to the call by several scholars (e.g. Walsham2017; (Booth et al., 2016;

Creswell et al., 2011; McLean & Hassard, 2004; Reed, 1995) who argued that ANT's flat ontology is a limitation that leads to researchers ignoring the existence of context or obscuring its relevance hence failing to fully account for all factors that can facilitate or impede a network's quest for stability.

In rejecting the existence of context, ANT purists cite Latour (1999) when claiming that "networks are immersed in nothing" (p. 128). Thus, critics of ANT cite its inability to generate insights on how social structures shape local action. I argue that assuming this position undermines our ability to explore how the nuances of a specific context and its history shapes sociotechnical assemblages like the emergent mobile remittance system. Hence, my pragmatic approach to the application of ANT. I complemented the ANT with the Legitimacy Perspective to explore how a focal actor uses different legitimation strategies at different translation phases of creating a sociotechnical network. The Legitimacy Perspective draws from organisational legitimacy which has its roots in institutional theory (Suchman, 1995). This complemented the ANT's explanatory power in addition to its well-documented descriptive strength.

The study employed an interpretive case study research design, primarily generating empirical data through 24 semi-structured qualitative interviews that were complemented by field observations and archival data. Face-to-face interviews were first conducted with the focal actor's representatives to identify the intent of creating the mobile remittance channel and how the interests of particular actors in this technological change project were changed over time as well as how their identities and relations were changed across the four moments (phases) of translation (problematisation, interessement, enrollment and mobilisation).

After establishing the focal actor's intent, different potential allies targeted for enrollment onto the platform (e.g. regulators, business partners and target customers) were approached to explore how they experienced the different focal actor activities (strategies), which include argumentation, selection, conformance and manipulation. The case study revealed that these range from communication through negotiation, to bargaining (argumentation), political tactics, manoeuvring (manipulation), subterfuge and threats (strong-arming) for conformance. Most of these strategies were used by the focal actor in combination to enrol potential allies onto the mobile remittance platform.

The main purpose of this chapter is to present the final conclusions of this research. The chapter starts with conclusions on the study's research questions. The three main contributions of the

study to theory, methodology and practice are then articulated. Recommendations for future research conclude the chapter.

7.2 Conclusions on research questions

Investigations into the research questions that this study set out to answer are concluded as follows:

7.2.1 Research Question 1: The creation of a mobile remittance sociotechnical network

The first research question was: *How has the mobile remittance network been set up?* The core focus of this question; asking if the case study based on the ANT, augmented by the Legitimacy Perspective, has told us something about the creation of a sociotechnical network that other accounts would not. As the anchor theory used for data generation and analysis, ANT allowed me to provide an account of technological change that focuses on a single case study – the introduction of new mobile based remittance technology onto the South Africa-to-Zimbabwe corridor – and which uses a particular fraction of ANT ideas: moments of translation. This description is availed in Chapter 5: Analysis of Findings, while a discussion is provided in Chapter 6: Discussion of Findings.

Through the ANT lens, I was able to elicit insights into the mobile remittance sociotechnical network creation and its complexity. Therefore, network creation involved: a) a process where human and non-human actors (technologies, concepts, regulations, events etc.) with diversity of interests were identified; b) a process having a relational and emergent nature; c) a political process based on negotiations, persuasion and strong-arming; d) an evolving process characterised by tensions between the actors involved; e) a process where technologies were seen as active actants with interests and thus possess the ability to enable, constrain, and resist others' actions.

While the mobile remittance case study emphasises less on *why* things happen than on *how* things happen - by tracing actors and relationships using the ANT- the main argument of this study is for researchers using the ANT to apply the lens in a pragmatic manner in order to also take social structures seriously in the creation of sociotechnical networks to aid technological change. Hence, my contribution to theory was to import legitimation strategies from management and organisation literature and deploy them to complement the ANT by foregrounding the role and impact of contextual factors in general and more specifically social structures (hitherto obscured in ANT-based sociotechnical accounts).

Contrary to ANT assumption that there is no context but actors and their relations (Latour, 2005), I highlighted that that sociotechnical network creation should not only amplify its relational and emergent character, but also that it is a context-dependent phenomenon. Hence scholars who seek a better understanding of sociotechnical network creation ought to take institutions that emanate from the larger context, seriously. I have demonstrated in the case study that the focal actor utilised a combination of legitimation strategies to mediate between local human-technology interactions and the broader context in which these local effects evolve. These legitimation strategies include argumentation, manipulation, selection and conformance. While these strategies are high-level in character, various activities related to these strategies were particularly identified and matched with the strategy in line with how they were operationalised for the study (see Chapter 3 section, 3.5.2).

I also showed how network creation was shaped by the historical context in which the technology was introduced, counter-networks (competition), resource availability, regulatory issues, macro-economic and political factors (power issues), social and mainstream media, social factors (e.g. trust), among other actors emerging from the broader context. The influence of these actors were controlled through legitimation strategies packaged as different communication approaches for each of the four phases of the moments of translation. For example, I demonstrated that symbolic management is one such communication approach that sought to spotlight the focal actor's positive reputation for it to promote acceptance of the new venture that it was creating among both internal and external potential network allies.

This retail payment system had to conform to global and local financial standards. Hence, I showed that the focal actor ensured that the new remittance system complied with the Paris-based Financial Action Task Force (FATF) recommendations to guard against money laundering and funding of terrorism, which meant enforcement of policies such as the Know Your Customer (KYC) requirement. Failure by the emergent channel to comply would attract penalties that could see both South Africa and Zimbabwe being excluded from the global financial system making it difficult for them to remit and receive foreign payments.

The focal actor faced a host of challenges. I showed that theoretical resources from the Legitimacy Perspective helped to understand how, when the mobile remittance channel was introduced, the availability of existing formal and informal channels and specifically the embedded use of cash-based methods within remittance practices prevented target users from enrolling onto the new platform. For example, the case study found that there were existing

formal and informal channels that were extensively used by Zimbabwean migrants. I found that remittance practices such as the use of couriers known as "Omalayisha" are highly socially embedded. That significantly impeded enrolment of target users.

I stated that remitters found it difficult to break their old socially accepted routines and habits associated with remittances. This is because adoption of the mobile remittance channel did not fit the taste of existing remittance practices, habits and routines and in turn some potential users ignored the use of the mobile remittance technology. This was attributed for instance, to how migrants, due to their time constraints faced in a day-to-day basis, preferred the use of "Omalayisha" because of their door-to-door pick and drop practice, which was convenient for both remittance senders and recipients.

I found that when scripting remittances, research participants perceived this money as a symbol of love, care and sacrifice consistent with a communal culture. Interestingly, "Omalaisha" have been associated with those scripts. In contrast, the mobile remittance system was not perceived as the appropriate forum to develop a sense of community or to support the emotional dimension of remittance practices. That impeded enrolment as some migrants could not register on the new platform because they were undocumented hence could not satisfy the KYC regulatory requirements. Such constraints did not exist with "omalaisha".

Given the foregoing, the Legitimacy Perspective was introduced to explain how the focal actor sought to counter such socially embedded competitors by legitimating the emergent network. My contribution was to highlight how theoretical resources from the Legitimacy Perspective helped in looking at network creation as: a) shaped by context surrounding the target users (remitters and recipients); b) an emergent but also historically-shaped phenomenon; c) a social (i.e., collective) engagement; and d) a dynamic process. These insights are further explored in the ensuing segment. This in turn, provided an insightful interpretation in which the nature of sociotechnical network creation was observed.

I have demonstrated that the two perspectives taken in this research help enhance our understanding of a mobile remittance network creation by paying attention to what previous studies – mainly informed by adoption lenses – have obscured. Through a pragmatic application of ANT, I have shown that such a sociotechnical network a) is not solely shaped by individual motivations, decisions and interests, rather it is a) relational and collective endeavour; b) neither a static nor a one-time wonder, but is dynamic and is shaped by history; and, c) it is also highly shaped by the context in which it is immersed.

As a result of their complementary perspectives, below is a summary of unique contributions and insights offered by my pragmatic application of the ANT lens in combination with the Legitimacy Perspective.

Insights offered by the four moments of translation on network creation

The translation concept shaped the whole conceptualisation and composition of the case study. The process helped me expose the way in which the role and interests of particular actors in a technological change project can be modified over time: how their identities and relations can be changed. It also helped me show not just that these things change, and in what way they change, but also how it is that those changes come about, and how they relate to a technology project's trajectory. Through the categorisation of the four moments we also gain a specific sense of what we might call the 'political tactics' that are utilised at both micro- and macro-levels during that trajectory; activities which, without complementing ANT with the Legitimacy Perspective, would likely not be brought to the fore, and would not be understood in this way.

While at a general level the moments provided the structural framework for the case chronology, in practice, the process is highly recursive. That said, we have seen how specifically translation modifies the goals of a particular group: for example, how regulators made the focal actor to radically alter its initial entry strategy and adopt partnerships because it could not secure the ADLA licence. Subsequently, its distribution model had to align with the project re-design. Equally, the concept of translation demonstrates how identities of actants may be modified during technological change. Some of the traditional cross-border couriers were recruited as the focal actor's agents to attract their loyal clientele to the new channel. Likewise, we notice how translation shifts the network of relationships: the money transfer operators moved from being rather isolated competitors to being part of the mobile remittance ecosystem as the focal actor enrolled them as partners and went on to integrate their systems so that it could disburse remittances sent through these partners through its mobile remittance infrastructure to the recipients in Zimbabwe. Below are a few insights highlighted from using the ANT's four moments of translation in the creation of the mobile remittance assemblage.

a) **Mobile remittance network creation as a process having a relational and collective nature**

The use of the two lenses in combination has opened up the process of sociotechnical network creation and technological change to detailed scrutiny. For example, ANT has spot-lighted individual human and non-human actors and revealed their role and relationships in the creation of sociotechnical networks and technological change at the local or individual level. Figure 5.2 illustrates the significant punctualised subsets that emerged in the case study to constitute the mobile remittance network. Further scrutiny of the deconstructed punctualised focal actor subset reveals that it comprises the board of directors, top management, project team, employees and the mobile remittance concept; the regulatory and business punctualised subset comprises regulators and business or channel partners; and the third subset comprises users who are the focal actor's agents and service consumers (remitters and receivers) while the technological sub-set mediates the relationships of these punctualised networks.

With the aid of ANT, the identification of sub-sets or punctualised networks, that make up the mobile remittance network, and the granular description of their micro level interactions and eventual actor enrollment onto the emergent network serves to foreground the relational and collective view of sociotechnical networks. Based on the ANT's relational ontology, this characterization of ICT constellations provides an alternative to the individualistic perspectives on technology as projected in adoption literature. The creation of the mobile remittance network was thus determined by "relations" between actors, which was developed and maintained during the translation process. Thus, network creation has been portrayed as a relational process.

While ANT was invaluable in projecting nuances of actor relationships at the local level of interaction, the Legitimacy Perspective helped to shed light on unique cultures, institutional rules or political motives (Ramadani, Kurnia, & Breidbach, 2018) that impinge on those interactions. The legitimation strategies were then deployed to ensure that the emergent network recognised and managed those actors originating from the larger context thus augmenting ANT by providing insights from the macro-level of analysis.

My findings also show that the technology designed and used as part of the emergent network was also a product of negotiations as evidenced by the changes effected in response to user feedback. I show the ability of technology to strengthen relations with human actors who could further develop its components and promote its use helps to stabilize the sociotechnical

network. Therefore, rather than solely understanding network formation based on motivations and actions of individuals, the importance given to relations between both human and non-human actors (i.e. technology) has shown how such elements are used only when successful negotiations between actors occurred. Crucially, and consistent with findings from previous studies (e.g., Heeks & Stanforth, 2015), I have demonstrated that focus on relations between actors is not limited to interactions between human actors but also extends to non-human actors.

b) Sociotechnical network creation spotlights the agency of technology

The sociology of translation, as articulated in ANT's principle of general symmetry (see section 3.4.1), has been insightful in demonstrating the role of technologies as active entities with interests, rather than neutral and inert actors. ANT spot-lighted the active role attributed to technology and demonstrated that it may vary. But even in this case study – where it was not given particular prominence – we have seen how technology is an active actant with interests hence it shapes, enables, co-operates and resists. Contrary to passive materiality that just seeks to recognise the importance of material objects in technology implementation projects, in this account technology is brought to the fore in a way that other theories do not.

While the mobile money software that supported migrants to remit is a non-human actor subject to control by others, I have shown that it simultaneously can exercise control over others because it has inscribed interests. For instance, the instantaneous feedback by the system in the form of a Short Message Service (SMS) on the sender and receiver's mobile phone providing the status of a transaction promoted confidence and trust in the system. Equally, accounts are password protected to prevent unauthorized access to the system. Hence, enrolling on the network was influenced by the actions taken by the software.

By treating human and non-human actors (like technology artefacts) symmetrically, ANT helped illuminate how technology as an actor had the ability to constrain others and at the same time be subjected to the control of other actors. This understanding would be flawed or impoverished if this account were only to focus on the human actors. By recognising the agency of nonhuman actors in network development through ANT, we gain deeper insights. For instance, the findings showed how some technologies would play a resistive role thus reflecting the power of non-humans. Because the mobile remittance system was configured to enforce daily and monthly transaction limits for a single account, attempts to exceed that limit were futile because the technology would not allow it. These system inscriptions were meant to

enforce compliance with regulatory requirements in order to curtail illegal activities such as money laundering or financing of terrorism.

c) Sociotechnical network creation entails political processes

Avgerou (2002, p. 61) asserts that "the process of translation that builds and changes networks is political in nature". ANT and the Legitimacy Perspective have been useful in shinning some light on political processes involved in the creation of a sociotechnical network. The term "political" in this context means serving particular interests and not others (Introna & Whittaker, 2006). These interests are, given the nature and purpose of mobile remittance system, often economic and social in character. Thus, sociotechnical network creation constitutes a complex set of power relations within and between regimes of truth that the focal actor must learn to negotiate. Politics particularly manifests itself in the translation process, which entails the configuration of a multiplicity of relationships between heterogeneous actors, often with diverse and conflicting needs.

The findings show that, for example, regulators insisted that the focal actor enforces the Know Your Customer, Anti-Money Laundering (AML) and Countering the Financing of Terrorism (CFT) rules that governs the financial services sector in order to comply with recommendations of the Paris-based Financial Action Task Force (FATF). While the focal actor may have noticed that adhering to the KYC requirement meant excluding some undocumented migrants, it had to adhere to the FATF regime of truth that is the custodian of the global financial system and where it seeks legitimacy. Accordingly, the KYC requirement was inscribed in the mobile remittance technology, which meant that the system "resisted" to register subscribers who did not have valid identity documents thus excluding them from opening a mobile remittance account. Thus, a significant number of undocumented migrants was excluded and had to rely on using other migrants' accounts to transact on the platform. Hence, the study shows that network stability is not so much an indication of successful negotiations and alignment of actor interest with the focal actor but also evidence of coercion to comply with governing institutions. This vividly brings to the fore the utility of legitimation approaches such as the conformance strategy used by the focal actor to limit censure and garner acceptance.

Interestingly, these examples are a reminder that actors at both micro (local) level (e.g. technology and users) and macro level (e.g. regulators and regulations) are central to the mobile remittance story and a lot of horse trading occurs to align diverse interests and realise network stability. The study recorded actions and interests of not just organisations (groups of people)

– such as the money transfer operators and MNOs, the consultants or the government officers – but, at times, of individuals: the founder of the mobile money unit, the Project Leader, Business Development specialist, the Sales Executive, individual and service consumers.

Sociotechnical network creation highlights power issues at the micro and macro-level of analysis

I highlighted in the study that the process of sociotechnical network creation is a political process that is also a context-dependent phenomenon. Translation is particularly political in terms of how power is transacted by those actors in order to try to have their particular interests met through the creation, expansion and stabilisation of a network of perceived aligned interests (Heeks & Stanforth, 2015). For this discussion, power is defined as "the ability or capacity to achieve something whether by influence, force or control" (Roberts, 2006, p.625).

We have seen how the focal actor failed in its attempt to push through a mobile remittance channel model of its initial choosing. This was due to its failure to secure a licence (a regulatory requirement) to control the channel from end-to-end. However, once the focal actor was willing to abandon its attachment to a particular channel strategy and leverage what one could call 'soft power' techniques of negotiation, bargaining and transfer of ownership (though also threats of resource withdrawal), it was able to conclude partnerships and achieve its broader interests in introducing remittance technology to formalise these flows.

Equally, I argue that the ANT and the Legitimacy Perspective helped to foreground the role of power in the shaping of the emergent sociotechnical network within micro- and macro-levels of analysis. Specifically, the Legitimacy perspective was adopted to illuminate power issues stemming from the institutional level, most often not problematised in ANT-based accounts. It helps shed light on how macro-actors such as regulations, standards, norms and practices in the remittances space shaped actor interactions at the local level. For instance, risk management standards in the retail payments space compelled the focal actor to comply with ALM, CFT and KYC tenets. Consequently, confidence and trust were generated when the focal actor conformed to set industry and sector prescripts, which enhanced network stability.

d) Sociotechnical network creation highlights tensions between actants

The dynamic interaction of actants during the network creation process created tensions between actants. I found that the notions of translation and control are critical to examine the tensions between the actors involved. This process was characterised by competition between,

resistance from, and betrayal (dissidence) of actors. Consequently, this local interaction between actors either impeded or facilitated eventual stability (or lack of it) of this heterogeneous network. The tensions emerged from different sources (e.g. those initially supporting the implementation of the mobile remittance system; those persuaded to adopt the technology; those disrupting actors against adoption.

I also found out how the focal actor persuaded informal cross-border couriers to enroll into the emergent network thus reducing competition. However, intermittent tensions erupted as these agents would sometimes betray this formal network and assume the role of competitor by offering their informal remittance services during instances of currency volatility and cash shortages in Zimbabwe. Another example of betrayal is when the initial Chief Executive Officer of the emergent mobile remittance network, who crafted and drove the strategy to extend mobile money to facilitate cross-border remittances later abruptly resigned and left to establish and head a competitor mobile money service. Interestingly, some of these tensions could be traced back to obtaining contextual conditions.

My findings also show how different strategies were designed and deployed over time to de-escalate tensions and interest actors in adopting the mobile remittance channel. Each of the first three phases of translation demanded different approaches to communication from the focal actor in view of the heterogeneity of the actors and their interest. For example, communication during (and after) enrolment was focused on stabilisation of the new relationship through inscription in a medium with some permanence, such as documents and software. Beyond that, in the post-enrolment stage, the focal actor needed to monitor the actor-network to ensure that successfully enrolled actors that may have become dysfunctional due to changes in the surrounding network did not remain irreversible but, instead, were problematised, convinced again, and then re-enrolled. While some actors were consistently reluctant to enroll into the network, others posed less resistance and were successfully persuaded to do so, albeit only temporarily in some instances. Consequently, marketing initiatives using social and mainstream media were deployed in this regard.

7.2.2 Research Question 2: Legitimations strategies used across the different translation phases

The second research question was: *What are the legitimation strategies used and how do they play a role during the different stages of translation in the network building process?* This was as a response to the call for a combination of ANT with a theory of social structure to amplify

the role and impact of the larger context in sociotechnical network creation. Context, in this case, may be organisational, national or international. Earlier ANT-based studies were criticised for obscuring the influence of context during network creation. The role of actors such as competitors, regulations, practices, political and economic issues as well as resource-related issues originating from the macro-environment in which technology is introduced and used are invariably concealed.

ANT assumes that context is emergent and that there is no such thing as society and only actors and their relations is all that is needed to explore to in order to understand phenomena (Creswell et al., 2011). Hence, question two sought to foreground the role of other non-human actors in the wider context that are often concealed in ANT-based studies, yet they are critical to the stability of an ICT implementation. Recognition of social structures by a project initiator, particularly when risk perception is high render some comfort to the target groups. I established that the focal actor leveraged its positive reputation, management team's experience and its history of success in similar ICT implementations to acquire legitimacy. Its communication thrust and activities were meant to send a message to its target audiences that "you can trust us to deliver!" This signal is a norm with successful business ventures.

It was denied a licence and had to conclude partnerships with some of its competitors and ride on their licences to create the channel. The licence became an active non-human element of the network. This inflection caused by context is important in understanding the trajectory of the mobile remittance network. Equally influential was the history of remittances along this corridor as well as the socio-economic differences between the remittances source and destination countries. Accordingly, the ANT was successfully augmented by the Legitimacy Perspective as a means to address the problems of its flat ontology (Walsham, 2017). The latter was particularly utilised to illuminate the nature and role of different strategies used in combination by the focal actor across the translation phases to enhance acceptance of the new remittance channel.

As technology-based corporate actors are increasingly conscious of the risks that could result in losing the corporate license to operate, legitimacy, the social acceptance of corporate practices, is regarded as a critical resource for the survival of old corporations and new ventures (Kuratko, Fisher et al., 2017; Fisher et al., 2017; Zimmerman & Zeitz, 2002; Ashforth and Gibbs 1990; Suchman 1995). As a new venture, operating in two jurisdictions, the case study particularly needed legitimacy for continuous flow of resources and for securing the sustained

support of the venture's diverse constituencies. I established that firms that facilitate international remittances are inevitably confronted with heterogeneous expectations from different stakeholders and have to deal with various legal and moral requirements along supply chains: host governments want the company to comply with local laws and morals and to provide investments and jobs, channel partners are investors in expectation of a return on investment, employees want to work at a reputable organisation and earn high salaries, customers want value for money, the public wants companies to comply to social and environmental standards, the media critically scrutinise the behaviour of service provider, and workers at the suppliers simply want jobs to earn a living. The demands these publics pose are oftentimes incompatible with each other and constitute a threat for corporate legitimacy (Scherer et al. 2013).

In facilitating international remittances between South Africa and Zimbabwe, the emergent channel had to embrace multiple jurisdictions, different moral and cultural norms, and other heterogeneous human and non-human stakeholders. Inevitably, this institutional complexity would pose challenges to the stability of the network hence the need for legitimacy. I demonstrated that to manage legitimacy, a sociotechnical network needs to accept and build upon its complex institutional environment. Instead of fighting contradictory institutional demands, corporations, like the focal actor, could welcome the enabling, capability-building and change-facilitating nature of institutions and design organisational structures and procedures that are suitable for channelling and coordinating institutional demands.

I concluded that under conditions of heterogeneous and contradictory institutional complexity a sociotechnical network is likely to apply different legitimation strategies at the same time as a response to non-human actors and logics stemming from the macro environment. Whereas previous research shows that a venture may choose between, for example, conformance to local rules of the game and the manipulation of key stakeholders, my study established that the focal actor needed to experiment with apparently contradictory applications of those tools (e.g. adaptation, manipulation) in order to navigate through the waters of complex stakeholder expectations in forging sociotechnical networks. The focal actor utilised a hybrid of legitimation strategies across all phases of the translation process (see Figure 6.3).

The first two phases – problematisation and interessement – are arguably critical in the translation process. The focal actor used argumentation, selection and conformance. It had to first identify potential partners and then frame the problem of informal remittances in such a

way that other actants recognised it as their own. Hence, argumentation, as a legitimation strategy, was primarily utilised by the focal actor as it sought convince potential allies to align their interests with its own in order to establish itself as the Obligatory Point of Passage (OPP) or gate keeper between allies and inscriptions in the emerging network. The selection strategy was utilised to identify reputable channel partners such as retail chains located for easy access particularly in areas with substantial migrant populations such as Hillbrow and Berea.

Conformance was used to assuage any anxieties that could emanate from the regulators in relation to conformance with existing regulations. For example, the new mobile remittance service was influenced by the need to adhere to the Know Your Customer (KYC) and Customer Due Diligence (CDD) principles. These principles are in line with Anti Money Laundering and Counter Finance of Terrorism (AML/CFT) regulatory requirements and best practice in line with the Financial Action Task Force (FATF) recommendations to maintain the integrity of the financial system.

Unsurprisingly, the first two phases took a longer time than the subsequent ones as anxiety among potential allies was the highest during these phases. Hence, these phases were characterised by intense negotiation as the focal actor tried to convince potential allies that the new channel would generate value for them in the form of commission for channel partners, reduction in informal remittances for regulators, increased convenience, security, speed and control for consumers and formalisation of remittance resulting in an increase in inflows of foreign currency for the destination country as well as remitter and receiver traceability.

Among other strategies, symbolic mechanisms were primarily used by the focal actor to make legitimacy claims. Along the translation phases, symbolic mechanisms shifted from, for example, primary reliance on the corporate's founder and the Project Team's human capital and pre-existing ties to the well-known mobile network operator's brand and the focal actor's history of accomplishments as signals of a quality and resilience. For example, the focal actor relied on its well-known MNO brand to signal legitimacy and conclude partnership deals with "reputable" technology partners, traditional money transfer operators and agents that constituted a vital part of its network. Awards conferred on the focal actor were publicised as demonstrable "proof points" of accomplishment of critical milestones that is confirmed by key external (not internal) actors. Proof points are an important antidote to uncertainty as they serve as demonstrable evidence of a new venture's capabilities (Fisher et al., 2017).

7.2.3 Research Question 3: Human actors' perceptions and interpretations of the emergent actor-network

The third research question was: *What are the human actors' perceptions and interpretations and how did that inform the choice and application of legitimation strategies.* The question seeks to elicit how the target human allies experienced the focal actor's network building activities and how this experience shaped their perception of the technology implementation.

Zimbabwean remittance receivers had experienced immense trauma during the hyperinflation period, from 2005 to 2008, which led to the demise of the domestic currency. This was only halted by the introduction of a multi-currency regime in 2009 when a Government of National Unity was constituted. During the hyper-inflation era, remitters and recipients lost faith in formal financial services like banks as remittances that used formal channels were converted to a worthless domestic currency (Mugumisi & Ndhlovu, 2013). Hence, the introduction of the mobile remittance technology sought to provide a channel that avails important user benefits to both users that hitherto relied on the informal channel and those that relied on the formal channels. Study respondents that relied on cash transfers through cross-border couriers wanted a channel that would not only be mainly safe, but also convenient while it was safe and allowed them control. The emergent channel needed to provide those benefits. Those that used banks and money transfer operators wanted a channel that was less costly, convenient and fast.

The main contextual factors narrated above shaped how the human actors perceived the emergent mobile remittance network. The setting is consistent with Gao et al.'s (2017) assertion that emerging markets are replete with institutional voids because they lack institutions that can help facilitate market transactions. As I have shown in the Zimbabwean case, banks could not always ensure access to deposits and credit and courts could not guarantee the enforcement of consumer rights. In that context, the focal actor employed various strategies to exploit the opportunities brought by the crisis in the Zimbabwe financial services sector to establish and rapidly scale a mobile money service that attracted a significant 1.7 million account holders in 2011, which was its first year of operation. Rather than repose trust in banks, people trusted a financial service offered by a mobile network operator. This is paradoxical.

Apparently, Zimbabweans have rapidly embraced mobile money and plastic money faster than Kenya and South Africa because of lack of trust in traditional financial institutions (Mashizha & Sibanda, 2017). In 2018, the domestic mobile money service claimed to have more than 9 million registered accounts, with 5.2 million deemed active every month (Nyanhete, 2017).

Likewise, interview respondents attributed this success to the fact that they trusted the mobile money service provider more than the traditional financial services institutions and the politicians that superintend over them. Hence, when a decision was taken to sponsor the development of an international mobile remittance channel, receivers were important actors in the enrolment process onto that new platform. Thus, they were incentivised to enrol remitters because of their perceived positive experience with the domestic version of mobile money. Additionally, the service provider deployed a hybrid of legitimation strategies to manage non-human elements originating from the macro environment. These include social trust, counter networks (competition), economic and political influence (power issues) and regulatory issues.

I concluded that in the absence of institutional credibility enhancers and adjudicators, the focal actor's reputation emerged as a key factor that could provide transactional confidence. Reputation was the antidote for a lack of social trust in traditional formal and informal channels. In emerging markets, reputation consists of three elements: prominence, perceived quality, and resilience (Gao et al., 2017). While the first two elements - prominence and perceived quality - have been established by research in developed markets (Rindova, Williamson, Petkova, and Sever, 2005), Gao et al. (2017) extended this definition by proposing that a previously untheorised component—*resilience* (beliefs about a firm's ability to withstand shocks) - is essential in emerging markets. We have seen evidence the three elements in this study.

Interview participants from the focal actor continually attributed the growth of the focal actor business and related corporates to the positive reputation of the founder, the entrepreneurship of top management, resilience, market dominance, experience and innovativeness, among other attributes. Hence, in its quest to garner legitimacy the focal actor emphasised that it could be trusted by highlighting the different elements of reputation in its communication efforts. Potential network allies relied on the focal actor's reputation to decrease uncertainty and hedge against transactional risks. This facilitated their enrolment as business partners, agents or service users. The focal actor used symbolic management to accentuate its perceived quality, prominence, and resilience.

The lack of institutional intermediaries, as shown by the lack of confidence in formal financial service providers in the Zimbabwean setting sharply illuminated the significance of a positive reputation. For example, positive reputation was magnified through awards that the focal actor cited, the growth of its different business units and subscriber base, its association with industry leaders and its ability to forge partnerships with reputable financial services firms and Mobile

Network Operators (MNOs) in the host country to drive down transmittal costs and provide a legal remittance platform that is accessible to all Zimbabweans in South Africa including irregular immigrants. Various spokes-agents, including regulators like the Reserve Bank of Zimbabwe, remittance receivers and agents testified to its reputation.

The existence of **counter networks** shaped the design of the emergent mobile remittance service as it incorporated basic benefits from both the informal and formal channels. Accessibility is one such benefit associated with informal channels that was adopted to enhance user convenience. The focal actor used the agency model to ensure that the service was easily accessible to match the pick and drop model used by the couriers. Hence, despite the embedded nature of cash-based remittance, the emergent network was eventually perceived to be superior by policy makers, regulators, and users in comparison with cash-based **counter networks** (competition) such as cross-border couriers in terms of remittances' security and sender's control of the transaction. The focal actor also attracted some couriers to enrol as agents for the new network through use of a combination of argumentation and manipulation strategies. For example, the focal actor convinced them that the emergent service sought to complement rather than replace their courier services.

Regulatory compliance and adapting to industry practices is another strategy that the focal actor used to enhance its positive perception and acquire legitimacy. Conformance was used as a strategy for the service to be perceived as adapting to the rules of the game thus reducing potential transaction uncertainty. Hence, the mobile remittance channel sought to be perceived as an alternative organised, regulated legal channel. Accordingly, similar to agency banking by the financial services sector, the focal actor enrolled popular retail outlets in South Africa and Zimbabwe to provide the mobile remittance service. Notably, the new service adheres to the financial services sector's Know Your Customer and Customer Due Diligence (CDD) principles. These principles are in line with Anti Money Laundering and Countering Financing of Terrorism (AML/CFT) regulatory requirements and industry best practice.

7.3 Contributions to current knowledge

The following paragraphs will tease out my contributions to theory, methodology and practice in more detail by drawing on the various theoretical frameworks that informed my analysis and interpretations of results (Chapter 5). Significantly, the achievement of the main purpose of this research, exploring the formation of a mobile remittance sociotechnical network through the lenses of ANT and the Legitimacy Perspective, allows providing a series of contributions

relevant to those interested in studying technology-based payment platforms and those using the social studies of technologies (SST) to guide their enquiries. My contributions highlight the value of the research by pointing to some theoretical, methodological and practical implications and suggesting the need for further work.

In undertaking this study, I was influenced by real world and theoretical problems. The real-world problem stems from significant migrant populations that continue to use informal monetary remittance channels despite the increase in technology-based payment platforms that are not only legal but are also fast, safe, convenient and allow for control by the sender. In addition, research has repeatedly witnessed the failure of ICT projects, ranging from telephone and satellite communication in Africa as early as the 1960s (Unwin, 2009), to computer system implementations in India and Latin America in 1990s (Montealegre, 1998), to mobile money technology in South Africa in the 2000s (Hayes & Westrup, 2012).

At the theoretical level, adoption literature has dominated studies in mobile banking, mobile payments, mobile money technology, internet banking (Shaikh & Karjaluoto, 2014; Mohammadi, 2015 Dahlberg et al., 2015). Consistent with technology deterministic perspectives, the focus of much of ICT research has been on the impact of ICTs on developing countries. It is linear and deterministic (Diniz, Bailey, & Sholler, 2014). Adoption literature fails to recognise complexity in contemporary ICT implementations. In order to address that limitation, this case study uses ANT as the primary lens which acknowledges and amplifies equal agency (ability to act) of both human and inanimate elements in ICT implementation.

7.3.1 Theoretical contribution

Below is my theoretical contribution in addition to what has been discussed in chapter 6.

a) Use of Actor Network Theory to address complexity

ANT allowed me to identify relevant human and non-human actants and in conceptualising the interrelated nature of social and technical dimensions as well as the active role of technology in the micro-environment. The lens provided thick descriptions of dynamic interactions and the mutual relationships of social and technical actants that constitute a stable mobile remittance sociotechnical network and how it is created. The lens was particularly useful to look at network creation as involving processes of negotiation between actors in which a focal actor aimed at negotiating with potential allies to enrol onto the mobile remittance platform. Hence, looking at these processes was found to be useful in understanding network creation as

a relational phenomenon that involved political processes in which strategies were crafted and deployed, actors persuaded, and organisational resources negotiated to sponsor and promote the creation of a stable network.

ANT also helped highlight how processes of negotiation were characterised by tensions between actors involved and how these played a critical role in shaping network creation. This has contributed to our understanding of mobile remittance network creation by showing how processes such as resistance, betrayal, and competition might play critical roles in the shaping of the mobile remittance channel. For example, resistance was observed when , after the deployment of different strategies to promote the mobile remittance channel, some actors were persistently reluctant to use the mobile-based remittance technology; betrayal was observed when even those sponsoring the use of the mobile remittance technology ended up using competing channels like cross-border couriers; and competition was created by existing money transfer technologies like internet banking used by providers such as World Remit that "compete" against the interests of those promoting mobile remittances.

In sum, ANT has revealed the potential to open the black box of technological change processes and proffer new insights such as: a) an understanding that non-human actors (technologies, events, concepts, regulations) have interests and play an active role in those processes hence can influence mobile remittance network creation in different ways by enabling, constraining or resisting translation; b) an understanding of how the networks associated with those processes come to be created through the translation process; c) and, an understanding of how the interests and identities of various actors are translated during those processes.

However, ANT was less beneficial in considering macro-dimensions and in explaining how observed effects came about. Thus, while theoretical resources from ANT generated important insights into multi-actors' interests, roles and concerns during the translation process, the Legitimacy Perspective helped to conceptualise the macro-environment in which these sociotechnical processes were situated. This is particularly important in the developing world where emerging digital technologies often handed down from the North such as mobile banking, invariably neglect nuanced needs of technology users (in their inscriptions) and subtleties of changing interpretation in often complex social contexts (Avgerou, 2013; Introna & Whittaker, 2006). Failure to acknowledge such complexity often results in failure of some of these much-trumpeted technological innovations (Hayes & Westrup, 2012).

b) ANT's limitation due to its flat ontology

According to ANT, context is assumed to be emergent and thus actors and their relations is all that is needed to explore to understand phenomena (Creswell et al., 2011). As a result of this rather radical ontological stance that assumes that there is no society but only networks, the lens tends to ignore the existence of context or minimise its relevance. On the contrary, I found that there are more than actors and their relations shaping network creation. In fact, adopting such a position by ANT not only obscures how social structures influence local action during network creation; but, as has been shown in the preceding chapter, it also undermines our ability to explore how the nuances of a specific context (remittance corridor), and its history would shape the creation of a mobile remittance sociotechnical network. Faced with such a shortcoming, ANT has limited theoretical applicability (Cresswell et al., 2011) which has led some scholars (e.g. Walsham, 2017; Booth et al., 2016) to suggest that it is most useful if complemented by other more accepted theoretical lenses that can help to buffer its limitations.

I demonstrated that, to deepen our understanding of sociotechnical network creation, we need to move away from those explanations that solely explore what occurs within the local level boundaries of human-technology interactions during network creation. Instead, we need to explore the context that surrounds those interactions in depth. Accordingly, one of my contributions in this case study to retail payments literature and the social study of technology is that by augmenting ANT with the Legitimacy Perspective, influential non-human elements in the wider context, that are ordinarily obscured in ANT-based studies, have been foregrounded and their significance magnified.

Context, in this case study may be organisational, national and international. I particularly utilised the Legitimacy Perspective in spotlighting the role and influence of broad (higher) level norms, practices, values, culture and historical issues on local level actor interactions. This brought to into sharp focus the tangled relationship between the micro- and macro-levels, hierarchical positions, interests, and concerns of all stakeholders. However, Avgerou (2019) cautions that "research that spans micro-macro analytical domains in the social sciences is notoriously difficult (p. 12). Hence in this quest for multilevel analysis, which is considered challenging, I specifically traced and described how the focal actor utilised legitimation strategies to attract potential network allies to enrol onto the platform. I concluded that, legitimation strategies mediated between local level action (described with the aid of ANT) and actors located in the wider context in which the technological implementation occurs. This

combination of the macro- and micro-levels of analysis generated a deeper understanding of network creation since the particular preoccupations of each approach provided complementary insights that otherwise would have been missed if a single approach was used.

In sum, the case study established that actors interacting at local environments rarely control all the valuable resources and other non-human elements required by sociotechnical networks to stabilise. Rather, these individual (micro-level) interactions are susceptible to institutional influence - regulations, political and economic power, competition and social trust issues - among other influences originating from the larger context. Yet, recent IS research studies using ANT have hardly recognised and brought to the fore, which is a view underlying this study.

c) Augmenting ANT with Legitimacy Perspective

In view of the stated limitations with ANT's flat ontological position, I augmented the ANT with the Legitimacy Perspective and utilised the flexible and qualitative approach which was suited to study the creation of a complex mobile remittance technological system and surrounding contexts and processes. The combination of theoretical perspectives enabled me to try out and test emerging results by constantly "zooming" in and out (e.g. from a certain pertinent point to the whole, from micro- to macro-contexts). As a result, I drew a comprehensive picture of sociotechnical network creation, without neglecting either, the more subtle micro-factors or more overarching macro-factors, as well as relationships between these.

I showed that the focal actor adopted and implemented different communication approaches and activities to garner legitimacy from diverse macro-environmental constituents during the different phases of the moments of translation. Specifically, a hybrid of legitimation strategies was used to mediate between local level interactions and actors emerging from the broad context as shown on the conceptual model (Figure 6.3). These actors (or sub-networks) include resources, regulation, competition, power issues (political and economic influence), and trust issues (originating from history of financial services in Zimbabwe).

During the problematisation phase, for example, the communication approach adopted by the focal actor was primarily diagnostic. It was focused on understanding who the relevant actors are and what their interests may be with a view to persuade and convince them to align interests with its own. Thus, to problematise to policy makers and regulators, argumentation activities like meetings and workshops facilitated by experts were implemented to convince them that the new technology would formalise remittances and increase formal foreign currency flows

through this channel to supplement meagre flows from FDI and ODA. Policy makers and regulators, in both the host and home countries, are particularly keen on formal remittance channels to enhance flows of forex and traceability of funds. Regulators in both countries are particularly keen on protecting the integrity of the financial system in line with local and global standards. Hence, the focal actor applied argumentation and conformance strategies to convince regulars that it was a legitimate entity that respected and followed the "rules of the game" (North, 1990). The focal actor conformed to existing industry and international financial regulations around Know Your Customer (KYC), Anti-Money Laundering (AML) and Combating funding of terrorism (CFT). A Risk and Compliance Manager was hired to advise on related regulatory compliance matters. Further to that, the focal actor sales and compliance personnel regularly monitored agents and business partners for compliance with industry, national and international regulations and standards as a strategy to manage risk.

In addition to compliance related activities, the focal actor also selected reputable channel partners to garner legitimacy. It mimicked existing financial services providers who use retail chain stores to provide agency banking services because of their wide distribution infrastructure. By also associating with known retail chain stores that provide financial services such as agency banking, the focal actor sought not only to enhance user access to remittance services, but also to signal quality and reduce perceived transactional risk. By convincing potential allies through argumentation, conformance and selection of reputable allies as channel partners, the focal actor rendered itself indispensable through outlining the Obligatory Passage Point (OPP). These had a huge impact on subsequent interessement, enrolment and mobilisation efforts.

Once the OPP had been articulated, the definition of interests of various actors required intense outward communication, establishing the central role of the focal actor in the initiative and in determining the future of the other actors. Interessement stage communication was directed toward convincing and manipulating the actors and blocking out other opposing messages from other actors seeking to introduce parallel interessement. During this phase, the focal actor again used a hybrid of argumentation, manipulation, conformance strategies to legitimate the merging network. For example, the focal actor deployed symbolic management to demonstrate its positive reputation, its entrepreneurial character, its resilience and other socially constructed values to interest and enrol other potential allies onto the platform. There constant reference a dominant market size, experience, positive reputation confirmed through awards, top management experience illustrated by market growth and other values. These are credibility

enhancers to provide transactional confidence given the history of target users who had experienced transaction uncertainty that had even driven some of them to be migrants in South Africa. Amidst all the anxiety around perceived transactional risk associated with formal financial channels in Zimbabwe, the focal actor's brand reputation was positioned to symbolise transactional confidence. Erstwhile competitors or counter-networks like the common cross-border transporter, who transmitted cash remittances, were manipulated to enrol as agents for the emergent mobile remittance system.

d) Other emerging theoretical issues from the case study

I also made a theoretical contribution by asserting that a single totalising approach cannot sufficiently address organisational phenomena. Accordingly, through augmenting ANT with the Legitimacy Perspective, I have suggested some considerations that can potentially enhance the ability of social studies of technology to foreground collective, relational, historical, dynamic and contextually-shaped character of organisational phenomena.

Power issues in sociotechnical network creation: Power issues must be a primary concern when studying sociotechnical network creation phenomena. While ANT was useful in in examining how power manifested itself at the individual level by exploring the political processes of negotiations between actors, and by treating human and non-human actors symmetrically, the Legitimacy Perspective helped to explore the role of broader social structures in the shaping of sociotechnical phenomena thus providing insights on power transactions between the micro-level and as institutions that govern the larger context.

Equal agency of human and non-human actors: Attention must be equally paid to the active role and contribution of humans as well as non-humans (technologies, concepts, events, regulations, resources etc.) in performing socio-material practices during the process of network creation. This includes the need to recognise that not only human, but also non-human, actors can have interests and act as active elements with ability of resisting, enabling and constraining change. Interests are inscribed in related technologies.

Multiple analysis levels: There is need to adopt different angles for observation to better capture the complex character of the process of creating a sociotechnical network. This involves the need to move down to identify actors and describe their interactions at the local level of action, and up to negotiate with the relevant non-human contextual elements that shape phenomena. This allows, among other benefits, the possibility to better explore power issues at different levels of analysis. Thus, ANT, whose forte is in describing actor interactions at the

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micro level was augmented by the Legitimacy Perspective that provided insights from the macro perspective.

Context is both emergent and historically-shaped: Researchers who use the ANT as the primary theoretical lens need to recognise context as both emergent and historically-shaped. While ANT highlighted how the emergent nature of relations, the negotiations taking place during the translation process, and the strategies developed by the focal actor shaped network creation, the Legitimacy Perspective helped make sense of how historical context and social structures influenced the same process of network creation. It helped to explore how aspects such as focal actor reputation, historical social trust deficit in formal remittance channels and industry, national and international regulations, political, cultural and economic factors constrained or enhanced network creation and stability. Equally, this helped to highlight how the macro-environment was in turn influenced by micro-factors over time.

While ANT was useful in bringing the emergent nature of context to the fore through highlighting various negotiation strategies and political manoeuvring that occurs during network creation at the micro-level, the Legitimacy Perspective spotlighted the historical character of contextual factors like culture, values, practices and habits that may impinge on network creation. When these complementary views of context are recognised and explored, the possibilities to generate insightful accounts that can explain both the stability of sociotechnical phenomena and change are potentially enhanced.

7.3.2 Methodological contribution

a) ANT method disentangles long and convoluted IS project processes

The Information Systems (IS) literature is dominated by research that derives from the positivist paradigm (Avgerou, 2013). As such, these studies primarily leverage adoption lenses and tend to adopt simplistic, individualistic and cross-sectional methods to study ICT related phenomena. They often view IS project processes as linear and simple (Ramadani et al., 2018). This is evident in studies on mobile banking (Shaikh & Karjaluoto, 2014), mobile payments (Dahlberg et al., 2015), and online banking (Donnehy & Sammon, 2015). The main objective of studies employing Diffusion of Innovations (Roger, 1995) or other related theories such as Davis's (1989) Technology Acceptance Model (TAM) and later extended to Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003) is generally to establish statistical relationships among variables and typically to measure members' response (e.g. acceptance, perception, or use) with the aim of control and prediction.

Studies that utilise the adoption lenses often lack a rich understanding of technological innovation acceptance and diffusion process within the society due to the narrow focus and lack of depth in exploring the social context. They largely provide explanations on features of a technology-based system that enhances perceived ease of use while neglecting the relevance of the context surrounding these emergent retail payment systems. Consequently, the role of the society is usually not well-thought-out. Yet, in light of the findings of this study, the social context could determine the shape of suitable technological innovations for vulnerable groups like migrant populations.

My findings reveal that, in contrast to the adoption literature logic, the creation of retail payments systems like mobile remittances is a "messy" phenomenon that is far from being understood via statistical relationships among variables. The complexity involved in the creation of mobile-based remittance systems requires that questions and methods must move beyond merely looking at how the motivations and interests of individuals shape their creation. Hence, in order to deepen our understanding of mobile remittance network creation, there is need to use methods that assist the exploration of the highly complex and contextualised character and the relational and dynamic nature of these retail payment platforms. Instead of simply looking at what occurs during the human-technology interactions at the micro-level, this study has shown that a greater understanding of mobile remittance sociotechnical creation can be gained when looking beyond these local level interactions and giving sufficient attention to context and institutional actors.

Through the use of ANT as a sensitising device, the case study found that IS project processes, particularly in the pre-initiation phase, may neither be linear nor simple; rather the processes are long and convoluted. Accordingly, calls have been made from Kling (2000), echoed by Orlikowski and Iacono (2001) and Avgerou (2013; 2016; 2019) for social informatics researchers to adopt interpretivist perspectives to shed light on sociotechnical constellations.

d) ANT combined with the Legitimacy Perspective gave access to idiosyncratic data

In this case study, I view ANT as somewhere between a theory and a method because I used the lens as an analytical technique to follow actors and try to understand what they do. ANT draws from the interpretive research tradition hence it is useful in "situations where innovations proliferate, where group boundaries are uncertain, when the range of entities to be taken into account fluctuates" (Latour 2005, p. 11). All these were seen in the case of the mobile remittance network, and in cases of technological change in developing countries more

generally. Therefore, the approach was particularly helpful in framing the research question, guiding data collection and theorising about potential explanations. Using ANT research methodology to describe and analyse the creation of a mobile remittance network provided access to rich idiosyncratic data and contributed to better knowledge of sociotechnical formations.

The combination of the ANT and the Legitimacy Perspective has shown the relevance of looking at network creation as an evolving process. Previous studies have tended to look at retail payment system adoption as if it were a one-time event phenomenon. Adopting this stance undermines the ability to look at the dynamic nature and evolving character of sociotechnical network creation.

In sum, this case study has highlighted the need to ask broader questions and adopt complex methods for data collection when studying the formation of technology-based payment platforms like mobile remittances. These questions and methods should aim to explore beyond observing and measuring contributing behaviours to unravel the context within which the retail payment system is immersed. The questions and methods must move beyond the reductionist view of network creation, which sees it a static one-time event, to look at how retail payment systems evolve and how events and past performances shape current ones.

7.3.3 Practical contribution

Lewin (1945) observes that "nothing is as practical as a good theory" (p. 127). While the findings of the study have provided an insight into the various complexities involved in the development of an international mobile remittance channel and have highlighted the critical role of social structures and the context in general in shaping network creation, the conclusions drawn from this study do not prescribe a step-by-step procedure to be followed in order to develop a successful international mobile remittance platform. Nonetheless, well-armed with an account of the as-lived experience at the back of their minds, practitioners can make informed decisions on where to start from to yield success in their IS projects.

In the following sections, I will attempt to distil the most important potentially transferable practical insights - that affect different practitioner groups - for creating and implementing a retail payment platform. These include policy makers, designers of technology-based international remittance platforms, and organisations with some insight to the IS project processes as well as the researching community. However, it is important to keep in mind that these implications are based on my experiences from studying the creation of a mobile

remittance channel in a selected site. These insights are based on the less developed African setting with its peculiarities and may therefore not be directly transferable to other contexts.

a) Remittance market actors

The case study equips remittance market actors - mobile network operators, banks, money transfer organisations and international financial institutions – with insights to analyse factors that influence the decision of migrants to enrol into a typical digital payment platform spanning two national borders and utilise it to remit funds. Some of the following insights for practice emerged from the study:

User involvement and software characteristics in shaping technology: One of the most important pre-requisites for implementing complex IT systems is the presence of software that is usable, or is flexible enough to be usable and one that can be modified overtime to suit the evolving needs of diverse user needs and groups. Commercially procured software systems such as the mobile remittance system can prove challenging to introduce into settings where cash-based counter-networks are embedded. The IT system needed to be extensively customised to meet user needs. In addition, the system needed to be perceived by target users as being better than the previously operational system or at least worth extra efforts by yielding tangible benefits to channel partners and users. In my case study, the focal actor and the technology vendor encouraged feedback from system users, which was incorporated in the design to achieve system usability. This is illustrated by the adjustment, at the insistence of users of the "short code", which they initially regarded as too long.

I also found that critical attention that should be given to user involvement in shaping technological developments particularly in the context of complex sociotechnical ventures such as the mobile remittance system. This is regrettably far too ignored as technical, economic, social, political and other considerations seem to crowd this dimension of planning. The results from my case study suggest that any sociotechnical developments need to begin, be shaped and be embedded with the user in continual focus. Other issues that may emerge during the course of implementation are significant but secondary. Through understanding user needs, practitioners can better anticipate customer changing tastes and preferences and design products and offer services better-tailored for users thus narrow the expectations gap.

There is need to consider technologies that are flexible to adapt to the requirements of practitioners in order to increase the possibility that they will be used or modified, if required.

Equally, the technology should be developable so that it can fit within local processes as well as having the potential to evolve in the future according to needs.

Pay attention to larger organisational context: This case study is primarily ANT-based. ANT's forte is in identifying human and non-human actants and describing how they interact to realise a stable sociotechnical network (Heeks & Stanforth, 2015). This helped us to answer questions such as: 1) How do we explain the trajectory of a sociotechnical project like a mobile remittance channel? 2) How does a specific innovation in a developing country diffuse, scale up or sink without trace? 3) What role does technology play in processes of technological change? 4) How does power manifest itself in processes of technological change? 5) How are ostensibly relatively powerless actors every so often able to influence the direction of technological change? 6) How are apparently relatively powerful actors sometimes not able to get their way on a technology project?

Further to that, my findings have shown that sociotechnical network creation may require more than human and technological actors and a description of their actions. Rather, the process entails understanding that different stakeholders have different interests, objectives and values. Some focusing on macro-economic benefits, some on financial inclusion, and some on maintaining integrity of the financial system and yet others are interested in market growth. The focus should not be on attempting to streamline these, but on seeking alignment where possible to realise a common vision. In doing so, building relationships and improving channels of communication between users, the focal actor, business partners, regulators and policy makers will become increasingly important. Hence, in order to have a better understanding of ICT implementation, the larger context cannot be minimised or ignored. This necessitated the augmentation of ANT with theory of social structure.

A fundamental pre-requisite in my case study was the active role taken by the focal actor to legitimate the new venture since significant cultural change and local progress in software development and implementation is influenced by broader social, political and economic actors. Hence, ensuring continued institutional support was identified as an important facilitator for local progress. Rather than only focusing, for example, on the interface design of the mobile remittance technology, there is need for a good understanding of the institutional environment in which international mobile remittances systems are implemented.

The combination of ANT with the Legitimacy Perspective introduced practically relevant lessons in terms of managing legitimacy. Hence, practitioners my need to deploy a hybrid of

legitimation strategies to achieve network stability. The case study analysis provides indications that what looks like argumentation may indeed be manipulation to educate or convince regulators, consumers or investors; what started out as manipulation can turn into true argumentation over time once resources are available. Appreciating the role of contextual pressures provides a deeper understanding of their impact on sociotechnical network creation.

Policy makers

Policy makers, who engage with this study, will derive and share insights on policy initiatives to better calibrate polices that are more likely to enhance the employment of mobile remittance systems. This may increase formal international remittances as part of a larger strategy to promote financial inclusion, alleviate poverty and enhance macro-economic growth (Villasenor et al., 2016; Ratha, 2013). The study highlights the efforts of the focal actor to garner legitimacy by conforming to the regulatory regime.

Researchers

This case study also contributes to the thin body of knowledge concerning nuances around IS implementation in developing country context. These include the importance of acquiring and understanding practices, culture, values and other social structures in order to how stakeholders behave the way they do. Developing country settings present what one may view as extreme cases that researchers may regard as unhelpful to scholarship. There is need to look at common concepts like power and how they are treated in those extreme settings.

7.4 Study limitations

Alongside these contributions and insights, the mobile remittance case study cites some challenges of using ANT and the Legitimacy Perspective to understand sociotechnical network creation and how they shaped my interpretation and understanding. These challenges are broadly categorised as Theoretical, Methodological and Practical.

   a) **Theoretical challenge**

There remains a fundamental quandary about the use of ANT: some scholars argue that it is just narrative and descriptive and less analytical, even explanatory or predictive (Booth et al., 2016; Heeks & Stanforth, 2015; Creswell et al., 2011). This case study found that describing how things occur is straightforward using ANT because of its relational ontology, but why things occur would pose a challenge. As a result, some scholars have contended that ANT is

more of a method than a theory (Heeks & Stanforth, 2015; Creswell et al., 2011). Undeniably, no other claims are made by the proponents of ANT: 'the actor-network approach is not a theory' (Law 2007, p. 2) while Latour (1996) concurs "…no more than cartography is a theory on the shape of coast lines and deep-sea ridges' (p. 374). 'Theories usually try to explain why something happens, but actor-network theory is descriptive rather than foundational in explanatory terms' (Law 2007, 2). This study viewed ANT as somewhere between a theory and a method, or more precisely as an analytical technique that can be used to follow actors trying to understand what they do at the same time constantly questioning often taken-for-granted characteristics of actants.

ANT was augmented by a theory of structure, the Legitimacy Perspective, to buffer some of its limitations and enhance its explanatory power. This was an attempt at moving beyond the descriptive to the analytical in relation to the formation of networks and the process of translation. This is consistent with prior studies where ANT was combined with activity theory to analyse innovation processes (Miettinen 1999) while Young et al. (2012) combined ANT with systems theory to analyse regulatory policy.

ANT, in combination with the Legitimacy Perspective, has helped tell an insightful story and illuminate facets of technological change that a solely ANT-based account would side-line. Significantly, the combination has provided rich detail of the politics within change processes, the active role of technology, people generally and individuals specifically as well as contextual influence on the local relationships between actants. I also brought to the fore such general concepts as power and politics in the creation of sociotechnical network.

b) Methodological challenge

In writing this account, I have tried to obey Callon's (1986) and Latour's (2005) injunction to 'follow the actor'. On the positive side, this introduced a potential for flexibility or, being more critical, for subjective choice in the selection of the story to be told. Nonetheless, the number of actors in the network proved to be infinite since ANT allows for a thick description: a description suited to book length (e.g. Latour 1996a). Consequently, this description of the case study fits only with great difficulty into the word-length requirements of a standard PhD thesis. This required that I made choices about what to cut out and that makes the actual description rather 'thinner' and less rich than ideally desirable. I had to make rigorous and pragmatic decisions of where (and from whom) to start and stop data collection. The primary focus was on answering the research question. Additionally, in using the Legitimacy Perspective, I had

to examine how the network is positioned in relation to larger networks (e.g. the historical, cultural, political and economic environment).

Another limitation relates to the methods used to collect data. As shown in Chapter 4, the methods to collect data were mostly restricted to interviews. Interviews were used as the primary mechanisms to elicit empirical data. However, critics of this mechanism cite its lack of objectivity and rigour and thus the data could be contaminated and highly influenced by subjectivity. Different strategies were used to limit possible bias and any imposition of my views that might have developed due to my own personal background, theoretical experience interests, and experience. However, to avoid this, research participants were selected in examples of polar types. This potentially rendered a more complete picture of the phenomenon. When some issues or relevant incidents appeared, I made an attempt to explore these issues within the interviews or in subsequent conversations that took place. A conscious effort was made to avoid introducing theoretical vocabulary of the informing approach to the conversations. When using the interview protocols, they were taken as overall guidelines to explore certain topics, rather than as a list of statements to be tested. Vigilance to emergent aspects was maintained during each interview.

In addition, other complementary sources were used though to a lesser degree: field observation and archival data. The use of complementary methods proved to be insightful in different ways. For example, ANT and the Legitimacy Perspective pointed to the need to depart from just observing local or micro-level interaction activities, as if it was a neatly self-contained entity. Thus, while the use of interviews allowed the exploration of the role and interests of non-human actors, including social structures located in larger context, the additional data from field observations and a review of project-related documents offered retrospective and historical information that was particularly relevant to trace the mobile remittance project implementation, milestones, and the different events and strategies taken by the focal actor that shaped the network. This was consistent with the interests of the Legitimacy Perspective and ANT that point out to the importance of giving attention to the institutional and historical context as well as to connect to present situations rather than use cross-sectional studies that assume network creation and technology adoption as a one-time event phenomenon.

Practical challenge

The first practical challenge in this study relates to restricted access to some stakeholders due to gatekeeper influence at all levels. For example, I could not get access to regulators and some

business partners who emerged as important actants in the regulatory and business sub-cases. Equally, I experienced delays with getting official consent from the focal actor. Some of my contacts were understandably reluctant to pass on details of key individuals within these stakeholders most likely due to commercial sensitivities and different priorities. Given that the target users are migrants, some of whom are undocumented, it was difficult to assure them of confidentiality and that the information would not get them to be deported.

This environment meant that once I did get hold of stakeholders, some seemed hesitant to give honest opinions, particularly in relation to commercial information. Consequently, the nature and depth of data collected at different emerging sub-cases varied due to these issues with access and cooperation of gatekeepers, to name just a few. My approach to deal with these challenges was to be persistent without being irritating. Though giving participants time to respond, I would follow up initial email contacts with phone calls. In addition, during interviews, I also encouraged participants to speak "off the record" and offered to switch off the recording device.

Additionally, technology designers might also recognise the benefit of simplicity, flexibility and fluidity as well as manage the tension between technology design stabilisation and actor–network stabilisation (Ramiller, 2005). As seen in the mobile remittance case, the focal actor successfully negotiated this tension on at least two occasions. By projecting the appearance of design flexibility and negotiation during system design through encouraging user feedback, re-interessement and re-enrolment of the system users was attained. Users had raised concerns about the rather complicated service, registration process (long registration turnaround times) and an equally too long "short-code". And by allowing actual design flexibility, they enabled the network to mobilise and stabilise. Hence, the case study encourages technology designers to consider local users and local interests.

ANT's concept of translation is fundamentally a "political admonition" (Heeks and Stanforth, 2015, p. 47) that can be interpreted in different ways by technology project practitioners. It encourages those who are in traditional positions of power, including those involved with technology policy, to see themselves as network managers, focusing on what are every so often derogatively labelled 'Machiavellian' practices that will facilitate the translation of others' interests and identities to their own technology plan. Techniques used may range from communication through negotiation to bargaining, political manoeuvring, manipulation, coercion and threats; many of which were seen in the mobile remittance case.

Almost all actors should recognise the value of 'playing politics' within technology projects. A stark example around the role of politics in practice relates to those excluded from participation in technology design and choice and allocated predetermined scripts and roles. A case in point are the exclusion of undocumented migrants, without requisite KYC requirements, from opening mobile wallet accounts. ANT in theory and the mobile remittance case in practice demonstrate that such exclusion may not be permanent if almost all actors realise the value of negotiation to promote their interests. The focal actor concluded partnerships with licensed money transfer operators to ride on their licences after it failed to immediately secure its operating licence. In return, the partners (e.g. MTOs) rode on the focal actor's infrastructure to disburse their customers remittance in the destination country.

7.5 Study strengths

One of the strengths of my study its theoretical grounding. The theoretically driven approach to design, data generation and analysis should enable transferability of findings to beyond the immediate context of the mobile remittance case study. However, I also encountered some theoretical challenges. Critiques of the ANT have observed that there is risk of unreflexively applying the four-stage model of translation in order to verify its universality (e.g. Whittle & Spicer, 2008). To mitigate the impact of this limitation in this case study, different techniques and strategies were used. For instance, during interviews, constant efforts to create a suitable atmosphere where interviewees felt free to share openly about their role and as-lived experiences were made. Theoretical vocabulary was avoided during interviews. Equally, during analyses, when using ANT to make sense of the data, the translation model was merely used to to provide a set of sensitising ideas rather than seen as a model to be tested.

Studying complex systems is difficult and required some simplifications on my part (McLean & Hassard, 2004). I focused on a single case within a very specific context: that of mobile remittances along the South Africa to Zimbabwe corridor. As Law and Mol (2002) recommend, I attempted to tell a story of my interpretations of the of the field as experienced by various participants (and of course influenced by my presence and methods). As a result, I focused on particular issues that I found most pertinent and most interesting, whilst inevitably having neglected others. I therefore concede that my picture is not necessarily complete. Crucially, it provides a snapshot of a particular time and particular places.

In relation to space, for example, my focus on a specific organisation may mean that my findings lack transferability to other contexts as this organisation may not reflect the creation

of all mobile remittance mechanisms for different international corridors. Some critics may view the South Africa-to-Zimbabwean remittance corridor as too extreme a case hence of little value to academia. Nonetheless, my findings are consistent with previous literature on technology adoption that have utilised sociotechnical lenses Harry et al., 2014; Effah, 2012; Creswell et al., 2011; Introna & Whittaker, 2006). General insights that emerged around power issues and politics of technological artefacts in the creation of sociotechnical networks are relevant and applicable in other "normal" contexts.

Regardless of challenges encountered, I attempted to tell a coherent story, carefully questioning my own assumptions throughout the process and constantly testing emerging ideas against reality by feeding back emerging findings to participants. This process, in combination with discussion of emerging findings with my supervisor, helped to ensure confirmability and credibility (Walsham, 2006).

7.6 Implications for future research

Having outlined my contributions of this study to theory, methodology and practice, I will now discuss the implications of my work for future research. As the findings of this study suggested, the context surrounding the creation of the mobile remittance sociotechnical network affected the enrollment of target network allies by the focal actor. An obvious area for further research is therefore to extrapolate the use of ANT and the Legitimacy Perspective to explore similar phenomenon within different contexts. This case study can be seen as a step towards further exploration of the two theories in a field where they have rarely been applied. It can be argued that by shifting contexts, future research may explore whether my findings are transferable and whether the models need to be modified. This is most likely to take the shape of qualitative enquiry as the primary focus of these models was on investigating process issues. For example, different institutional factors that shape network creation might be found, which might require different legitimation strategies that shape network creation in different ways.

Further studies can also adopt methods such as ethnography, which might be best positioned to explore different levels of analysis (e.g. observe the interactions at the local level), choose different angles for observation, foreground the emergent and historical aspects of phenomena and to give a more balanced status to both human and non-human actors. Ethnographic methods would require long periods of observation allowing researchers to observe, for example, the micro-interactions and power relations that occur at the individual level and the role of non-humans in mediating the creation of a sociotechnical network. This will require funding bodies

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to allocate the necessary resources to enable deeper insights to be elicited into the way technologies become embedded and are made to work within and across organisations.

7.7 Conclusion

This chapter has integrated my findings (outlined in Chapters 5 and 6) with the more recent literature and the theoretical frameworks. By examining both micro-and macro-environments, my findings help explain why the creation and adoption of a mobile remittance channel succeeded despite challenges. There was recognition of the context and institutions as well as related activities and communication approaches for the different overlapping and iterative phases of the translation process. Notwithstanding these insights, some important tensions have remained. These include the inscribed technological properties and power relationships characterising sociotechnical network development on a micro-scale and macro scale. The chapter has concluded with a critical reflection on the theoretical and methodological framework outlining strengths and limitations of my study.

The overall contribution of this study has been opening up new lines of inquiry that might inspire others to conduct research within the fields of the social studies of technology and the technology-based retail payment platforms. The use of ANT and the Legitimacy Perspective within one single study has shown that these approaches can be insightful to deepen our understanding of sociotechnical network creation. I envisage that this study could motivate further studies on emergent retail payment platforms that are informed by sociotechnical lenses. In particular, the use of two social theories within one study has helped in foregrounding aspects such as the relational and collective, contextualised, and dynamic and historically-shaped character of sociotechnical networks.

Based on the study discussed in this thesis, I believe that theories like ANT and the Legitimacy Perspective offer a solid base from which to conduct exploration of emerging sociotechnical phenomena. These lenses would allow a researcher to look down (micro-level) and up (macro-level), to explore how they can offer different perspectives from those informed by, for example, adoption literature. Significantly, this case study has presented a rich repertoire of vocabulary, ideas and sensitising devices to seek for more answers but more importantly to ask different questions

CHAPTER 8

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APPENDICES

Appendix 1: Ethical clearance

Gordon Institute of Business Science
University of Pretoria

Dear Nick   22 October 2017

<u>ETHICS APPLICATION: Nicholas Ndebele Student number 15398235</u>

Research title: Mobile remittances as sociotechnical networks: An Actor-Network Theory case study.

On behalf of the Gordon Institute of Business Science Doctoral Research Ethics Committee, I am pleased to confirm that your application for ethics clearance for the above research has been approved on the basis described in the application form and supporting documentation.

The following documents were reviewed:

- Ethics application form
- Methodology chapter of proposal
- Letters of consent
- Interview guides
- Permission letter from organization to use the data

We wish you success in your studies.

Yours sincerely

Vivienne Spooner
Senior Programme Manager: Doctoral Programme

INFORMED CONSENT / INTRODUCTION

Title of the study

Mobile remittances as sociotechnical networks: An Actor-Network Theory case study.

<div align="right">

Research Conducted by:

Mr N. Ndebele (15298235)

Cell: +263732458796

</div>

Dear Participant

You are invited to participate in an academic research study conducted by Nicholas Ndebele a Doctoral student from the Gordon Institute of Business Studies (GIBS) at the University of Pretoria.

The purpose of the study is to gain an understanding of the process of building a mobile remittance channel. I will also attempt to understand how a remittance service provider, as the primary actor, deploys different strategies to build this network and whether the target allies (e.g. service users) in turn shape the strategies employed.

Please note the following:

- Your name will not appear on the interview transcript and the answers you give will be treated as strictly <u>anonymous</u>. You cannot be identified in person based on the answers you give.
- Your participation in this study is very important to us. You may however choose not to participate and you may also stop participating at any time without any negative consequences.
- During the interview you will be asked to share your experiences with a view to understand what shapes your participation.
- There will be no material or monetary benefit for your participation. However, one of the benefits of your participation would be that your opinions and experiences may help to have a better understanding of how the mobile remittance network was created and is working.
- The results of the study will be used for academic purposes only and may be published in an academic journal. We will provide you with a summary of our findings on request.
- If you decide to participate, the interview will take around 60 minutes to complete. If necessary, you will be available for follow up questions (telephonic / email) for additional data or clarification.
- The interview will be recorded for completeness. If you do not want it to be recorded please delete the relevant item below.
- If at any point you wish to withdraw from the interview you may do so without any repercussion, and the interview recording and notes will be destroyed.
- Please contact my study leader Professor L. Whittaker on 011 771 4348 or WhittakerL@gibs.co.za if you have any questions or comments regarding the study.

Please sign the form to indicate that:

- You have read and understand the information provided above.
- You give your consent to participate in the study on a voluntary basis
- You give your consent for the interview to be recorded

....   …………………………

Respondent's signature   Date

Focal Actor/Company Interview Schedule

Introduction

- o Introduce yourself
- o Review the purpose of the study, explain method of data capture and analysis
- o Assure participant about confidentiality and anonymity
- o Estimated interview completion time
- o Benefit of study, any questions?
- o Sign consent form

Interview participant's details

- o Date………………………….   Place of interview……………………….
- o Position/Role……………………   Gender…………………………………...
- o Age……………………………...
1. Tell me about your background and role in this company.
2. What were the motivations or intentions of starting this project?
3. Which key entities (e.g. organisations, people) became a part of this project and what were their roles and relationships?
4. Describe to me the phases that the company went through and activities and strategies you used to win the trust of other network members: channel partners and service users.
5. What feedback did you get and how did you modify your engagement with other actors in light of their needs to facilitate the network building process?
6. What challenges have you encountered? How did you attempt to address them?
7. In your opinion, has this network been successful or has it failed to achieve its objectives? If it has been successful, what are the major reasons?
8. Are there any issues you would like to raise?

Thank you very much for your time and the information you have shared with me. This will be very valuable for my research. I may need to contact you if there is a need for you to clarify information or if I need to ask you additional questions. Once I finish the project, I will send you a report to read.

Appendix 4

Service User Interview Schedule

Introduction

- o Introduce yourself
- o Review the purpose of the study, explain method of data capture and analysis
- o Assure participant about confidentiality and anonymity
- o Estimated interview completion time
- o Benefit of study, any questions?
- o Sign consent form

Interview participant's details

Date…………………………………   City of residence…………………………………

Place of interview…………………...   Gender…………………………………………

 Age…………………………………

1. Tell me about your background.

2. Describe to me the money transfer services available to you and your experiences with your service provider when remitting back home.

3. Tell me about when and how you started using the mobile remittance network?

4. Describe to me other parties that you interact with, who plays what role and how often on your typical day when you transferring money using the remittance service (How does the network work?)

5. Tell me about the specific processes and conditions that you feel contribute to the use or non-use of the mobile remittance service?

6. In your opinion, what activities and strategies were employed by the service provider to motivate and justify its service and how did they shape your decision to join the network?

7. What was your main consideration(s) in settling for your choice of transfer channel?

8. Has enrolling onto the mobile remittance service improved your life when compared to using other alternatives? If so, describe in what way you think that it has?

9. Would you like to add something else?

Thank you very much for your time and all the stories you have shared with me! This will be very valuable for my research. I may need to contact you if there is a need for you to clarify information or if I need to ask you additional questions.

Appendix 5

Field Observation Guide

During field observations, I recorded descriptive elements including the following:

- o Description of the physical evidence/setting – layout: outlet description, position of technological artefacts, branding ==etc.==
- o Description of the actors – the roles of individuals (I will not record names but focus on roles)
- o Activities – focus on personnel manning the site and what they are doing during the observation (with focus on activities surrounding the use of technological artefacts, if they referred to particular activities in interviews, I explored these further (if applicable), if they felt something was particularly important, I explored this in detail in follow-up observations (if applicable)
- o Events – recording of particular events e.g. speaking to agents on training, recording information
- o Time - record the sequence of events
- o Goals – record what the actors wanted to accomplish
- o Perception – my own feelings and/impressions in relation to the observation

Codes	Code Groups/Sub-category	Categories	Themes
Micro-level network creation activities in the translation process (using ANT)			
Role of human actors; Role of non-human actors; partner selection criteria; emergent translation process phases; problematisation activities; interessement strategies; enrolment strategies; examples of inscriptions; mobilisation strategies; negotiation activities; subterfuge activities; motivation activities; resistance activities; emergent subnetworks; political activities; power issues; agent recruitment; agent activities; agent supervision and monitoring; BTL marketing activities; ATL marketing activities; emergent network positioning; brand ambassador activities; use	-Nature of human-technology relationships -Translation process -Role and interests of inanimate objects -Power issues in translation process - --iterations in network creation -examples of complexity in relations	-Dynamic interactions of actors Tension between actors' interests during different network creation phases -Relations between heterogeneous elements of a sociotechnical network -Political activities of human and non-human network actors	-Sociotechnical network creation is a complex political process in which numerous strategies are deployed by both human and non-human actants to facilitate or constrain translation. - ANT's translation process is used to trace the major actors, their relationships and milestones realised in the formation of the mobile remittance network. - ANT explains power dynamics at the micro-level - In practice, the moments of

acquisition activities; user feedback; user training; risk management; advantages of emergent digital platform; constraints of emergent digital platform; advantages of counter-networks; constraints of counter-networks.		-Power relations	translation are a complexity of overlapping, iterative technology-related activities rather than separate, linear phases. **-**Negotiation intensity varies per translation phase
Role and activities of institutions (non-human actors at the macro-level) Focal actor commercial objectives; Identified macro-economic objectives; Social objectives; Institutions; Industry standards; Location of focal actor headquarters; credentials of project team; focal actor business development skills; Focal actor's business development experience; focal actor technical expertise; focal actor entrepreneurship; symbols of personal credibility; symbols of personal competence;	- Institutions as non-human actors -focal actor communication approaches Non-human contextual actors -Social structures influencing technological change -Contextual influence -symbolic management to garner network legitimacy	-Institutions as parts of the network Legitimation activities Legitimation strategies -Symbolic management to garner legitimacy -Macro-level political activities to garner legitimacy	- Different legitimation strategies, are used by the focal actor to illuminate and foreground the role and influence of institutions (at the macro level) in the formation of the sociotechnical network of mobile remittances. - Network creation is a dynamic process

symbols of personal commitment; name dropping;		Macro-level power issues to garner legitimacy	
Managing perceptions in network Positive business history; brand prominence of the focal actor, perceived quality of focal actor products/services; focal actor resilience; financial performance; market size and actions;; high quality performance; potential transaction uncertainty; political risks; economic risks; social trust; regulatory constraints; market supporting institutional voids;	-Partner recruitment activities -User recruitment activities -Communication activities -Branding activities	-Reputation of focal actor as credibility enhancer Reputation as an antidote to perceived high risk	Reputation of products and company emphasise the importance of social context and facilitate network creation and long-term stability
History and institutions governing remittances Remittances as care; Remittances as love; remittances as sacrifice; existing remittance practices; user perception of omalaisha; target user perception of the emergent digital channel;	-Role of remittances - Remittance channels -Relationships between remitter and receiver	-Historical of remittances -Remittance scripts -Institutions related to remittances	-Network creation is shaped by context surrounding the target users -Network creation is an emergent but also historically-shaped phenomenon

				-Network creation is a social (collective) endeavour
		255		

Appendix 7

Samples of notes from the researcher's diary

Sunday 2 June 2019

I had a short WhatsApp call with my supervisor. It lasted about 30 minutes. We discussed the following issues:

Together we went through the feedback that she had given me in relation to the Analysis of Findings (Chapter 5) and the Discussion (chapter 6) reports that I had submitted in May for her review. We highlighted issues that needed attention:

- o Refine and align propositions with the proposed theoretical model.
- o Add more evidence in chapter 5 particularly on areas she had highlighted – the risk was that the chapter would be too long
- o Tabulate most of the quotations for ease of reference by the reader
- o Cut off some material in chapter 6 as it belonged in the conclusion chapter (chapter 7)
- o Another area of concern was the limited time remaining if I wanted to submit the final document in August.

Thursday 8 August 2019

I finally submitted my entire research report consisting of seven chapters after incorporating the feedback and corrections from my supervisor. The report includes the research problem, a literature review on study setting and remittances, theoretical underpinnings (ANT and the Legitimacy Perspective), the methodology, analytical framework, findings from my research, and further work. I am expecting to receive feedback from my supervisor within one week and work on any corrections. Within that week I will be submitting the final version of the report to the Doctoral Office. Meanwhile areas needing immediate attention include:

- o Editing for obvious typos
- o Attending to the contents and reference pages
- o Attending to propositions which are still not quite aligned with the proposed theoretical model
- o Consider engaging a professional editor to reduce repetition – its good practice for a PhD report