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Pied Pipers and Followers: Interorganisational Alignment in a Health Information System Implementation

Short Paper

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Abstract

In the public sector, projects are one of the main mechanisms of implementing strategies and that is evident in healthcare. Extant studies of health information systems (IS) implementations find that IS alignment enables organisations to meet their strategic objectives; conversely, misalignment can lead to unintended, and often adverse, results such as the abandonment of health IS projects. Studies attribute misalignments to strategic drift, which we find more likely in pluralistic settings given multiple parties, with potentially competing goals and interests, attempt to implement a shared strategy. This study contributes to extant literature by exploring IS alignment as a dynamic process in the context of a 20-year health IS implementation involving multiple organisations from government, public, and private sector. The question we aim to address for governments, developers, and implementers - how do we collectively move beyond the short-lived success of projects to achieve the envisioned strategic benefits of health IS?

Keywords: IS Alignment, Alignment Practices, Strategic Drift, Health IS, Responsible IS Research

Introduction

Information systems alignment (IS alignment) is the degree or the process by which information system (IS) strategy and structure support or inhibit organisational strategy and structure, thereby influencing how intended strategic objectives are achieved (Gerow et al. 2014). Because of its significance to achieving strategic goals, IS alignment remains one of the most relevant areas of concern for both scholars and practitioners (Coltman et al. 2015; Kappelman et al. 2020). However, despite its long-standing tradition of academic research, extant studies have predominantly been firm-centric and adopt the static view of IS alignment as an outcome of the strategy formulation process within an organisation (Chan and Reich 2007; Coltman et al. 2015; Renaud et al. 2016). The pervasiveness of the static view creates a two-pronged challenge: it fails to provide guidance for managers and strategists on the process and practice of alignment (Karpovsky and Galliers 2015; Renaud et al. 2016); and, it discounts how misalignments can occur over time in the course of strategy implementation (Martensson 2004). Baker and Singh (2019) attribute misalignments to strategic drift, where strategic drift is defined as unintended deviations between an organisation's intended and realised strategies (Ciborra et al. 2000). In addition, the enduring focus of alignment scholars on the conventional organizational structures, i.e., firms, has created a dearth of

research exploring IS alignment in emerging – and increasingly pluralistic – organisational forms (Coltman et al. 2015; Reynolds and Yetton 2015), as in the context of large-scale digital transformation which necessitates interorganisational alignment. Strategic drift is an increasingly prominent challenge in highly pluralistic settings, involving multiple organisations in varying conditions (Llamzon et al. 2021).

Healthcare is considered as one of the most complex and highly pluralistic settings for strategy and IS implementation (Chiasson and Davidson 2004; Denis et al. 2007). In healthcare, achieving the strategic benefits of health IS implementations necessitate a collective, integrated approach across government, public, and private organisations (WHO 2019). Extant studies of health IS find that IS alignment enables organisations to achieve organizational objectives (Bush et al. 2009); conversely, misalignments prevent them from attaining intended benefits of IS implementations (Findikoglu and Watson-Manheim 2016). However, the sheer number of parties involved in health IS implementations mean precise planning documents and top-down strategies are insufficient for long-term success in this context (Berg 2001). As evidence of the difficulty of alignment in this sector, Levis (2019) estimates that 70 percent of health IS projects fail to meet or deliver their intended objectives and extant studies of health IS ranging from hospital-wide to country-wide implementations corroborate its prevalence (Berg 2001; Findikoglu and Watson-Manheim 2016). Moreover, the over-emphasis on demonstrating successful health IS outcomes based on stand-alone, localised implementations has created significant barriers to the large-scale integration and meaningful use of IS in health systems (Huang et al. 2017; Tomlinson et al. 2013). Health IS projects can still fail as they gradually diverge from their planned trajectories over time, nullifying their intended beneficial outcomes (Huang et al. 2017). Against this backdrop, our overarching research question is: how do organisations respond to strategic drift in health IS projects to prevent misalignment?

The predominance of the static view as well as the continuing emphasis on IS alignment within conventional firms creates research-practice gaps that prevent practitioners from fully benefiting from extant alignment frameworks in evolving organisational contexts (Renaud et al. 2016). Utilising the process-oriented approach to alignment can assist in improving IS implementation failure rates in practice (Renaud et al. 2016; Tallon 2008). To address these gaps, we explore IS alignment as a dynamic process in the context of a 20-year public health IS implementation in the Philippines. The information technology artifact is an open-source electronic medical records (EMR) system developed by a team of academics in 2004 as their university's contribution to country-wide health system reform aimed at improving the delivery and quality of primary care services. Our aim is to examine the sources of strategic drift, in which levels they occur, and how different organisations manage strategic drift to successfully achieve their intended strategic objectives. Moreover, the unconventional and fluctuating organisational forms emerging from this 20-year implementation enables us to investigate IS alignment as a dynamic phenomenon, potentially influenced by strategic drift over time, in a pluralistic context. We address Coltman et al.'s (2015) and Reynolds and Yetton's (2015) calls for research on IS alignment beyond single organisational settings as well as Karpovsky and Galliers' (2015) call for further research on the microprocesses and practices of alignment. This study contributes to extant IS literature by addressing calls for responsible IS research that investigate the wider social impact of IS implementations (Davison et al. 2019). Findings from this study can assist practitioners who seek to align their organisational and IS strategies, particularly managers working in health IS and similar pluralistic contexts.

Background Literature

Challenge of IS Alignment in Healthcare

In spite of the long history of Information systems alignment (IS alignment) research in the fields of strategy, management, and information systems (Coltman et al. 2015), both practitioners and academics continue to lament the difficulty of IS alignment in practice (Kappelman et al. 2020). There is little consensus on the definition of IS alignment and how it is achieved (Renaud et al. 2016). In this study, Benbya et al.'s (2019) definition of IS alignment as “an emergent process of dynamic interactions and continual adjustments between business and IS across multiple organisational dimensions ... and levels” (p.1) is adopted. Notwithstanding the contributions of extant IS alignment literature, the temporality, actions, and sequence of activities that lead toward and away from alignment remain understudied (Chan and Reich 2007; Coltman et al. 2015). This proposed problem-led research accentuates opportunities to contribute to the body of research by exploring IS alignment as a dynamic process in a pluralist context.

Extant studies have predominantly focused on dynamic alignment at the organisational level, with many underscoring top management's role in strategy processes including formulation, planning, and communication (Chan and Reich 2007). However, deviations from an organisations intended strategies as can occur as strategy is implemented or operationalised (Martensson 2004). Ciborra et al. (2000) argue that strategic drift – defined as any divergence in an organisation's intended information technology (IT) and business objectives – occurs as strategy is realised or implemented over time. Thus, an equally important but understudied perspective views alignment between intended strategy and realised strategy (Martensson 2004). Moreover, Ciborra et. al (2000) emphasise strategic drift as externally motivated or driven by exogenous factors. While Baker and Singh (2019) find that strategic drift can be internally-motivated, influenced by actors' agency and receptiveness to strategies as they are implemented within organisations. Baker and Singh (2019) underscore the need for further research on strategic drift given its influence on IS alignment, particularly empirical studies on the practices of addressing or managing drift over time. Considering the dynamic, multilevel nature of alignment (Benbya et al. 2019), we conceptualise strategic drift as any divergence from an organisation's intended and realised strategies, driven by both extra-organisational (Ciborra et al. 2000) and intra-organisational factors (Baker and Singh 2019).

With the increasingly prominent role of IS in development and societal change, ensuring the alignment of information systems with overarching strategies and structures is a pertinent practical challenge for firms and governments alike (Leviss 2019). Information systems alignment (IS alignment) influences how IS supports or inhibits the achievement of a firm's strategic objectives (Chan and Reich 2007; Gerow et al. 2014). Extant studies of health IS implementations find that IS alignment enables healthcare organisations to meet their strategic objectives, such as improving their service delivery models (Bush et al. 2009). Conversely, studies have also demonstrated that misalignments not only prevent organisations from attaining their intended benefits but may also lead to unintended and negative outcomes (Findikoglu and Watson-Manheim 2016). Renaud et al. (2016) argue that addressing IS alignment literature gaps can help improve IS project failure rates. The benefits of heightened resource- and decision-making efficiency are indispensable to emerging economies in the southeast Asia region that continue to struggle with significant inequalities around healthcare services (Lu and Marcelo 2021). However, in practice, implementers continue to lament the difficulty of successfully implementing health IS. Extant studies find that 70 percent of health IS fail to deliver their intended outcomes (Leviss 2019). Successful health IS implementation is contingent on a collective, integrated approach (WHO 2019); however, many of these health IS are implemented in stand-alone projects or pilots (Huang et al. 2017). This fragmented approach evident in uncoordinated investments and low degree of cross-sector cooperation and collaboration are counter-intuitive to the sustainable development imperative (WHO 2017). To overcome the “pilotitis” that has long plagued the healthcare sector, Huang et al. (2017) suggest focusing efforts on addressing the “sustainability failure” of projects rather than the short-lived success of localised pilot implementations.

In the context of contemporary organisations, there is an increasing need to consider IS alignment as a dynamic phenomenon (Renaud et al. 2016). The predominant static perspective on IS alignment neglects the possibility of misalignments occurring as strategy is implemented over time, and the influence of other actors in this process (Coltman et al. 2015; Martensson 2004). Baker and Singh (2019) argue that these misalignments are rooted in strategic drift – the unintended deviations between a firm's intended and realised strategies (Ciborra et al. 2000). In the context of health IS implementations, projects can still fail as they gradually diverge from their planned trajectories over time, nullifying their intended beneficial outcomes (Huang et al. 2017). Second, the prevalence of the unitary perspective of organisations neglects the influence of localised actions and agendas on IS alignment (Baker and Singh 2019; Berg 2001; Coltman et al. 2015). Strategic drift can occur for a variety of reasons beyond top management's or any actor group's control and can lead to misalignment (Baker and Singh 2019). Extant IS alignment frameworks were developed in the context of the conventional, hierarchical firm (Chan and Reich 2007). However, the top-down control and strategy implementation mechanisms typical of unitary settings may not be effective in highly pluralistic settings, such as healthcare. In pluralist settings, power is more diffuse across actor groups; there may be multiple strategies at play simultaneously; and actor groups may pursue different, even conflicting, objectives (Denis et al. 2007). Hence, the challenge of managing strategic drift and misalignment is compounded in pluralist settings such as healthcare (Llamzon et al. 2021).

Organisational Pluralism and Strategic Drift

Organisational pluralism is described as multiplicities in preferences, logics, and power – the degree and interactions of which vary with organisational structure (Brès et al. 2018). Healthcare is steeped in organisational pluralism (Denis et al. 2007). Healthcare is among the most complex service sectors where alignment is a significant hurdle, because it necessitates a diverse range of stakeholders participating, cooperating, and competing to deliver a shared value (Lipsitz 2012). In as much as the strategic IS alignment is defined by both intra- (strategy, structure) and extra-organisational (surroundings) dimensions, pluralism can also be characterised as either internally or externally motivated (Jarzabkowski and Fenton 2006; Llamzon et al. 2022). While the applications and benefits of IS are extending beyond firms (Majchrzak et al. 2016), IS alignment research continues to concentrate on the intra-organisational perspective in the context of hierarchical organisations (Chan and Reich 2007; Coltman et al. 2015). The enduring focus of alignment scholars on conventional organisational structures, i.e., firms, has created a dearth of research exploring interorganisational alignment typical of emergent organisational structures, i.e., networks, ecosystems (Coltman et al. 2015; Reynolds and Yetton 2015). Emergent or unconventional organisational structures are distinguished by their degree of pluralism (Bres et al. 2018). Pluralist settings are characterised by the co-existence of multiple competing goals and interests of multiple groups within a single organisation or multiple organisations as in a network (Jarzabkowski & Fenton, 2006). Pluralism exists where there is a structure for interaction, collaboration, and consensus among diverse actors with potentially conflicting goals and interests (Hardy, 1991). Environmental dynamism and the evolving nature of organisations inherently contribute to the research-practice gap, constantly rendering a mismatch between existing IS alignment frameworks and the fast-changing reality of practitioners (Renaud et al. 2016). Thus, as a process influenced by shifts in organisational structures and surroundings, it is imperative to explore IS alignment from an interorganisational perspective in the context of increasingly pluralistic settings (Llamzon et al. 2022).

Extant studies of HIS indicate that organisational pluralism is a source of strategic drift and consequently, misalignment. From the intraorganisational perspective, Berg (2001) underscores that the sheer number of parties involved in HIS projects means precise planning documents and top-down strategies are insufficient for long-term success in this context. Bush et al. (2009) find that the involvement of multiple parties with varying needs and preferences creates excessive delays in decision-making in the early stages of IS strategy implementation. Strategic drift can also occur as strategy is operationalised, particularly when users (e.g., employees) exercise power and reshape strategy by responding with deliberate resistance through non-use, improvisations, or sabotage (Baker and Singh 2019). As an example of the challenge of alignment across organisational boundaries and its outcomes, Klecun (2016) finds that the differences between the goals and visions of policymakers and that of system developers can present a barrier to the successful integration of HIS, and consequently, a barrier to IT-enabled transformation of health systems. The combined novelty of the information technology and of the multi-organisational partnership structure typical of HIS projects introduce various sources of complexity, creating significant challenges even in small-scale projects (Nilsen et al. 2020). On a country-wide scale, Nancy et al. (2016) find that the prevalence of interdependence, conflicting goals, and divergent interests between actor groups and across levels create challenges for HIS implementation. Findikoglu and Watson-Manheim (2016) find that the deliberate resistance of physicians at the individual practice level can coalesce into misalignment at the macro-level, ultimately preventing governments from achieving the population-level benefits of HIS. Additionally, missing macro-environmental factors such as standards can also inhibit interoperability and long-term usage of HIS (i.e., electronic medical records) (Reisman 2017). Broadly, IS alignment enables organisations to meet their strategic objectives including improving their healthcare service delivery models (Bush et al. 2009; Chan and Reich 2007; Gerow et al. 2014). Conversely, studies demonstrate that misalignments not only prevent organisations from attaining their intended benefits but also lead to unintended adverse outcomes (Findikoglu and Watson-Manheim 2016). The examples drawn from the literature support Baker and Singh's (2019) finding that sources of strategic drift are dispersed over time and levels within organisations; whilst demonstrating that the likelihood of strategic drift and sustainability failure of HIS increases with both internally and externally motivated pluralism. Using organisational pluralism as our lens, we examine alignment as a dynamic and multilevel phenomenon by exploring the multiplicities that create strategic drift within and across organisations, and the corresponding responses of organisational actors that promote or prevent the sustainability failure of a HIS implementation.

Case Study Method

We adopt a case study method in line with the objectives of the research. Case study is most suited for exploratory research aimed at addressing process-oriented research questions (Rynes and Gephart Jr 2004). A case study method aligns with the process-oriented perspective of alignment, which in turn allows us to capture the dynamic, multi-level nature of alignment across organizational boundaries (Tallon 2008). Further, we adopt Karpovsky and Galliers' (2015) definition of alignment activity as "any action that any particular organisational actor takes in the process of finding and/or implementing IS that would potentially support business needs" (p.139). Adopting this definition allowed us to distinguish IS alignment practices from others. Given the exploratory nature of the study and the nascency of our research context, we follow Gioia et. al's (2013) systematic inductive approach for our data analysis. The preliminary results are summarised into a data structure presented in Figure 1.

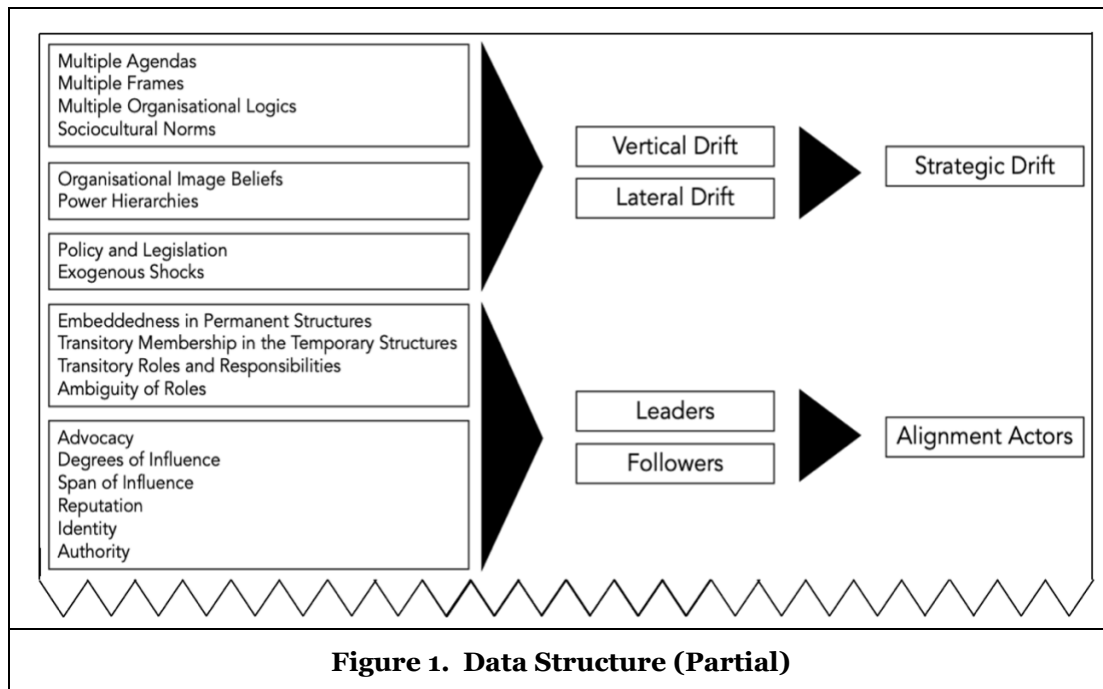
In this study, we examine PISCES¹, an open-source electronic medical record (EMR) system designed for primary healthcare facilities in the Philippines. PISCES patient records are stored in a local server, housed within the facility, and are accessible anywhere in the facility through a local area network, making paperless healthcare service delivery possible. The system captures and consolidates data at the point-of-care and allows health workers to generate reports on-demand, enabling timely, relevant, and evidence-based decision-making both at the management and governance levels.

Initiated by a team of health informatics academics in 2004, PISCES began as a pilot project in partnership with the Pasay City government. In its infancy, the system was designed to improve the implementation efficiency of vertical public health programs in the country. From 2013 onwards, the system has been continuously enhanced to better align with national ehealth strategy and programs. Multiple partner organisations have been involved in its development since, including international agencies and local (city or provincial) governments. The system's implementation footprint has grown to over 200 health facilities in the Philippines, with some using PISCES for over ten years. However, PISCES is mainly implemented through pilot projects supported by government grants or international donors. More recently, there have been recent cases of abandonment as reported by the system proponents, suggesting strategic drift. As such, despite a decade and hundreds of healthcare facilities with access to the system, there is little evidence that PISCES has been sufficiently integrated into the countrywide health system, enough to see its intended strategic benefits. The system's storied implementation as well as the current sustainability challenges makes it an ideal case for the objectives of this research.

The sample of interviewees are drawn from the network of organisations that have either directly or indirectly influenced PISCES' development at any point from 2010 to 2020. This network consists of the developers (proponents of the system), implementers (city local governments and their respective healthcare service delivery networks which may include hospitals, health centres, clinics, civil registries, pharmacies, etc.), government agencies (Department of Health, national insurance provider, etc.), and international agencies (e.g., UNICEF). The analysis begins with the largest PISCES implementation network in the Philippines which consists of at least 91 health facilities in the largest, most populated city in the country. The partnership between the developer and this implementer was initiated by the city local government in 2010. This demonstrates a bottom-up response to shifts in national strategies and policies of that time regarding the use of information technology to improve public services. The case of PISCES thus provides contrast to extant studies of health implementations typically implemented through top-down mandates by national governments (e.g., Findikoglu and Watson-Manheim (2016); Nancy et al. (2016)).

Data sources include 1) publicly available documents and information about the country-wide digital healthcare strategic framework, the country's health system, and the local and international regulatory and policy environment; and 2) semi-structured interviews with organisational actors directly involved in the PISCES implementation projects and indirectly involved. Recruitment of participants was facilitated through personal and professional networks and snowball sampling. The interview protocol included questions related to: 1) the roles and responsibilities of the interviewee and their perceived significance of

¹ a pseudonym is used to preserve anonymity



PISCES in the country or locality; 2) the roadmap of implementation (i.e., key phases and outcomes); 3) project implementation (i.e., key challenges and responses); and 4) the benefits of implementing PISCES and any improvements in line. Interviews were conducted for 45 minutes (average). The focus of the interview is on the challenges during the IS implementation, throughout different phases and across significant points of discontinuity (e.g., end of project, termination of grant). Focusing on challenges and tensions allowed us to identify sources of strategic drift that may lead to misalignment (i.e., negative outcomes) and the corresponding responses of the organisational actors that are (mal)adaptive. We have so far conducted the first round of 12 interviews resulting in approximately 10 hours of recordings (139 pages of interview transcripts, 11 pages of structured interviews).

Case Study Analysis

In the first phase of the analysis, we drew on the multiple sources of data (interviews, archival sources, project reports, relevant administrative orders, policies, and legislation) to build a detailed narrative of PISCES' history relative to the organisations involved in its development and implementation, as well as the overarching regulatory and legislative changes in the environment within the period of concern. This narrative describes details of events and actions that occurred from the years 2010 to 2020. Following Langley (1999), we used a temporal bracketing strategy to identify discontinuities or phases to structure the process data. We identified four distinct periods that emerged from the interviews based on their strategies for PISCES: 2010-2012 expand implementation footprint; 2013-2015 exchange information across the service delivery network; 2016-2018 enhance design and features to comply with new standards; 2019-2020 commercialise PISCES to sustain existing implementations. We summarised the case narrative into a matrix. The aim is to trace the pertinent sources of strategic drift – across strategy, structure, or surroundings – and the corresponding alignment practices that allow the organisations to address or prevent misalignment within each period of concern. In the second phase, we began the analysis by identifying first order codes or open coding to identify the common themes and the preliminary set of categories with the intent of preserving the interviewees' interpretations and terminologies (i.e., in-vivo terms). This was followed by selective coding, which produced the second-order codes that identify broader but fewer categories more directly in line with the overarching research question leading our investigation. Figure 1 depicts the partial data structure that emerged through our iterative coding process, presenting (from left to right) the first-order codes, their relation to the second-order categories, and finally the aggregate themes: the sources of strategic drift and the varying combination of alignment actors, structures,

and practices in response to drift. These overarching themes will serve as the foundation of the process model, to be assembled in the third phase of the study.

Preliminary Findings

Patterns emerging from the data suggest that ‘information management’ is the locus of alignment in this highly pluralistic setting, which provides an incentive for organisations to either directly participate in the PISCES projects (as part of the development team or as an implementer) or support its implementation through policies and programs. This finding builds on Tallon’s (2008) prior work by extending the process-oriented approach to an interorganisational context as opposed a single firm, wherein most alignment research has historically been conducted. In terms of strategic drift, it is apparent from the data that there is a need to distinguish between two types of drift based on the drift orientation. Strategic drift can occur vertically within organisations (vertical drift) and laterally across organizational boundaries (lateral drift). This distinction is relevant particularly in determining the sources of strategic drift. One emerging pattern is that respondents who assume top management or more ‘strategic’ roles in the project or within their organisations (leaders) identified leadership transition (i.e., changes in highest positions in an organisation) is the principal challenge and primary reason for strategic drift leading to sustainability failure of a project. Primarily because of changes in IS strategy as the PISCES implementations progressed were largely agreed-on – or at times, unilaterally decided – within this level or within this actor group; a finding that confirms critiques from extant strategy-as-practice literature on how practices such as strategy formulation and strategic decision-making continues to be confined to ‘elites’ in organisations (Jarzabkowski and Paul Spee 2009). However, in the context of implementing strategy in an interorganisational context, it becomes apparent that the ‘strategy elite’ – with exceptions – have limits to their influence across organisational boundaries. In contrast, for respondents who were primarily responsible for strategy implementation including project managers and system developers, the challenges they identified were more granular and particular to their day-to-day work, such as conflicts between the logics of software engineers and clinicians or the complexities of maintaining an open-source software. Interestingly, when asked of their role in shaping IS strategy, they expressed that they were ‘not in a position’ or ‘do not have that voice’ to influence the strategic direction of neither their project nor the information system overall. This underscores the distinction between leaders and followers; that even if project managers or system developers diverge with the overall strategy in belief or in practice, they are not necessarily able to steer the project or the IS structure in a different direction as easily as leaders would. As such, vertical drift as strategy is implemented within an organisation (e.g., PISCES’ parent organisation) does not appear to be as substantial. Top-down mechanisms of strategising and decision-making remain effective in this context. Whereas lateral drift (i.e., from leadership transitions) is emerging as the principal threat to sustainability of public sector health IS. Moving forward, it is thus pertinent to focus on lateral drift and the different alignment practices that could address the ensuing strategic drift and potential misalignment, particularly the role of leaders and how their personal and professional advocacies, identities, and other factors shape their strategic decisions.

In terms of structure, we find interesting tensions between the temporary organisations created around projects (defined by project boundaries) and the permanent organisations (e.g., university, local government) from which they develop. *Leaders* are typically affiliated and tenured within permanent organisations (e.g., university, government agencies), while *Followers* are on project or casual contracts. We find that the *embeddedness* of these *alignment actors* in permanent organisations affect their *degree or span of influence* on IS strategy and its implementation. Pluralism in temporary organisations is discussed extensively in Brès et al. (2018). We plan to investigate the tensions between temporary and permanent organisations further as structures and their varying degrees of pluralism significantly impact IS alignment (Llamzon et al. 2022). Surroundings are crucial in the progression of IS alignment (Llamzon et al. 2022). For PISCES, this is starkly illustrated in the persistent references to policies and legislation that have shaped healthcare service delivery in the Philippines, including the Data Privacy law (2012) and Universal Healthcare law (2019) across the interviews. We find links between legislation that defined the structure and financing of the health system (i.e., Local Government Code of 1991, National Health Insurance Act of 2013), which in turn influence the technical design of PISCES in terms of its modules and reporting functionalities. For example, from 2013 onwards, the system developers had to continuously modify PISCES’ reports to comply with standards in line with the nationwide roll-out of the electronic

claims (eClaims) system. The eClaims system follows the reforms stipulated in the National Health Insurance Act of 2013.

The exogenous shock caused by the pandemic has created misalignments between the long-standing system functionalities and the user's requirements. Although the system was envisioned to promote telemedicine in the Philippines from its inception, perennial gaps in the country's information technology infrastructure (e.g., poor internet connectivity, lack of continuous supply of electricity) has prevented the proponents from implementing a cloud-based EMR. Cloud computing technology was central in health information exchange and continuity of services across all sectors especially in the peak of the COVID-19 pandemic (Alhomdy et al. 2021). As a result, contrary to the astronomical uptick in telemedicine and digital health globally (Lee et al. 2022), PISCES' user base declined significantly – including facilities continuously using the system since 2012 – to the point that one proponent describes the system as “obsolete”. These findings underscore the risk of the “alignment trap”, where a system that has been functional and compliant with regulatory standards for decades has become too rigid to navigate a sudden shift in user requirements caused by an unforeseen, impactful event.

Future Research

The next steps for the research will focus on the completion, triangulation, and substantiation of the data structure. Second and third round interviews will be conducted to validate the preliminary findings and interpretations of the researchers from this round of data analysis. Preliminary findings based on the data structure (Figure 1) will be presented in the conference in December 2022.

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