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Researching Pure Digital Entrepreneurship – A Multimethod Insider Action Research approach

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Researching Pure Digital Entrepreneurship – A Multimethod Insider Action Research approach

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ABSTRACT

Knowledge production in Pure Digital Entrepreneurship (PDE) needs to reflect the non-linear nature of a journey defined by digital artifact and platform creation. Accordingly, this paper proposes and offers practical guidance on the use of *Multimethod Insider Action Research* (MIAR) as a suitable research design for studying the entrepreneurial journey in this context. It argues for integrating first-person *Reflective Practice*, second-person *Collaborative Inquiry* and *Design Research* for third-person knowledge production that balances rigour and relevance. While calls for such forms of longitudinal process inquiry have largely gone unanswered due to identified challenges, this paper uses a case narrative to illustrate the feasibility of conducting them in a PDE context.

1. Introduction

The paucity of research on *digital entrepreneurship* is the basis for a first agenda-setting entry in a top journal of the entrepreneurship discipline. In this entry, Nambisan (2016, p.14) highlights the need for methodologies that reflect the incremental and non-linear paths that digital artifacts and platforms facilitate in entrepreneurial initiatives. This call echoes similar requests across the entrepreneurship discipline for research designs that adapt to the uncertainty and non-linearity of the entrepreneurship phenomenon (Bygrave, 2007).

Entrepreneurship is a process of emergence (Wiklund et al., 2011). Hence, it requires a 'shift in inquiry from entrepreneurship as an act to entrepreneurship as a journey' (McMullen and Dimov, 2013). Studying this journey necessitates methodological pluralism and diversity (Leitch et al., 2010). Yet, several scholars bemoan the dominance of a functionalist paradigm (Landströmm et al., 2016) and the corresponding dearth of event-driven process inquiry (Aldrich, 2001) - which follows the journey from inception, and captures events *as they happen* (Davidsson et al., 2011). Further, the outcome of such research should result in knowledge that balances rigour and relevance, as well as produce prescriptive practitioner knowledge through a design science logic (Dimov, 2016; Berglund et al., 2018). However, these recommendations have largely gone unheeded due to several identified challenges.

Given their longitudinal and unpredictable nature, main challenges appear to hinge on the feasibility of successfully conducting them. Event-driven process research is considered time-consuming and risky within the constraints of short-term academic research. However, we observe that distinctive features of the Pure Digital Entrepreneurship (PDE) phenomenon help overcome some of these challenges, thus rendering them more attainable in this context. We simply define PDE as entrepreneurship in which digital artifacts and platforms are the new venture ideas and market offers. We dissect and elaborate on its distinctive technological basis as it relates to the feasibility of conducting event-driven process research.

Accordingly, we propose and illustrate through a case narrative, the use of Multimethod Insider Action Research (MIAR) as

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Table 1

Technologies Enabling Digitisation & Digitalisation of Entrepreneurship.

Source: Adapted from Nambisan (2016) and Yoo et al. (2012)

Technology	Definition	Defining Characteristics/Implications
Digital artifacts	<ul style="list-style-type: none"> ● Components that form part of a new product or service ● <i>Examples</i> - mobile apps, software, media content and more. 	<p>Characteristics</p> <ul style="list-style-type: none"> ● Reprogrammable, editable, recombinable and open (Kallinikos et al., 2013) <p>Implications</p> <ul style="list-style-type: none"> ● Boundaries of digital new venture ideas and outcomes remain fluid (Yoo et al., 2012) ● Products or services can be easily enacted and re-enacted in iterative cycles of experimentation (Ries, 2011)
Digital platforms	<ul style="list-style-type: none"> ● Shared, common set of services and architecture that serve to host complementary offerings including digital artifacts ● <i>Examples</i> – Apple & Google app stores 	<p>Characteristics</p> <ul style="list-style-type: none"> ● Major firm or platform leader assumes role of value creation and appropriation ● Platforms provide a network for other actors and firms to co-exist and thrive ● They have become central to firm innovation in the digital context. <p>Implications</p> <ul style="list-style-type: none"> ● Instil <i>generativity</i> in the process (unprompted & unexpected change usually from platform leader or uncoordinated audiences) – as such, results in unpredictability in the entrepreneurial process (Zittrain, 2006)
Digital infrastructures	<ul style="list-style-type: none"> ● Digital technology tools & systems ● <i>Examples</i> - cloud computing, social media, online communities, data analytics, makerspaces etc. 	<p>Characteristics</p> <ul style="list-style-type: none"> ● Facilitate communication and collaboration ● Aid innovation & entrepreneurship as they afford agility and reduced transaction costs ● Key external enablers of digital entrepreneurship (von Briel et al., 2017) <p>Implications</p> <ul style="list-style-type: none"> ● Foster hyper-connections and mutual dependencies among human actors, organisations, processes, and things (Yoo et al., 2012) ● Results in the democratisation of entrepreneurship with a diffused locus of entrepreneurial agency ● Control of innovation activities becomes distributed across multiple actors and organisations (Von Hippel, 2005)

suitable for studying the PDE journey. Our recommended MIAR approach combines first-person *Reflective Practice* (Schon, 1984), second-person *Collaborative Inquiry* (Heron and Reason, 2006) and *Design Research* (Sein et al., 2011; Dimov, 2016) for third-person knowledge production (Reason and Torbert, 2001). We commence by reviewing and integrating relevant literature on PDE and MIAR, and subsequently discuss the practicalities of design and implementation.

2. The phenomenon of Pure Digital Entrepreneurship

Digital entrepreneurship mainly lies at a nexus between the Entrepreneurship and Management Information Systems (MIS) disciplines, thus requiring an integrative, multidisciplinary perspective. An earlier definition describes it as entrepreneurship in which some or all of what would be physical in a traditional new venture has been digitised (Hull et al., 2007). This definition suggests *physicality* and *digitisation* as departure points for exploring core differences between PDE and more traditional forms of entrepreneurship. Whereby, physicality refers to the physical and tactile orientation of new venture ideas and market offerings, as well as the processes by which they are realised. Meanwhile, digitisation is the representation of information as ones and zeroes. When digitising techniques are applied to the transformation of social processes, the phenomenon is conceptualised as *digitalisation* (Tilson et al., 2010, p.2). Both digitisation and digitalisation are implicated in various forms of entrepreneurship and value creation in the digital age (Yoo et al., 2012).

2.1. Digitisation & Digitalisation of Entrepreneurship

The digitisation and digitalisation of entrepreneurship is made possible by three distinct but related typologies of digital technologies – digital artifacts, platforms and digital infrastructures – summarised in Table 1.

Nambisan (2016) argues that these technologies render entrepreneurial processes *less-bounded* in terms of their temporal and spatial structures, and result in a *diffused locus of entrepreneurial agency*. Given the varied levels of digital technology adoption in new ventures, the degree to which they shape value creation processes is bound to be significantly different across contexts. To avoid the term *digital entrepreneurship* from becoming a ‘catch-all meaninglessness’ (Wiklund et al., 2011), we view entrepreneurship in the digital age as a continuum between the extremes of *pure* digital entrepreneurship (PDE) and *pure* traditional entrepreneurship (PTE), with hybrid variations in between. On this continuum, digital technology use ranges from indispensable on the PDE end, to

dispensable on the PTE end with significant implications for how processes unfold. Our view appears consistent with observations by Giones and Brem (2017) who argue for reserving the term *digital entrepreneurship* for purer forms of the phenomenon.

2.2. Defining Pure Digital Entrepreneurship (PDE)

First, we note that PDE is entrepreneurship because it shares core attributes with most forms of entrepreneurship - such as the pursuit of opportunity, uncertainty and non-linearity of process. However, these similarities risk obscuring uniqueness brought about by pure digitisation and digitalisation of value creation. Thus, building on Davidsson's deconstruction of the *opportunity construct* (Davidsson, 2015), we define PDE as entrepreneurship in which digital artifacts, digital platforms or both, are the *new venture ideas* and market offers; while digital infrastructures, other platforms and related technologies are immediate *external enablers* of new venture emergence (von Briel et al., 2017). Whereby, digital artifacts and platforms represent non-physical forms of market offerings evident in such outcomes as software, mobile apps and social media platforms.

2.3. Distinctiveness of PDE & feasibility of event-driven studies

We contend that new venture ideas based on digital artifacts impose significantly different behaviours in the organisation and management of uncertainty, which partly informs the basis for the uniqueness of PDE journeys. As noted, digital artifacts are reprogrammable, editable and can be decoupled from one host and instantly infused into wider and constantly shifting ecosystems (Kallinikos et al., 2013). When contrasted with the physicality of traditional new venture ideas and offerings, we envisage a different type of entrepreneurial journey. Journeys based on the physicality of ideas and market offerings are often burdened by high transactions costs (Amit and Zott, 2001). Whereby, costly processes originate from activities such as the production and management of inventory, as well as latency of product and tactile service delivery. PDE new venture ideas and offerings on the other hand, are based on ephemeral and loosely coupled digital artifacts and components – meaning, multiple firms and actors can readily contribute expertise and resources towards their realisation. Hence, such ideas often translate into shorter new venture creation duration (Shim and Davidsson, 2018), lower realisation costs and multiple iterative cycles of experimentation (von Briel et al., 2018).

From a methodological standpoint, we maintain that the possibilities for inexpensive and rapid experimentation with PDE ideas and processes, equally accrue to *engaged scholarship* (Van de Ven, 2007) on the phenomenon. Precisely, the shorter duration of processes, and the low barriers to entry imply that 'hands-on experimentation' with PDE journeys within the constraints of academic studies is more realisable (Guthrie, 2014). Hence, we envisage the feasibility of an *enactive* and interventionist approach (Johannisson, 2011) to PDE process inquiry that uses MIAR as its primary tool.

3. Multimethod Insider Action Research – an overview

To appreciate MIAR, a general introduction to action research (AR) is crucial. AR is a broad classification for a transdisciplinary 'family of practices' (Reason and Bradbury, 2008) with a common Lewinian origin (Lewin, 1946). It is geared towards the production of 'actionable knowledge'- i.e., knowledge that balances rigour and relevance (Argyris, 1996). Within an organisational context, Shani and Pasmore (1985, p.439) define it as...

'...an emergent inquiry process in which applied behavioural science knowledge is integrated with existing organisational knowledge and applied to solve real organisational problems. It is simultaneously concerned with bringing about change in organisations, in developing self-help competencies in organisational members and adding to scientific knowledge. Finally, it is an evolving process that is undertaken in a spirit of collaboration and co-inquiry.'

This definition largely underpins our recommended MIAR approach and epistemology.

3.1. Epistemology of Action Research

AR is largely anchored in pragmatic philosophy. Pragmatists seek knowledge that is useful, and argue that thought is intertwined with action (Schön, 1995). Hence, AR derives from pragmatism, a radical and 'extended epistemology' (Heron and Reason, 2008) that integrates experiential, presentational, propositional and practical knowing. *Experiential knowing* is a fundamental form of knowing that is usually tacit, pre-linguistic and based on direct encounter in the world. It aligns with Dewey's (1997) assertion that experience is the ultimate test and represents what needs to be explained. Meanwhile, *presentational knowing* is artful knowing which translates experiential knowing into a communicable form such as stories, images and more. Its quality is judged by the degree to which creative expression helps readers journey down a real-world experience. *Propositional knowing* is knowing in intellectual terms such as concepts, constructs and models. Finally, *practical knowing* is knowing 'how-to' solve real-world challenges.

3.2. Methods in Multimethod Insider Action Research

Consistent with its pragmatic underpinnings, a multimethod research design may combine as needed, parts or all of different methodologies into one for *scientific* investigation (Mingers and Gill, 1997). When researching in the organisation or community

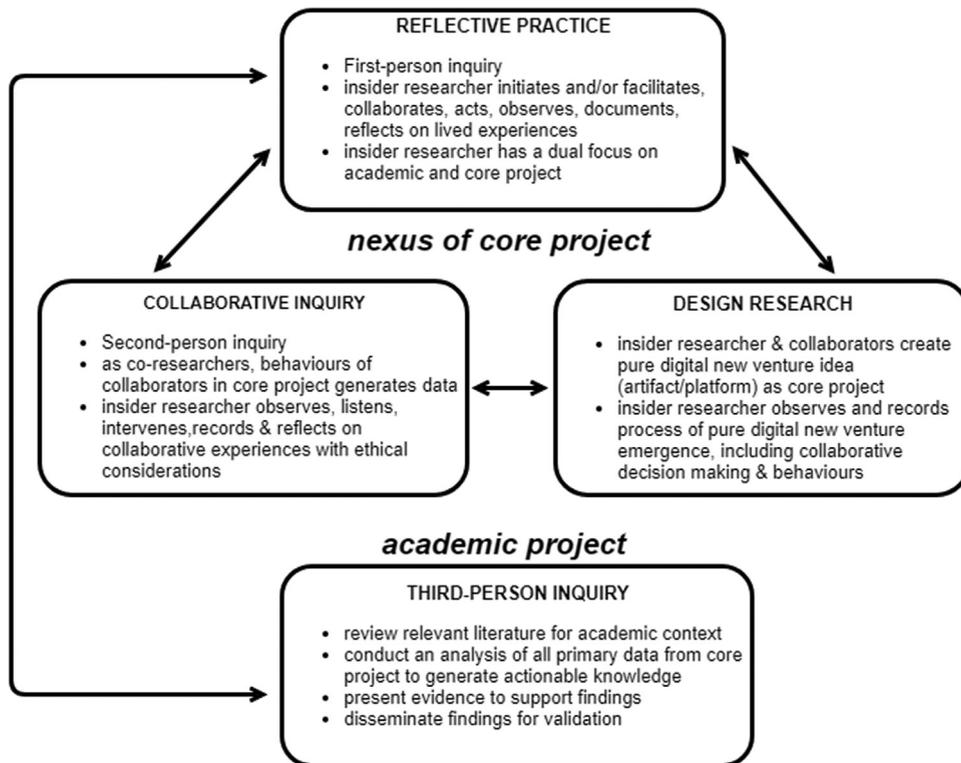


Fig. 1. MIAR Framework.

where one is also a member, *Insider Action Research* (IAR) presents a pathway (Coghlan and Brannick, 2014). Given the insider positionality of the researcher, IAR combines first-person **Reflective Practice** (Schon, 1984; Argyris and Schön, 1996) with second-person **Collaborative Inquiry** (Heron and Reason, 2006) for third-person knowledge production (Reason and Torbert, 2001). Reflective Practice (RP) is inquiry through ‘inner and outer arcs of attention’ (Marshall, 2001). Meanwhile, Collaborative Inquiry (CI) is described as research ‘with people, not on people’. Thus, with CI, collaborators become co-inquirers whose actions and interactions generate data. The data is recorded by the insider researcher within reasonable ethical judgement.

Given that IAR is a modular research design architecture, it allows complementary methods to be selected and subsumed into its fundamental framework, as necessitated by the phenomenon under study. This reasoning underpins our rationale for incorporating *Design Research* to form our proposed MIAR design for PDE inquiry. Fig. 1 is an illustration of how the different methods interact in a *core project* to generate knowledge for third-person audiences as the *academic project* (Zuber-Skerritt and Perry, 2002).

3.2.1. Design research

The Design Research (DR) dimension of MIAR focuses on studying the action and process of practically transforming ideas into concrete outcomes. Its emphasis is on the production of prescriptive knowledge such as models, frameworks and concepts which are assessed against criteria of value and practical utility (March and Smith, 1995). Indeed, similarities between the frameworks of AR and Design Research (DR) inform the rationale for a hybrid methodology called Action Design Research (ADR). ADR stems from observations that ‘*action research and the action of designing are so close that it would require only a few words to be substituted for the theoretical frameworks of action research to make it applicable to design*’ (Swann, 2002). In sum, the DR and AR processes are so similar, the cross-fertilisation of both is rather intuitive (Järvinen, 2007). Consequently, Sein et al. (2011) develop ADR by challenging the separation of design from the organisational context. ADR is therefore premised on the realisation that the act of designing is intertwined with the needs of the organisation. By incorporating DR in PDE studies, the pure digital new venture idea (opportunity) becomes ‘a design artifact’, developed and studied through the ‘generative power of recursive action’ by insider researchers and co-inquirers (Dimov, 2016). Recombining DR in the basic IAR research design architecture results in a comprehensive methodological *toolbox* for studying the multidimensional nature of entrepreneurial journeys.

3.3. Why Use MIAR – Rationale & Benefits

3.3.1. Rationale

The rationale behind using MIAR can be grounded in three main assumptions. Firstly, all good organisational research should demonstrate phenomenon-methodology fit - as well as produce knowledge that balances rigour and relevance (Tranfield and Starkey, 1998). MIAR achieves fit regarding its inclusiveness of relevance, and its emergent and non-linear approach to inquiry -

which is similar in many respects to most entrepreneurial processes. Its inquiry method of *plan, act* and *evaluate*, bears semblance to pragmatic entrepreneurship theories such as the lean start-up model (Ries, 2011) of *build (act), measure, learn* (evaluate).

A second rationale for using MIAR derives from the argument that when studying a phenomenon at a nascent stage of theory development, scholarship needs to return to an open-ended and phenomena-driven approach to inquiry, using inductive and abductive inferences (Edmondson and McManus, 2007). Given its very recent entry in journals, the digital entrepreneurship theme is at a nascent stage of theory development, thereby making an open-ended MIAR approach suitable.

Thirdly, entrepreneurship is a science of the artificial (Simon, 1996; Venkataraman et al., 2012) – meaning, it studies worlds that can be created. Hence, the entrepreneurial journey has alternatively been conceptualised as an emergent hierarchical system of artifact-creating processes (Selden and Fletcher, 2015). This view lends support to the design research approach to MIAR, involving the enactment and creation of new ventures as the vehicle for real-time experiential knowing.

3.3.2. Benefits

MIAR has the advantage of offering scholars with a passion for the subject, an opportunity to enact the entrepreneurship experience in real-time (Johannisson, 2011). Its use also results in self-development of the researcher both as practitioner and scholar. Thus, it aligns with the assertion that ‘all good research is for *me*, for *us* and for *them*’ (Reason and Marshall, 1987, p. 112). Given its epistemological underpinnings, MIAR emphasises *critical subjectivity* (Reason, 1994) as opposed to objectivity – i.e., exposing and acknowledging one's biases and taking steps to address them, rather than believing they do not exist. In so doing, it helps readers see where researchers fit in the bigger story. Thus, audiences of research findings are not misled into assuming total impartiality where such is unattainable. Additionally, since the bigger story is understood in context, the goal of generalisation is not law-like or statistical as in conventional forms of research, but *naturalistic generalisation* (Stake and Trumbull, 1982). Whereby, the responsibility for generalising rests not with the researcher but on those who seek to make a generalisation elsewhere. Thus, the researcher's responsibility hinges on the provision of detailed descriptions of the case and context under study, to aid readers find similarities that are extrapolatable to others.

Finally, the use of MIAR answers calls for diversity and inclusivity in entrepreneurship research, which is currently dominated by a functionalist paradigm (Leitch et al., 2010). MIAR therefore contributes to the *interestingness* of entrepreneurship as domain of scholarship (Frank and Landström, 2016).

4. Design & implementation

With relation to the practicalities of design and implementation, MIAR begins with a *pre-step*, followed by *main steps* - as the core project. Meanwhile, the reflection cycles constitute the academic project (Zuber-Skerritt and Perry, 2002).

4.1. Pre-step

Activities in the pre-step include clarifying the purpose and multiple contexts of the study. This step also focuses on the establishment of collaborative partnerships with potential co-inquirers. The pre-step equally serves to determine readiness to engage and the envisioning of a desired future state (Coghlan and Brannick, 2014, p. 10). **Box 4.1** is a narrative of the pre-step in our illustrative case which tells the story of the researcher's decision to engage in MIAR.

As the case narrative of the pre-step indicates, thoughtful consideration of multiple factors is required before a decision is made to undertake a MIAR project. A convergence of favourable circumstances has to fall in place for the study to occur. Thus, ‘case selection’ may be opportunistic or based on a researcher's existing circumstances, interests and judgement on the perceived levels of certainty in anticipating the successful completion of the study with significant data generation on process.

4.2. Main Steps

After readiness is assessed, main steps involve the enactment of the MIAR cycles by *constructing, planning action, taking action* and *evaluating action*. Based on an evaluation of the first cycle, more cycles may follow, and a *pivot* in direction may be effected (Ries, 2011), as determined by evolving circumstances. The main steps may align with key activities during pure digital new venture creation. **Constructing** the problem is usually a dialogic activity that involves the careful and thoughtful articulation of the practical and theoretical foundations of action with collaborators. Next, **planning action** involves a series of concrete next steps. **Taking action** involves the intervention and enactment of plans made collaboratively. Finally, **evaluating action** entails examining outcomes against what was planned. It also examines how the actions were undertaken and what new insights inform subsequent MIAR cycles.

As the cycles unfold, researchers engage in content, process and premise reflections. Content reflection involves thinking about what is happening, while process reflection focuses on strategies, procedures and how things are being done. Meanwhile, premise reflection critiques underlying assumptions and perspectives. Together, content, process and premise reflection complete a meta-learning cycle (Coghlan and Brannick, 2014, pp. 12–13). Documenting experiences in a reflective journal, digital media formats and more, provides rich and thick data on the journey as the basis for producing a holistic narrative and analysis of process. **Figs. 2–4** below are brief extracts of key events from enacting three MIAR cycles in our illustrative case.

Box 4.1. Case Narrative of Pre-step.

Researcher & Reflexivity: The researcher is a portfolio digital entrepreneur who has prior knowledge creating successful digital start-ups in the *EdTech* domain. His decision to combine the creation of a new digital venture with academic research is partly driven by the need to continue reflecting on and deepening insights on his own entrepreneurial experiences through an academic lens. Given that his digital entrepreneurial journey began quite by accident, he had always lacked the confidence to describe himself as an entrepreneur. Thus, to acquire knowledge of entrepreneurship, he embarked on further education in *Business and Entrepreneurship* at Master's degree level. After completing the programme, he obtained a valuable academic perspective on his practice, which provided him with useful frameworks for examining and better understanding prior experiences. However, he also questioned the applicability of some of the newly acquired knowledge in a PDE context and identified a possible dearth of research on the subject back in 2015. Moreover, an encounter with two 'failed' digital entrepreneurs in the Irish context made him wonder whether their failure was the result of ill-conceived advice which they had received from well-intentioned start-up incubators. From the conversations with these entrepreneurs, it appeared they may have followed mentoring counsel that was more suited to traditional new venture creation, in addition to too much interference from support agencies. The researcher reasoned that perhaps if he undertook research on his practice, he might illuminate understanding regarding what was actually involved. Being in a unique position to explore the subject, the opportunity presented itself for fully funded doctoral scholarship. However, the researcher was concerned that four years of doctoral studies might distance him from his digital entrepreneurial practice. This concern was based on a misconception that all researchers must be detached observers in an academic study. Further reading on business research methods would eventually disprove this misconception. It occurred to him that the innovative combination and application of MIAR in an entrepreneurial context would suit the nature of inquiry that was crystallising in his thoughts. Having secured supervisors who were sympathetic to this approach to inquiry, he accepted the scholarship offer with the belief that combining academic research with his natural practice would advance his knowledge, while producing knowledge that would benefit multiple stakeholders.

Context of Core Project: Informed by the *affordable loss* decision making logic, the researcher, as entrepreneur, decided to fund the creation of a digital new venture idea he had been pondering, as a vehicle for real-time experimentation and learning. The pure digital new venture idea was based on the gamification of the primary education curriculum. Affordable financial loss was made more affordable by the scholarship offer. Since the offer meant that he did not have to fund the academic project himself, it freed up more of his own personal savings for use in financially bootstrapping the new venture creation process (core project). As the new venture would be new and removed from his existing businesses, the level of access for himself and others would be much greater. It would also significantly limit the potential for self-harm as insider participant. As such, in this dual role, the researcher doubles as founding digital entrepreneur who initiates, leads and coordinates the efforts of a founding cast of independent collaborators towards realising the pure digital new venture idea.

Collaborators: Given that programmers were crucial to realising the new venture idea, the researcher, as digital entrepreneur, began by assembling a team of collaborators in the Netherlands who coded and designed e-learning games (digital artifacts); and an India-based web developer who programmed the digital learning platform. These collaborators were informed of their role as co-inquirers and preliminary agreements were reached on subsequent data use and dissemination. The researcher decided to map MIAR cycles around significant game and platform development milestones. As the process unfolds, he would record data in field notes and reflective journals by date of occurrence. He would then punctuate every cycle of his reflective journal with reflections; while academic supervisors would frequently play the role of 'critical friends' (Herr and Anderson, 2014, p. 98).

- **First MIAR Cycle** - Fig. 2 below is a snapshot of events that occurred during the first MIAR cycle. These events mainly relate to the pure digital new venture idea initiation, planning and development of a minimum viable product, as well as other gestational behaviours.
- **Second MIAR Cycle** - Fig. 3 is a snapshot of events that occurred during the second MIAR cycle. It documents the creation of a minimum viable product (Ries, 2011) and the vicissitudes that befell these efforts. Events clearly did not happen as planned and thus provided learning opportunities that shaped the trajectory of the third cycle.
- **Third MIAR Cycle** - Fig. 4 is a snapshot of events that occurred during the third MIAR cycle. Based on outcomes of the second MIAR cycle, this cycle engaged in the further development of a minimum viable product that could be used to elicit detailed feedback from a larger number of potential users and customers. A fourth cycle is currently in progress.

4.3. Discussion – Digital Technologies as Enablers of PDE & MIAR Processes

In this case, we find that digital technologies provide researchers with tools for capturing a PDE journey in varied data forms. The same digital technologies that are applied in new venture creation, often double as research tools. Synchronous and asynchronous digital communication technologies allow for remote collaboration, as well as provide the space in which to generate, observe and record data of events. Meanwhile, screen and audio recording software can be installed on computers to record these interactions. With the rich and varied data forms, it becomes easier to take readers down a completed PDE journey, in stories supported by audio-visual data - upon which they live the experience and arrive at their own interpretations. Further, it guards against accusations of

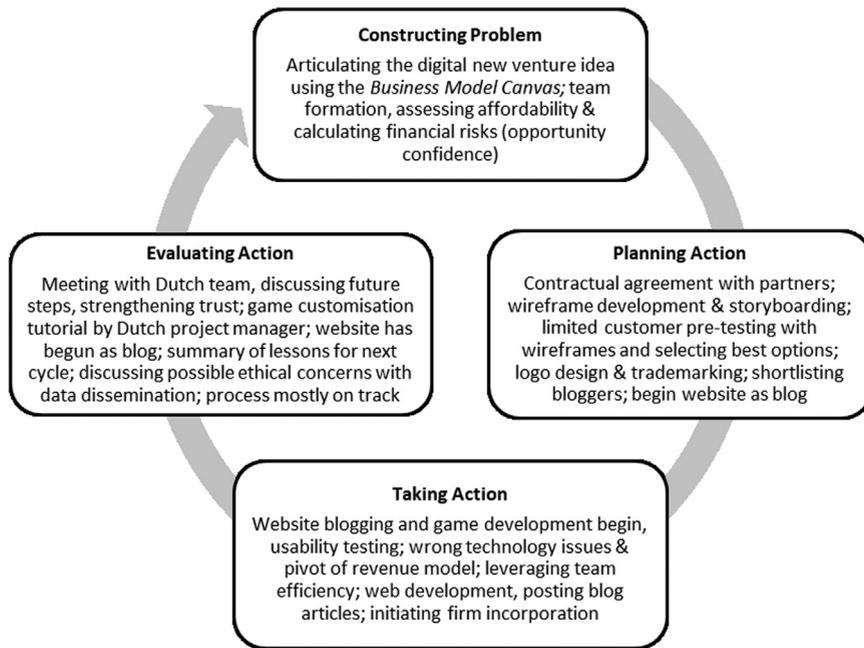


Fig. 2. First MIAR Cycle.

writing fiction, as researchers are armed with data to show and tell their experience. Thus, it contributes towards ensuring trustworthiness, as well as enhancing the quality in *presentational knowing* through total transparency.

However, while these technologies mostly help, we learned in the current case that they can be the source of misunderstanding if used incorrectly. In one incident, a miscommunication was the cause of an incorrect technology implementation during the first MIAR cycle, leading to cost overruns. It arose from incomplete understanding of project plans, attributable to a reduction in face-to-face familiarity of digital communication. Hence, we quickly learned that follow-up confirmation was especially necessary for reducing misunderstanding. Thus, the use of synchronous communication was followed by asynchronous confirmation in limiting possible misunderstanding.

In sum, digital technologies help forge a symbiosis between new venture co-creation and new knowledge co-production. The illustrative case indicates that the pre-step adapts to the initial pure digital new venture idea generation and *opportunity confidence* (Davidsson, 2015) phases of the PDE journey. Meanwhile, the MIAR cycles mostly wrap around the actual digital new venture

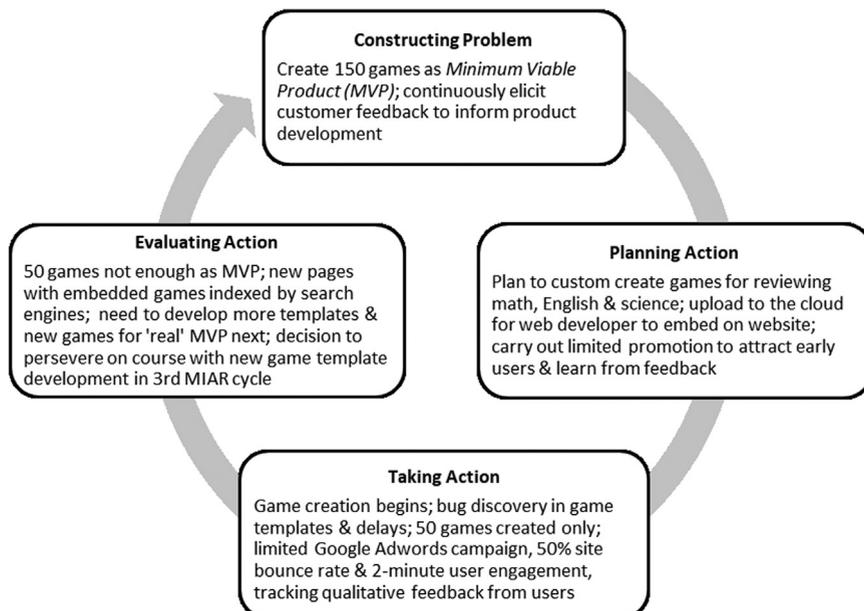


Fig. 3. Second MIAR Cycle.

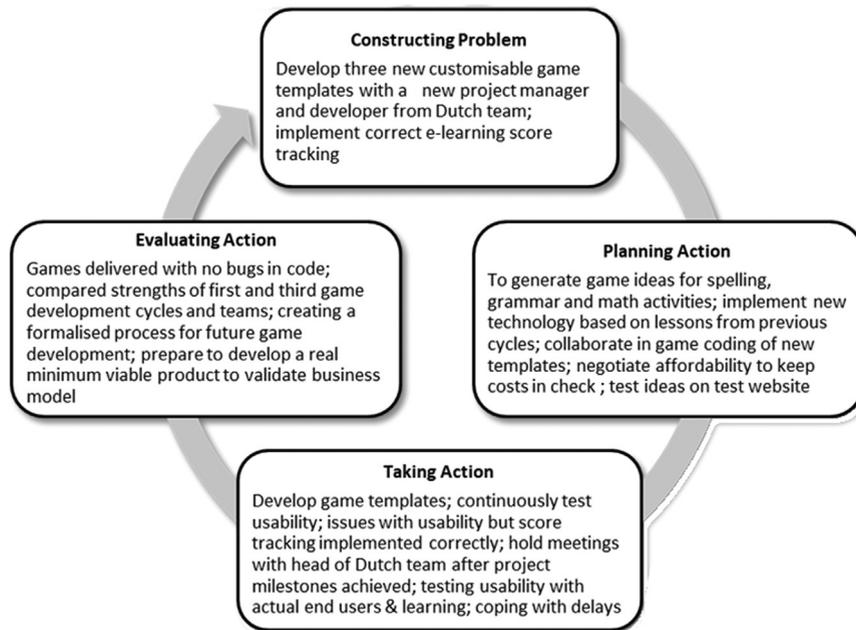


Fig. 4. Third MIAR Cycle.

creation, with feedback loops – thus achieving phenomenon-methodology fit. In addition, MIAR allows researchers to ‘live life as inquiry’ (Marshall, 1999).

4.4. Analysing MIAR data

As the MIAR process unfolds, data mounts astronomically. For analysis, we recommend narrative analysis (Riessman, 2005) as it appears suitable to the interpretivist and processual nature of MIAR and the PDE phenomenon. By interpretivist research, we are following Leitch et al. (2010) in eschewing controversies the term *qualitative research* ignites. Since interpretivist process research is often based on a researcher's story of social reality, a narrative mode of analysis has the benefit of preserving the temporal order of events. It adopts narrative causality, which is a ‘loose’ and general approach to explanations (Van de Ven, 2007, p. 156), as well as pull-type causality for providing final explanations of process. With pull-type causality, X (the precursor) does not imply Y (the outcome), but Y implies X (Mohr, 1982, p.59). Thus, after a PDE process has been captured leading to an ‘end phase’, researchers walk backwards from the outcome to find possible explanations for events.

4.4.1. Narrative writing

Researchers begin by constructing a factual and neutral narrative through the piecing together of key incidents and events captured in the cycles. This exercise helps researchers to stand back from the core project to see it as an outsider. The story is usually organised around a *central subject* which makes events happen and to which events occur (Van de Ven, 2007). Interpreted in the context of a PDE journey, the pure digital new venture idea is the central subject whose non-human agency triggers artifact-creating events (Selden and Fletcher, 2015). Additionally, the final narrative anonymises co-inquirers, as consistent with reasonable ethical conduct.

4.4.2. Coding & reflection

During and after writing the narrative, techniques for reflecting include punctuating the story with reflective pauses. Researchers may also colour-code themes without fragmenting the narrative. Themes may be drawn from a conceptual process model or framework developed from existing theories. The model or framework provides an analytical tool for an abductive back and forth engagement with theory and data, in search of the best explanations for events.

4.5. Ensuring quality in MIAR

To ensure quality in MIAR, trustworthiness and authenticity are taken as given (Lincoln and Guba, 1985). However, quality need not simply mirror reliability and validity, but also consider the political, moral and pragmatic realities of each case (Reason, 2006, p. 191). Hence, we cross-reference and distil recurrent MIAR quality suggestions in Table 2 (Reason, 2006; Herr and Anderson, 2014; Coghlan and Shani, 2014; Bradbury, 2015). The quality guidelines may not be weighted equally in every case.

The above quality criteria can simply be subsumed under three broad headings - a good story, rigorous reflection on the story and

Table 2
Quality in MIAR.

Criteria	Description
Process Quality	refers to how well the MIAR process involves iterative cycles of reflection that problematises practices under study (Herr and Anderson, 2014); validation as a process is emphasised over validity as outcome, facilitated by transparency (Leitch et al., 2010)
Democratic Quality	refers to the degree to which MIAR reflects participative values such as consultation and collaboration with stakeholders (Bradbury, 2015, p. 8); quality of relationships is considered important and is built on creating shared goals, trust and collaborative action (Coghlan and Shani, 2014)
Actionability	refers to how action-oriented findings are; or how well they provide new ideas that guide action in response to need (Coghlan and Shani, 2014)
Reflexivity	the degree to which self-location as a change agent is acknowledged and critiqued (Bradbury, 2015, p. 8); <i>critical subjectivity</i> is valued (Reason, 1994, p. 327)
Theoretical Grounding	the degree to which the research involves a dialogue with a broader body of research (Coghlan and Brannick, 2014, p. 16); ensures that findings can be extrapolated to inform other contexts
Significance	the extent to which findings are significant regarding content and process (Reason and Torbert, 2001)

extrapolation of useful knowledge or theory from the reflection (Coghlan and Brannick, 2014, pp. 16–17).

5. Conclusions

In this paper, we argue for using MIAR in studying the PDE journey and use a case narrative to elucidate practicalities in design and implementation. We note that distinctive qualities of PDE render event-driven process studies more attainable in this context. However, we caution that event-driven research still remains a challenging form of process inquiry which requires careful consideration prior to engagement. Challenging research on unpredictable entrepreneurial journeys helps anchor the legitimacy of entrepreneurship as a domain of scholarship. Whereby, the *interestingness* of entrepreneurship research hinges on practising what we preach through embracing an enactive, design-based approach. In using MIAR, researchers double as pragmatic entrepreneurs, progressing in incremental steps of calculated risk-taking, and never fully knowing to what alleys of new knowledge the journey leads. They gain tacit experiential knowledge that can only be obtained through research in the ‘swampy lowlands’ of messy problems that do not lend themselves to simple technical solutions (Schön, 1987). Indeed, the concern has been raised that a maturing entrepreneurship discipline may ironically become institutionalised scholarship studying pragmatic entrepreneurs (Berglund and Wennberg, 2016). Thus, there is truly need for an ‘Entrepreneurial Method’, whose recommended mechanisms are ‘action, interaction, reaction, transformation and explicit co-creation’ (Saravathy and Venkataraman, 2011) – as operationalised in a MIAR approach.

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References

- Aldrich, H.E., 2001. Who wants to be an evolutionary theorist? Remarks on the occasion of the year 2000 OMT distinguished scholarly career award presentation. *J. Manag. Inq.* 10 (2), 115–127.
- Amit, R., Zott, C., 2001. Value creation in e-business. *Strateg. Manag. J.* 22 (6-7), 493–520.
- Argyris, C., 1996. Actionable knowledge: design causality in the service of consequential theory. *J. Appl. Behav. Sci.* 32 (4), 390–406.
- Argyris, C., Schön, D.A., 1996. *Organizational Learning II: theory, Method and Practice*. Addison Wesley, Reading, MA.
- Berglund, H., Wennberg, K., 2016. 3 Pragmatic entrepreneurs and institutionalized scholars? *Challenging Entrep. Res.*, 37.
- Berglund, H., Dimov, D., Wennberg, K., 2018. Beyond bridging rigor and relevance: the three-body problem in entrepreneurship. *J. Bus. Ventur. Insights* 9, 87–91.
- Bradbury, H. (Ed.), 2015. *The Sage Handbook of Action Research* 3rd ed.. Sage.
- Bygrave, W.D., 2007. The entrepreneurship paradigm (I) revisited. *Handbook of Qualitative Research Methods in Entrepreneurship*, 17–48.
- Coghlan, D., Brannick, T., 2014. *Doing Action Research in Your Own Organization* 4th ed.. SAGE, Los Angeles.
- Coghlan, D., Shani, A., 2014. Creating action research quality in organization development: rigorous, reflective and relevant. *Syst. Pract. Action Res.* 27 (6), 523–536. <http://dx.doi.org/10.1007/s11213-013-9311-y>.
- Davidsson, P., 2015. Entrepreneurial opportunities and the entrepreneurship nexus: a re-conceptualization. *J. Bus. Ventur.* 30 (5), 674–695.
- Davidsson, P., Gordon, S.R., Bergmann, H. (Eds.), 2011. *Nascent Entrepreneurship* No. 22. Edward Elgar, Cheltenham, 608.
- Dewey, J., 1997. *How we think*. Courier Corporation, Courier Dover Publications, Mineola, NY.
- Dimov, D., 2016. *Toward a design science of entrepreneurship* Models of Start-up Thinking and Action: Theoretical, Empirical and Pedagogical Approaches. Emerald Group Publishing Limited, 1–31.
- Edmondson, A.C., McManus, S.E., 2007. Methodological fit in management field research. *Acad. Manag. Rev.* 32 (4), 1246–1264.
- Frank, H., Landström, H., 2016. What makes entrepreneurship research interesting? Reflections on strategies to overcome the rigour–relevance gap. *Entrep. Reg. Dev.* 28 (1–2), 51–75.
- Giones, F., Brem, A., 2017. Digital technology entrepreneurship: a definition and research agenda. *Technol. Innov. Manag. Rev.* 7 (5), 44–51.
- Guthrie, C., 2014. The digital factory: a hands-on learning project in digital entrepreneurship. *J. Entrep. Educ.*, 17.
- Heron, J., Reason, P., 2006. The practice of co-operative inquiry: research ‘with’ rather than ‘on’ people. *Handb. Action Res.* 2, 144–154.
- Heron, J., Reason, P., 2008. Extending epistemology within a co-operative inquiry. *The Sage handbook of action research: Participative inquiry and practice*, 366–380.
- Herr, K., Anderson, G.L., 2014. *The Action Research Dissertation: a Guide for Students and Faculty*. Sage Publications.
- Hull, C.E.K., Hung, Y.T.C., Hair, N., Perotti, V., DeMartino, R., 2007. Taking advantage of digital opportunities: a typology of digital entrepreneurship. *Int. J. Netw. Virtual Organ.* 4 (3), 290–303.

- Järvinen, P., 2007. Action research is similar to design science. *Qual. Quant.* 41 (1), 37–54.
- Johannisson, B., 2011. Towards a practice theory of entrepreneuring. *Small Bus. Econ.* 36 (2), 135–150.
- Kallinikos, J., Aaltonen, A., Marton, A., 2013. The Ambivalent Ontology of Digital Artifacts. *Mis Q.* 37, 2.
- Landström, H., Parhankangas, A., Fayolle, A., Riot, P., 2016. *Challenging Entrepreneurship Research*. Routledge, London.
- Leitch, C.M., Hill, F.M., Harrison, R.T., 2010. The philosophy and practice of interpretivist research in entrepreneurship: quality, validation, and trust. *Organ. Res. Methods* 13 (1), 67–84.
- Lewin, K., 1946. Action research and minority problems. *J. Soc. Issues* 2 (4), 34–46.
- Lincoln, Y.S., Guba, E.G., 1985. *Naturalistic Inquiry* 75. Sage.
- March, S.T., Smith, G.F., 1995. Design and natural science research on information technology. *Decis. Support Syst.* 15 (4), 251–266.
- Marshall, J., 1999. Living life as inquiry. *Syst. Pract. Action Res.* 12 (2), 155–171.
- Marshall, J., 2001. **Self-reflective inquiry practices. Handbook of action research: The concise paperback edition.**
- McMullen, J.S., Dimov, D., 2013. Time and the entrepreneurial journey: the problems and promise of studying entrepreneurship as a process. *J. Manag. Stud.* 50 (8), 1481–1512.
- Mingers, J., Gill, A., 1997. *Multimethodology: Theory and Practice of Combining Management Science Methodologies*. Wiley.
- Mohr, L., 1982. *Explaining Organizational Behavior*. Jossey-Bass, San Francisco, CA.
- Nambisan, S., 2016. digital entrepreneurship: toward a digital technology perspective of entrepreneurship. *Entrep. Theory Pract.*
- Reason, P., 1994. Three approaches to participative inquiry. In: Denzin, Lincoln, Y. (Eds.), *Handbook of Qualitative Research*. Sage, Thousand Oaks, CA, 324–339.
- Reason, P., 2006. Choice and quality in action research practice. *J. Manag. Inq.* 15 (2), 187–203.
- Reason, P., Bradbury, H., 2008. *The SAGE Handbook of Action Research: Participative Inquiry and Practice*. SAGE, Los Angeles, CA.
- Reason, P., Marshall, J., 1987. *Research as personal process: Appreciating Adult Learning*. Kogan Page, London, 112–126.
- Reason, P., Torbert, W., 2001. The action turn: toward a transformational social science. *Concepts Transform.* 6 (1), 1–37.
- Ries, E., 2011. *The Lean Startup: how Today's Entrepreneurs Use Continuous Innovation to Create Radically Successful Businesses*. Crown Books.
- Riessman, C.K., 2005. *Narrative analysis*. University of Huddersfield.
- Sarasvathy, S.D., Venkataraman, S., 2011. Entrepreneurship as method: open questions for an entrepreneurial future. *Entrep. Theory Pract.* 35 (1), 113–135.
- Schon, D.A., 1984. *The Reflective Practitioner: How Professionals Think in Action* 5126. Basic Books.
- Schön, D.A., 1987. *Educating the Reflective Practitioner*. Jossey-Bass, San Francisco, 27.
- Schön, D.A., 1995. Knowing-in-action: the new scholarship requires a new epistemology. *Chang.: Mag. High. Learn.* 27 (6), 27–34.
- Sein, M.K., Henfridsson, O., Purao, S., Rossi, M., Lindgren, R., 2011. Action design research. *MIS Q.*, 37–56.
- Selden, P.D., Fletcher, D.E., 2015. The entrepreneurial journey as an emergent hierarchical system of artifact-creating processes. *J. Bus. Ventur.* 30 (4), 603–615.
- Shani, A.B., Pasmore, W.A., 1985. *Organization inquiry: towards a new model of the action research process* Contemporary Organization development: Current Thinking and Application. Scott, Foresman, Glenview, IL, 438–448.
- Shim, J., Davidsson, P., 2018. Shorter than we thought: the duration of venture creation processes. *J. Bus. Ventur. Insights* 9, 10–16.
- Simon, H.A., 1996. *The sciences of the artificial*. MIT Press.
- Stake, R.E., Trumbull, D.J., 1982. Naturalistic generalizations. *Rev. J. Philos. Soc. Sci.* 7 (1), 1–12.
- Swann, C., 2002. Action research and the practice of design. *Des. Issues* 18 (1), 49–61.
- Tilson, D., Lyytinen, K., Sørensen, C., 2010. Research commentary—digital infrastructures: the missing IS research agenda. *Inf. Syst. Res.* 21 (4), 748–759.
- Tranfield, D., Starkey, K., 1998. The nature, social organization and promotion of management research: towards policy. *Br. J. Manag.* 9 (4), 341–353.
- Van de Ven, A.H., 2007. *Engaged scholarship: a guide for organizational and social research*. Oxford University Press on Demand.
- Venkataraman, S., Sarasvathy, S.D., Dew, N., Forster, W.R., 2012. Reflections on the 2010 AMR decade award: Whither the promise? Moving forward with entrepreneurship as a science of the artificial. *Acad. Manag. Rev.* 37 (1), 21–33.
- von Briel, F., Davidsson, P., Recker, J.C., 2017. Digital technologies as external enablers of new venture creation in the IT hardware sector. *Entrep. Theory Pract.*
- von Briel, F., Recker, J., Davidsson, P., 2018. Not all digital venture ideas are created equal: implications for venture creation processes. *J. Strateg. Inf. Syst.*
- Von Hippel, E., 2005. *Democratizing Innovation*. MIT Press.
- Wiklund, J., Davidsson, P., Audretsch, D.B., Karlsson, C., 2011. The future of entrepreneurship research. *Entrep. Theory Pract.* 35 (1), 1–9.
- Yoo, Y., Boland, R.J., Jr, Lyytinen, K., Majchrzak, A., 2012. Organizing for innovation in the digitized world. *Organ. Sci.* 23 (5), 1398–1408.
- Zittrain, J.L., 2006. *The generative internet*. Harv. Law Rev., 1974–2040.
- Zuber-Skerritt, O., Perry, C., 2002. Action research within organisations and university thesis writing. *Learn. Organ.* 9 (4), 171–179.

Update

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Erratum regarding missing Declaration of Competing Interest statements in previously published articles – Part 1



Declaration of Competing Interest statements were not included in the published version of the following articles that appeared in previous issues of Journal of Business Venturing Insights.

The appropriate Declaration/Competing Interest statements, provided by the Authors, are included below.

1. “Resilience as a moderator of government and family support in explaining entrepreneurial interest and readiness among single mothers [Journal of Business Venturing Insights, 2020; 13: e00157] 10.1016/j.jbvi.2020.e00157

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2. “Entrepreneurial impulsivity is not rational judgment” [Journal of Business Venturing Insights, 2018; 11: e00105] 10.1016/j.jbvi.2018.e00105

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3. “Permission to hustle: Igniting entrepreneurship in an organization” [Journal of Business Venturing Insights, 2020; 14: e00173] 10.1016/j.jbvi.2020.e00173

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4. “Judgment, fast and slow: Toward a judgment view of entrepreneurs’ impulsivity” [Journal of Business Venturing Insights, 2018; 10: e00095] 10.1016/j.jbvi.2018.e00095

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