HYBRID ORGANIZATIONAL FORMS IN PUBLIC SECTOR'S DIGITAL TRANSFORMATION: A TECHNOLOGY ENACTMENT APPROACH

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Abstract

Design: The study adopts a hermeneutic approach in conducting deep expert interviews with 22 senior executives and managers of multiple organizations. The method blends theory and expert views to study digital transformation in the context of enterprise information management.

Purpose: The purpose of this paper is to examine how public sector organizations become nimbler while retaining their resilience during digital transformation.

Findings: Drawing on Fountain's (2001) Technology Enactment Framework (TEF), this research poses that organizational form is critical in the enactment of technologies in digital transformation. By extending TEF, we claim that organizations are not in pure bureaucratic or network organizational form during digital transformation; instead, they need a hybrid combination in order to support competing strategic needs for nimbleness and resilience simultaneously. The four hybrid organizational forms presented in our model (4R) allow for networks and bureaucracy to co-exist, though at different levels depending on the level of resiliency and nimbleness required at each point in the continuous digital transformation journey.

Research Implications: The main theoretical contribution of this research is to extend TEF to illustrate that the need for co-existence of nimbleness with stability in a digital transformation, results in a hybrid of networks and bureaucratic organization forms. This research aims to guide public sector organizations' digital transformation with extended TEF as a tool for building the required organizational forms to influence the technology enactment to best meet their strategic needs in the digital era.

Practical Implications: The results from expert interviews point to the fact that the hybrid organizational forms create a multi-modal organization, extending our understanding of

enterprise information management. Depending on the department or business needs a hybrid organizational form mode would be dominant. This dominance creates a paradox in organizations to handle both resilience and nimbleness. Therefore, 4R model is provided as a guide to public sector managers and consultants to guide strutting their organization for digital transformation.

Originality: The model (4R), the extended TEF, shows that organizations still work towards networks and bureaucracy; however, they are not two distinct concepts anymore; they co-exist at different levels in hybrid forms depending on the needs of the organization.

Keywords: 'digital transformation', 'digitalization', 'digitization', 'e-government', 't-government', 'transformational government' and 'public sector digital transformation'

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1. **Introduction**

Organizations have become more like each other as they have been following the same industry-wide standards (Hinings et al., 2018). This has created the need for innovation to create a business advantage (Kotarba, 2017, Tate et al., 2018). The need for technology-enabled innovation via transformation in organizations to gain a competitive edge is not specific to the digital era and has been observed in past industrial revolutions (Schwab, 2017). Historically, larger companies have invested heavily to innovate before other organizations introduce unexpected new ideas and set the pace of industry-level transformation (Kostić, 2018). Organizations which can adapt to technology changes rapidly and in innovative ways can gain a business advantage (Abedin and Qahri-Saremi, 2018; Nadeem et al., 2018) . This has resulted in a new organization transformation phenomenon, namely digital transformation, which has been the subject of increasing research by practitioners and academics since 2014 (Reis et al., 2018).

Digital transformation is not exclusive to the private sector; therefore, it is important to review it in the context of public sector as well. The public sector has been transforming using digital technologies since the 1950s with the arrival of mainframes, and then personal computers in the 1980s and 1990s, and subsequent widespread use of the internet (Luna-Reyes and Gil-Garcia, 2014). However, public sector transformation has been slow and is still behind the private sector. This is because of stability needs in the public sector resulting in different drivers for technology-enabled innovation (Tate et al., 2018). The public sector's focus on e-government

initiatives and digitization, while to some extent successful, does not ameliorate the threat from the new wave of disruptions because it requires constant shifts in strategic priorities. This is significant because Public Sector Organizations (PSOs) have a low risk appetite towards any change that threatens their stability, and responding to current disruptions requires an evolution from earlier transformation efforts such as digitization and e-government (Murphy, 2005). Therefore, PSOs need to transform their businesses to be responsive to changes resulted from digital transformation while retaining their stability (Carcary et al., 2016).

The challenge for PSOs is that they have historically been more bureaucratic in their adoption of digital technologies (Fountain, 2001). On top of that, digital era disruptions and uncertainties requires PSOs to be flexible in their operation (O'Reilly III & Tushman, 2011) as innovative and exploratory activities flourish with organizational flexibility (O'Reilly III and Tushman, 2011, Burns and Stalker, 1961, Utterback, 1995). Therefore, the 'digital' in digital transformation, compared to previous waves of transformations, means public sector organisations are going to require flexibility to continuously adopt new technologies to transform in response to disruptions while maintaining their operational stability.

Among various PSOs, this study focuses on organizations in the finance industry. While many scholars have focused on digital transformation in the public sector and financial services organizations (Cordella and Iannacci, 2010, Mergel et al., 2019, Omar et al., 2017, Tate et al., 2018), even with studies in the role of organizational capabilities in digital transformation it remains uncertain how a bureaucratic organization can keep its stability and simultaneously create networks in digital transformation (Nadeem et al., 2018). One attempt to address this tension in organizations is the ambidexterity theory which provides guidance on the organizational paradoxes for exploration and exploitation (Boukamel and Emery, 2017,

Cannaerts et al., 2016, Smith and Umans, 2015, Tushman and O'Reilly III, 1996, O'Reilly III and Tushman, 2011, O'Reilly III and Tushman, 2013). However, we are aware of no research that specifically addresses how organizational forms change during digital transformation as a result of the tensions between bureaucracy and networks. This is significant because PSOs in finance industry tend to have a hybrid of public and private characteristics (Kim and Sheen, 2002, Shaoul, 2005) that increase their need to balance networks and bureaucratic organizational forms. Therefore, in this research, we aimed to provide novel theoretical and practical guidance to PSOs on the organizational form changes to meet the stability and flexibility demands of digital transformation by conducting a review of the literature followed by an analysis of deep interviews with senior executives of a major Australian public sector financial services organization (here called FSO) and similar organizations worldwide. Overall, 22 experts participated in this study to supply in-depth knowledge on this understudied phenomenon. The study, while necessarily limited to a subset of PSOs, aimed to answer the following research question:

- *How do public sector organizational forms change in digital transformation?*

To answer the questions, we referred to the Technology Enactment Framework (TEF – Fountain, 2001), an extension of institutional theory, that implies that organizational forms play a central role in the adoption of information technology (IT) in PSOs. TEF was developed in early 2000s during e-government initiatives and digitalization activities and didn't consider transformational government (t-government) and the organizational form changes as a result of digital transformation. Therefore, in answering our research questions, we make a major contribution to the TEF, namely establishing the existence of a hybrid network and bureaucracy organizational form. While other researchers (Camarinha-Matos, 2014, Camarinha-Matos and

Afsarmanesh, 2006, Kolbjørnsrud, 2018, Walker, 2006) have studied other hybrid organizational

forms, the hybrid relationship between networks and bureaucracy has not been studied or defined

in TEF research in the context of managing the tensions between the stability and flexibility

needs in digital transformation (Claver-Cortés et al., 2012).

In section two, we explain key concepts such as digital transformation in PSOs, the

importance of organizational forms in digital transformation, and outlines the theory we chose to

use in our research: the TEF. Section three explains the research methods and provides details on

our empirical work. We present the results of our research in section four and discuss them in

section five. The paper ends with concluding remarks and identification of areas for further

research.

2. Background

2.1. Digital Transformation in Public Sector Organizations

Digital transformation is yet to have an agreed definition in the academic and professional

literature (Nadeem et al., 2018) because it is highly dependent on business context and

organizational change culture (Carcary et al., 2016). Digital transformation affects healthcare,

automobiles, banking, manufacturing, healthcare, finance and public sector (Cziesla, 2014,

Janowski, 2015, Nadeem et al., 2018). Thus, a single definition for all industries and

organization types is problematic. Mergel et al. (2018) defined digital transformation in the

public sector as a departure from digitization that involves redesigning government services to

fulfil changing user needs as they are under constant pressure from their internal and external

environments to adapt to internal and external changes (Mergel et al., 2019, Mahmood, 2016).

Janowski (2015) propose a digital evolution framework that shows public sector is moving from

the use of technologies for digitization to evolving e-government in transforming the internal organization, and then to transforming external relationship, and progressively contextualize the e-government transformation effort to a certain policy goal (Janowski, 2016). The transformation stages of e-government, also known as t-government, have become the focus area in recent research in public sector digital transformation (Weerakkody and Dhillon, 2008, Sipior et al., 2011, Omar et al., 2020, Bannister and Connolly, 2014). This shows that digital transformation efforts in PFOs have become continuous as the goals and context for e-government initiatives evolve to t-government (Murphy, 2005). Other researchers also reviewed digital transformation in the public sector, and provide distinct definitions for digitization, digitalization, and digital transformation, and similarly conclude that the latter focuses on the organization and relationships (Mergel et al., 2018, Mergel et al., 2019). Hinings et al. (2018, p. 1) defined digital transformation as 'the combined effects of several digital innovations bringing about novel actors, structures, practices, values, and beliefs that change, threaten, replace or complement existing rules of the game within organizations, ecosystems, industries or fields'. In particular, they argued that digital transformation is a radical innovation in creating novel organization forms along with infrastructure and digital building blocks. However, while a number of studies and reviewed definitions (Janowski, 2015, Janowski, 2016, Mergel et al., 2019, Murphy, 2005) highlight the continuous nature of digital transformation in public sector and the need for novel organizational forms (Hinings et al., 2018), it is still unclear how PFOs organizational forms change in response to the needs for flexibility and stability in digital transformation.

In this paper, we argue that digital transformation is the need for '*continuous navigation of the dynamic digital landscape*', as other researchers (Sia et al., 2016) observe. This means the days of large and one-off business transformations are long gone, and PSOs find themselves in

need of continuous technology-enabled transformation to rapidly change their products, processes and business models in response to constant internal and external pressures (Janowski, 2015, Murphy, 2005). However, while many researchers have pointed to the need for flexibility in the digital transformation of PSOs (Nadeem et al., 2018, Fountain, 2008, Hinings et al., 2018, Mergel et al., 2019, Mergel et al., 2018, Omar et al., 2017), that need has not been researched in the context of the stability expectations of PSOs, and few have emphasized the changes taking place in the nature of organizational forms in response to the needs for the co-existence of stability and flexibility.

2.2. Organizational Forms in Digital Transformation

PSOs tend to be risk-averse, which influences their flexibility and drive for the adoption of digital technologies (Tate et al., 2018). The literature highlights the importance of structural characteristics of the organization , also known as organizational forms, in PSOs digital transformation (Hinings et al., 2018, Gong et al., 2020) and particularly its challenges in t-government (Sipior et al., 2011), but provides little guidance on how organizational forms change in response to digital transformation's need for flexibility (Jansen, Tempelaar, Van den Bosch, & Volberda, 2009). In particular, the recent research on the role of flexibility in technology enactment process fails to provide clarity on how such flexibility changes PSOs organizational form (Gong et al., 2020). Therefore, in this research, we investigate how PSOs organizational forms change to support flexibility and stability in digital transformation. We posit that organizational form is a fundamental non-technological aspect of digital transformation (Hinings et al., 2018, Kohli and Melville, 2018, Lokuge et al., 2019, Maine et al., 2014, Nambisan et al., 2017, Wunderlich and Beck, 2018, Kostić, 2018, Nadeem et al., 2018, Reis et al., 2018, Vial, 2019).

Organizational forms should allow for collaboration (Berman, 2012). Researchers have discussed the concept of collaborative organizational form created by hybrid of other forms (Camarinha-Matos and Afsarmanesh, 2006, Kolbjørnsrud, 2018) pointing out that hybrid forms powered by digital technologies are transforming industries. Previous research shows that organizations are not necessarily in a single organiztaional form (Adler et al., 2008, Camarinha-Matos and Afsarmanesh, 2006). This means, they are not just focused on hierarchical structures to achive the efficiency, objectivity and rationality goals of a bureaucracy as described by Weber (1964) and further reviewed for relevance in the digiral age by Muellerleile and Robertson (2018). While hierarchal forms are common and have not collapsed in the digital age (Muellerleile and Robertson, 2018), they have morphed to co-exist with other forms. Most organizations are no longer exclusively governed in a full hierarchy due to the emergence of shared goals and resources (Kolbjørnsrud, 2018). Similarly, organisations are not just communities to achieve flexibility, cooperation, innovation and knowledge sharing goals as described in networks organistional forms (Ekbia and Kling, 2005). This reveals that most organizations are no longer exclusively governed in a full hierarchy due to the emergence of shared goals and resources, and are not a hybird of community and hierarchy (Kolbjørnsrud, 2018), yet there is little guidance on how PSOs organizational forms need to change to deal with flexibility and stability needs of technology-enabled transformations (Gong et al., 2020).

2.3. Theoretical Foundation

In this research, we adopted TEF to investigate the role of organizational forms in digital transformation in PSOs. Previous systematic literature review research by Omar et al. (2016) related to digitally enabled service transformation in governments concluded that institutional theory with a technology focus is appropriate for studying digital transformation in the public

sector. Similarly, Cordella and Iannacci (2010) reviewed frameworks commonly used to study

drivers for technology adoption in PSOs, finding that TEF is widely recognized as valuable for

understanding organizational and institutional influences of technology implementation. More

recently, researchers used TEF as a key theory to study digital transformation in public sector

(Tassabehji et al., 2016, Gong et al., 2020). Accordingly, we reviewed key researches on TEF

and provided its strengths and gaps in Table 1.

Table 1 - TEF in the literature

Reference	Key TEF Strengths	Key TEF Gaps
(Bretschneider, 2003, Norris, 2003, Yildiz, 2007)	• Highlight the organizational impact on the technology adoption in the public sector • Provides a powerful framework for studying organization, technology and institutions • Describe how technologies impact organizational forms	• Cases are only from the United States (US) • Exaggerate alternatives to bureaucracy • Provide insufficient evidence to test the TEF theory
(Cordella and Iannacci, 2010)	• A valuable framework for the organizational and institutional impact of technology implementation	• The role of technology is always considered objective, whereas the study by Cordella & Iannacci (2010) in the United Kingdom shows technology could carry transformative goals from government policies and therefore is not always fully objective. So study in other countries may show a different result.
(Mergel et al., 2019)	• Extends institutional theory by considering technology impact • Specific to the public sector	• Does not address external and internal transformation pressures, in particular how internal pressures of digital transformation change the forms. • Does not address how the organization change by the

		interactions with the technology adoption

The TEF's proposition is that technologies are objective prior to their adoption in the organization. For example, hardware, software and communication technologies are objective prior to implementation in the organization; however, objective information technology changes as part of organizations' own thinking and processes as a result of organizational forms impacts such as rules of bureaucracy and the knowledge in networks. The organizational forms influence and are influenced by institutional arrangements such as legal and cognitive elements and can also influence or be influenced by enacted technology. The changed technology as a result of influences from the organizational forms is called the enacted technology (Fountain, 2001). Therefore, TEF (Figure 1) extends institutional theory by considering organizational aspects related to the adoption of technologies by studying multiple PSOs case studies in the US. Organizational forms in TEF are described as bureaucratic and networks.
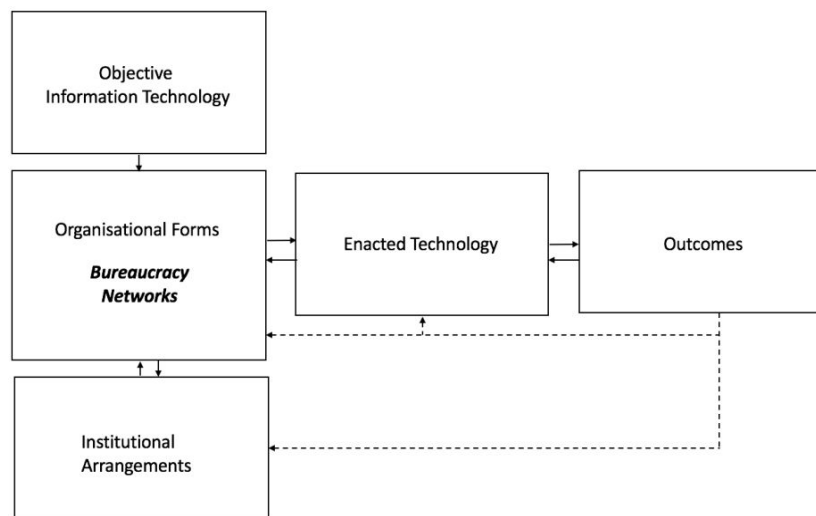

Figure 1 – The Technology Enactment Framework

Adapted from Building the Virtual State: Information Technology and Institutional Change, by Jane. E. Fountain, 2001, Washington, DC, Copyright 2001 by Brookings Institution Press.

TEF does not specify how an organization can balance networks and bureaucratic organizational forms in a shifting strategic direction environment (Raisch, 2008). More recent studies acknowledge the need for flexibility in organizational forms in TEF, however do not address how PSOs organization form needs to change to support such flexibility (Gong et al., 2020). Little is known about how inter-organizational relationships are built and sustained; Fountain (2001) suggested that researchers should investigate this phenomenon very closely.

Our research contributes to knowledge in this field by embedding hybrid organizational forms into TEF resulting in Digital Transformation Technology Enactment Framework (presented in Figure 4).

3. Method

Our research method was inspired by hermeneutics in business and information systems (Boell and Cecez-Kecmanovic, 2010, Boell and Cecez-Kecmanovic, 2014, Olson and Carlisle, 2001). The hermeneutics method has been used in public sector research previously. For instance, Lindgren and Jansson (2013) used it to study the transformation of government electronic services. Cole and Avison (2007) showed how a hermeneutic approach could be used in interviews using a six-stage framework. The hermeneutic process starts with developing an idea and formulating a line of enquiry for discussion. Then interviews conducted to identify themes. The previous interviews' themes are fed into the new ones to allow reflection and generating new insights – see the hermeneutic cycle in Figure 2. Then, the collected data is analyzed, reflected on, and interpretations are formed (Cole and Avison, 2007).

In this study, we used a hermeneutic approach in expert interviews to answer our research questions (Figure 2). This was inspired by the work of Cole and Avison (2007) who included

conversations in understanding and interpretation phases. We started with the development of idea informed by a literature review which resulted in an understanding of digital government evolution and a continuous digital business transformation. An extensive semi-structured literature review of well-established published journal articles and conference proceedings was performed. Electronic databases were searched for 'digital transformation', 'digitalization', 'digitization', 'e-government', 't-government', 'transformational government' and 'public sector digital transformation'. The literature review informed our research questions and interview questions around the required changes in organizational forms for digital transformation in PSOs. FSO CIO and Head of Innovation provided suggestions to engage other experts. Also, PSO experts provided the details for other experts resulting in a snowball approach to the research's expert selection. The research question was used to collect data from the experts in a round of interviews. The data was analyzed by thematic analysis resulting in the construction of emerged themes. Further interviews were conducted with experts to make sense of the collected data and emerged themes, and form arguments in the fusion phase. The cyclical process continued until no new information was revealed in interviews.
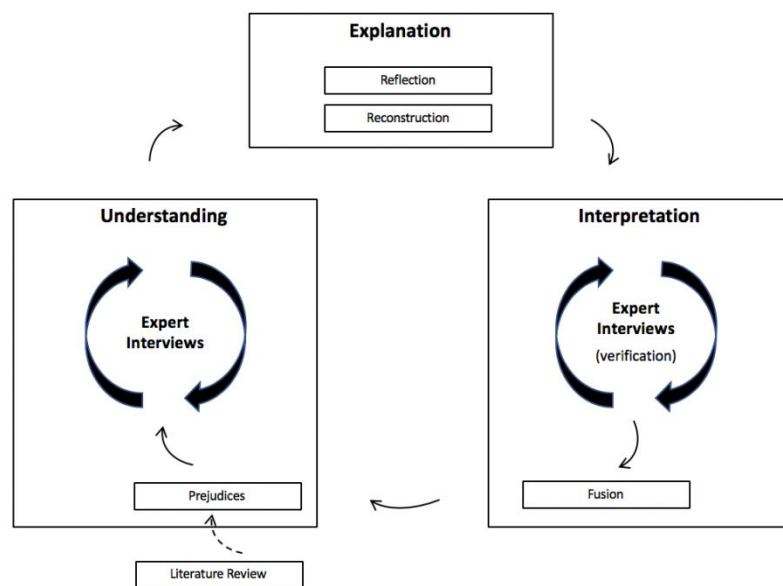
Figure 2 - Research method influenced by a hermeneutic framework for practical research

(Cole and Avison, 2007)

3.1. Data Collection

The first author is an experienced IT strategist in both the public and private sectors and was engaged with FSO for more than three years. This provided prejudices in the researchers understanding of digital transformation. Therefore, the hermeneutics approach began with a literature review to ensure the researcher's understanding has literature backing. A literature review was performed to gain a better understanding of digital transformation. The research question was used as the basis to gather data from experts in semi-structured interviews. The first author conducted all the interviews. The majority of interviews occurred face-to-face in Australia, the United States and Canada, and a minority were interviewed via video conference or phone. The interview questions focused on the understanding of digital transformation in the public sector, how digital transformation has impacted PSO organizational forms, and what elements are influential in changes to organizational forms. The majority of interviews were conducted once and for an hour each over a period of about a year. However, four FSO experts were interviewed multiple times at the interpretation stage (after each cycle) for verification of the results. The identified themes resulted from data analysis were discussed in deep interviews with four FSO key research stakeholders; Chief Information Officer, Head of Innovation, manager of IT Strategy, and Senior Manager of Information. They were presented with the identified themes and asked, '*based on your experience at FSO and other similar organizations, does this result makes sense'*. Their feedback was collected and analyzed further which resulted in "co-emergence of perspectives" in the fusion stage of research to ensure the results are *"understandable to others beyond the participants"* (Cole and Avison, 2007).

The perspectives formed new prejudice for the next cycle, and further interviews were conducted with new experts followed with further deep interviews with key FSO experts until no new information emerged from new cycles.

Of the experts who participated in our study, a large minority were senior executives and managers in the Australian public sector FSO where the researcher is engaged; the remainder worked for similar organizations around the world, including firms providing consulting services to PSOs which were selected based on their expertise in the research area (Table 2).

The interviewees have extensive experience in technology-enabled transformation for large organizations in the public sector in Australia, Brazil, Canada, China, France, Japan and the US. Therefore, in interview sessions, interviewees were requested to provide examples based on their experience, which resulted in more questions and subsequently more information. This method follows well-established qualitative interviewing procedure (Dellermann et al., 2018, Mårtensson and Lee, 2004, Moellers et al., 2019, Rubin and Rubin, 2011).

Table 2 - Interviewee details

#	Role	Section	Organization	Org's Industry	Expert Location	Number of Interactions/ Interviews
1	Chief Information Officer	IT	FSO	Finance	Australia	Multiple
2	Head of Innovation	IT	FSO	Finance	Australia	Multiple
3	Manager of IT Strategy	IT	FSO	Finance	Australia	Multiple
4	Senior Manager of Information	Business	FSO	Finance	Australia	Multiple
5	Chief Technology Officer	IT	FSO	Finance	Australia	Once

6	Head of Data	Business	FSO	Finance	Australia	Once
7	Applications Senior Manager	IT	FSO	Finance	Australia	Once
8	Solution Architecture Manager	IT	FSO	Finance	Australia	Once
9	Chief Information Officer	IT	Other PSO	Finance	US	Once
10	Head of Architecture	IT	Other PSO	Finance	US	Once
11	Chief Strategist	IT	Other PSO	Finance	US	Once
12	Director	Business	Large Financial Institution (ex-public sector expert)	Finance	US	Once
13	Director	IT	Other PSO	Finance	Canada	Once
14	Head of Innovation	IT	Other PSO	Finance	Canada	Once
15	Head of Digital Operation	IT	Other PSO	Finance	Canada	Once
16	Head of Innovation	Business	Other PSO	Finance	France	Once
17	Chief Information Officer	IT	Other PSO	Finance	China	Once
18	Digital Transformation Senior Consultant	Business	Consulting firm	Consulting for Public sector	Brazil	Once
19	Digital Transformation Senior Consultant	Business	Consulting firm	Consulting for Public and Private sector, Finance	Japan	Once
20	Digital Transformation	IT	Large Financial Institution (ex-	Finance and public sector	Australia	Once

	Senior Consultant		public sector expert)			
21	Head of Business Innovation	Business	Other PSO	Public sector services	Australia	Once
22	Digital Transformation Senior Consultant	Business	Consulting firm	Public and private sector consulting services	New Zealand	Once

3.2. Data Analysis

Like the research by Dellermann et al. (2018) this research began with a literature review, followed by qualitative expert interviews. Extensive notes were taken during interviews and time was allocated after each interview for further documentation of discussions and the answers to the questions (Chanias et al., 2018, Mårtensson and Lee, 2004, Schultze, 2000). After each interview, the notes were categorized by each interview question followed by mapping and critical analysis of data to form themes for subsequent expert interviews. Coding technique for qualitative data analysis as per Corbin & Strauss (1990) and Green et al. (2007) was used to code, categorise, and identify themes using interview notes. Preliminary codes were developed after each interview, and categories (final codes) were developed using preliminary codes (Table 3). This approach is similar to concept-driven coding (Gibbs, 2007) as the data analysis coding is informed by the literature review and the prejudice in hermeneutics approach. The collection of interviews resulted in final codes were grouped by interview questions to identify common themes about organizational forms in digital transformation. Nvivo software was used for notes, nodes (coding), and analysis for themes.

Table 3 - Codes and Themes

How do PSO's organizational forms change in digital transformation?		
Theme	*Categories (Final Codes)*	*Preliminary Codes*
Nimbleness	Flexibility	Organizational agility, agile

		delivery, adapt, iterative change
	Speed	Sense and respond, fast adopter, fast follower, move fast, fail fast
Resilience	Stability	Sustain operation, secure, available, Gold standard, can't fail, perfection
	Adaptability	Ability to sustain, adapt, respond

As the themes were derived from analysis, they were presented to key FSO experts for verification and further generalization before new experts were interviewed, which resulted in higher-level themes. The interview notes were reviewed again after all the interviews were conducted, and relevant codes were matched with each theme under each question. Quotes from the interview notes were used to support the findings. Also, repeated discussions with the second and third authors contributed to the overall analysis and co-written findings. The research question groupings and themes are discussed in the next section.

4. Results

When interviewed, an FSO employee with IT strategy responsibilities said, *'The requirements for innovations since the last major transformation has increased the rate of information technology adoption, and the required organizational changes',* and added, *'this increase is quantifiable in our technology reference database'*. The interviewees indicated that their organizations have become more flexible as more work is required to deal with disruptions from digital transformation activities. The CIO of a US PSO said, "*the flexibility required is best described as nimbleness. Our organisation has moved to products and platforms operating model to increase our responsiveness"*. Interviewees based in Canada, France, Japan, New Zealand and Australia agreed nimbleness is a better way of describing the needed trait because iterative changes need to be rapid and small. Therefore, the findings show that nimbleness is key to digital transformation of PSOs. As several FSO employees said, "*It is important to innovate*

when disrupted rapidly". The experts in the Canadian PSO highlighted the difference between nimbleness and flexibility: *"You could be flexible, for example, take on a different approach to delivery, but that doesn't make you fast". Responding to digital transformation requires you to deliver quickly, learn quickly and pivot".* The same theme was raised by the CIO in the Singapore PSO based in China. In their experience, the ability to act quickly is highly essential as organisations in China have many resources, human, technology and capital wise, to perform tasks quickly. Head of data at FSO said that some "*have taken a startup approach to this as they felt they can't wait for the entire organisation to come to the journey. This includes building pilots on stand-alone laptops and USB storage*". Therefore, rapid experimentation and fail-fast approach to responses become important. The expert in Japan highlighted that the situation is changing as leaders in Japan tend to make decisions slowly. Now they have realised that it is important to move quickly in digital transformation; hence the expert was engaged to perform digital transformation consulting. The expert in New Zealand discussed how nimbleness required changing the operating model, and that was the toughest part of digital transformation. The expert was engaged to provide the right operating model as the organisation and its partners failed to provide clear directions to the staff. The expert added: "*let's look at startups in Silicon Valley. It's all flat structure. Anybody can talk to anybody.* A similar comment was mentioned by the expert from the PSO in France: "*middle management have become irrelevant during digital transformation and as an organisation has become agile*". The expert in New Zealand further expanded on this saying: "*It is truly new ways of working. This is because the business needs to allow fast-paced delivery. Some call it agile, but regardless you need to design your organisation to respond quickly and make a decision quickly. This is beyond a traditional IT agile structure, even marketing and sales need to be agile, and make a decision in a quicker and faster manner*".

When asked how this is possible in the PSO context, the expert thought that the trend of "*ventures within the organisations help the organisation become nimble and faster*".

In addition, the interviewees highlighted the need to create and retain resilience. FSOs senior manager for applications highlighted the need for adaptability and stability in the organisation. The expert added: *"our response needs to be quick but at the same time a strategic response"*. The FSO's CIO presented on the concept of resilience to the leadership teams on multiple occasions. The key message was that "*to respond to the disruptions ahead, we need to be resilient. We need to keep our stability, adapt and respond*". Many other experts highlighted resilience as the critical need for PSOs in the digital era. The expert from the french PSO said: "*The expectations of stability in PSOs in the financial industry is not going away. To achieve this, we established a completely separate entity that deals with digital innovation, and to take the fail-fast approach. This is to ensure we don't damage the stability and the image of the organisation in public. This creates the feeling that the institutions don't want to change"*. The expert added that this approach has worked for the organisation: "*we don't always have to change the organisation. We experiment and learn quickly before applying things organisational wide*". This means PSOs need to continue to focus on day-to-day operations, security, and resiliency, while detecting disruptions and opportunities, mobilizing resources, and responding using digital technologies. Therefore, it is important to uncover how PSOs organisational forms change to support the co-existence of nimbleness and resilience in digital transformation.

Experts agreed that digital technologies such as cloud, distributed ledger technology, artificial intelligence and machine learning are disruptive in the context of PSOs in the financial industry. The role of employees and their digital literacy for such modern technologies aside (

Cetindamar and Abedin, 2020), experts identified a need for organizational forms to change to become nimble in response to technology-related disruptions. Simultaneously, it was highlighted that the existing stability in the organization should not be endangered; hence, PSOs need to be both nimble and stable. Industry experts highlighted that organizations could respond rapidly to digital disruptions, for example by being a fast adopter of technologies, or alternatively do this incrementally using experiments. Some experts also highlighted the option to do nothing: the PSO CIO working in China mentioned that sometimes you realize you cannot compete or respond in a specific area, and the best choice may be to do nothing. However, to reach that understanding, rapid market research and prototyping of new products, processes and business models are still required. Almost all interviewees agreed that digital transformation requires organizational nimbleness to enable responses to be incremental and rapid.

The experts identified cross-functional teams as a way to achieve the required changes in organizational forms, in line with previous research (Markus et al., 2000). The majority of experts mentioned the ability of cross-functional teams to be autonomous as key to responsiveness. The experts from the PSO in the US highlighted their success in formalizing their autonomous cross-functional teams for more responsive in their digital transformation. FSO's senior manager of information highlighted the importance of having a fully resourced structure with a set team that focuses on priorities and gets better at delivering them with little reliance on other teams. In particular, the FSO's manager of the strategy mentioned their team is looking to implement a 'guild' structure (Gerster et al., 2020) to expand to other functions that are key contributors to the technology-related strategy. The FSO head of data highlighted the importance of allowing employees to have the full flexibility to go beyond experiments and deliver on the requirements quickly. Further, another senior executive at the FSO, the CIO,

mentioned about a 'digital operating model' plan to make the entire business unit fully autonomous in alignment with business needs. A similar set up was discussed by a PSO head of business innovations in China.

Experts in Canada mentioned their organization had implemented a center of excellence for technology platforms while providing access to distributed business and technology teams to deliver independently. This allows retaining the stability of platforms and business process while providing some flexibility to other teams to deliver on their requirements. The FSO has also been implementing platforms such as its data platform to balance the needs for resilience with nimbleness.

Another method discussed was to form teams dynamically to focus on a particular task, also known as 'task forces' or 'working groups'. FSO's applications senior manager highlighted how his team had achieved more in task forces than traditional methods. Similarly, the head of innovation in PSOs in France and Canada follow the same method. However, they all acknowledged this model has reduced stability. For example, the innovation team in PSO in France works under a different brand, so the PSO's image is not threatened if a failure occurs. PSO in Canada and FSO complete their 'task force' related activities in a segregated technology environment, where a lower level of stability is acceptable.

Lastly, the community of practice was another method to form a cross-functional team for a hybrid organizational form. The FSO has formed an informal structure for managing software development practice across the organization. This involves managers, senior developers, and governance staff, such as security and enterprise architecture. The FSO's CIO mentioned the

formation of the informal structure has allowed the organization to sense the latest software

trends and implement them while keeping the formal structure intact.

Table 4 summarizes the above findings. The focus of these interviews was to collect data in

relation to flexibility in organizational forms required for PSOs digital transformation.

Table 4 - Themes for Organizational Form Changes in Digital Transformation

Resilience Theme	
Adaptability	• The results clearly show a need to retain resilience in PSOs. When asked to describe resilience, experts pointed to *'the ability to change without impacting the operation'* and *'secure operation'*. The FSO CIO described resilience as the ability to run digital innovations *'in a highly available, secure, and integrated way'*. • The FSO's head of innovation stated, *'the need for resilience is a perfect fit in digital transformation research'* because it provides the ability to deal with unknowns. *'It means not to use more energy than you need and to become lean', and* added, *'the key to resilience in the public sector is not to be aggressive, and not use more energy than needed. Digital transformation is like taekwondo!' as* you need to be resilient and at the same time, nimble in actions and reactions. "*It is the resilience that lets the taekwondo player be nimble*". • The Director of IT in the Canadian PSO said that "*the transformation is born out of resilience. Therefore, it is important to ensure the organisation is adaptable; otherwise you can't be both resilient and nimble*". • FSO senior manager of information said, "*adaptability is key to digital transformation. This includes adaptive leaders and staff*". • The US expert, director of the economic division, highlighted the need for adaptability for digital transformation in PSOs.

Stability	• The FSO senior manager for information management said, *'public sector organisations are expected to provide gold-standard services to the public'*. This means they need to keep their existing organisational capabilities such as bureaucracy in place for governance structure to ensure services remain stable.
	• The expert compared FSO to other PSOs such as in the health sector and defence where a less than perfect service is not acceptable to the public who look for *'flawless services'*.
	• Experts discussed that you couldn't provide a minimum viable product to the public as it won't meet their expectations
	• New Zealand consultant discussed his experience with the rugby world cup in New Zealand as the services had to be so stable requiring processes and structures to support them.
	• FSO CTO, who is new to the organisation, discussed the experience with previous firms as well as FSO, and stated: "*You would need governance for significant investments to ensure stability*". This points to the fact that bureaucracy is still required as an organisation goes through digital transformation.
Nimbleness Theme	
Flexibility	• Most interviewees believed organisations need to '*build flexibility into their operation.*'
	• The Australian FSO's senior manager of applications said, *'organisations can't adopt information technologies for digital innovation expecting their structure remains the same'*. Therefore, ensuring organisational changes accompany technology-enabled innovation is vital.
	• The business director expert in the US said that *'being nimble is the right way of thinking for a flexible organisation, then the organisation is able to adapt to change. The ability to adapt has become so important'*. The

interviewee added, '*this should help with more digital innovations in an era that the productivity in economy is hit due to the lack of innovation'*.

- All interviewees emphasised the organisational needs the flexibility to innovate incrementally and quickly in the digital era

- Experts almost unanimously mentioned the ability to respond to business needs and disruptions quickly as a core dimension of organisational forms in the digital era

- All experts emphasised on the need to innovate incrementally and quickly in the digital era, which requires nimbleness. Nimbleness to experts meant the ability to manage the co-existence of flexibility and speed in delivery.

- Experts from China, US, Canada, France, Australia believed all organisations need to "build nimbleness into their operation."

- Ability to react quickly to market needs was highlighted by FSOI experts. For example, an FSOI expert in China highlighted the importance of sensing in product management, "*the organisation had to create a new product, release to market, and quickly sense for success. However, the sensing shows that we couldn't compete with that product and had to retract it from the market. All of these had to happen in a matter of weeks*".

- The US expert, director of the economic division in one of the largest financial services organisations in the world, highlighted *"being nimble is the right way of thinking for a flexible organisation, then the organisation is able to adapt to change as the ability to adapt has become so important"*. The expert added, "*this should help with more digital innovations in an era that the productivity in economy is hit due to the lack of innovation*".

- The Director of IT in the Canadian PSO said that "it is important to be

		nimble yet stable delivering in small chunks with governance is delivery fast and flexibly with stability". And added, "you need to be agile with constraints like cloud services are".
	•	FSO IT strategy manager said: "*a core capability is an agility coupled with a fit for purpose governance to lower the risk*".
Speed	•	Almost all interviewees unanimously mentioned the ability to respond to business needs and disruptions quickly as a key requirement for digital transformation
	•	The ability to react quickly to market needs was highlighted consistently. For example, the CIO working in China highlighted the importance of sensing threats in product management: '*the organisation had to create a new product, release it to market, and quickly sense for its success. The sensing shows that we couldn't compete with that product and had to retract it from the market. All of these had to happen in a matter of weeks, and resources were deployed to other tasks*'.
	•	The CIO of a PSO in China said, '*creating the required capabilities for rapid response is a need for any organisation*'. Their organisation made an informed decision to invest in its people and trained staff in capabilities such as agile working, cross-functional teams and design thinking.
	•	Head of architecture at PSO in the US said: '*The resilience has been our focus, and now we are moving to be nimble as well both with technologies such as cloud and artificial intelligence, as well as organisational structure and the way we deliver and support things*'.
	•	"Lean Start-up" approach was cited by experts as the method they use to deliver with speed. The expert who heads the business innovation in an Australian PSO stated that the lean start-up approach allows to be both flexible and speedy, but at the same time work towards a purpose.

	• The FSO senior manager of applications said, "*the response to digital disruptions needs to be quick, but also strategic*".

5. Discussion

Overall, the critical analaysis of results show that experts agree on the need for a flexible organisation form that allows for resilience and nimbleness to co-exist in digital transformation of PSOs. This supports the findings from the literature that novel organisational forms are required to succeed in the digital era (Hinings et al., 2018). Such novel organisational forms are created by combining bureaucracy and networks forms which are described further below.

The results show that PFOs are employing a hybrid of bureaucracy and network forms by a combination of autonomous teams, the center of excellence for platforms, task forces and communities to create a cross-functional environment that balances resilience with nimbleness during digital transformation. The cross-functional structure employs resources from both bureaucratic parts of the organization such as the risk, compliance, legal, security and architecture to collaborate with developers and product owners with a common objective to achieve nimbleness and simultaneously retain stability. Therefore, the results show that temporal separation, structural separation and parallel-structure operating methods have been studied in the past as methods that increase organizational responsiveness, while useful for significant projects, have not been researched in the context of digital transformation (Raisch, 2008). In particular, the resuslts show that temporal seperation is only useful to increase nimbleness, however there is a need for more permanent structures of cross-functional teams to retain the stability of the organization while making it nimble.

5.1. **Managerial Implication:** hybrid organizational forms support nimbleness and stability

simultaneously in digital transformation of PSOs

This study shows that the interviewees see value in creating the ability for '*rapid response*'

via *'organizational and structure flexibility'* in PSOs. Such organizational flexibility has been

discussed in previous research, in relation to organizational contingency theory (Burns and

Stalker, 1961) and the innovation model (Utterback, 1995), and more recently by Hinings et al.

(2018) with respect to flexible organizational forms. The researchers have studied organizational

ambidexterity extensively to balance the exploitation and exploration needs of organizations

(Andriopoulos and Lewis, 2009, O'Reilly III and Tushman, 2013). However, the unique

contribution of our findings is that organizational forms become hybrids of bureaucracy and

networks, meaning they are not in a single form during digital transformation. In addition, our

research shows that the organization's structure needs to support multiple organizational forms

simultaneously in digital transformation. That requires strong collaboration, as the FSO's CIO

said: *'collaboration is now a competency and is expected at every level of organization,*

specifically in leaders, to support digital transformation.' These forms bring expert resources

together from business and technology departments to work on issues, threats, and opportunities.

However, given digital transformation is on-going, some parts of the organization are always

focused on resilience, while other parts focus on nimbleness. FSO experts pointed to the concept

of a *'dialer',* meaning leaders increase or decrease resilience or nimbleness depending on their

strategy for digital transformation. Leaders may decide a low level of stability is acceptable

while the organization develops nimbleness to deal with uncertainties. However, as noted earlier,

other parts of the organization still focus on resilience (e.g. security, infrastructure operations).

The research results from expert interviews and researcher's observations point to the fact that the hybrid organisational form covers different areas. This creates a multi-modal organisation which is the key managerial contribution of this research. FSO is an example of digital era organisations operating in multiple organisational forms simultaneously. Depending on the department or business needs a hybrid organisational form mode would be dominant. This dominance creates a paradox in organisations to handle both resilience and nimbleness.

Therefore, our study shows that there are four distinct types of hybrid organisational forms with each co-existing with others in a multi-modal organisational forms environment:

- **R**esponsive: highly nimble and stable, with most resources collaborating for rapid enactment of digital technologies while maintaining a high degree of stability via a formal cross-functional structure that is fully resourced to be autonomous. The results showed that agile organisation practices such as product ownership, the formation of expanded teams (guilds), as well as access to all required resources and platforms to function independently is key in being responsive. The FSO is working towards this organisational form, increasing digital resilience and agility. Similarly, interviewees from Brazil and Japan mentioned that this is what most organisations aim to achieve.

- **R**eactive**:** highly nimble with low stability, with most resources collaborating for rapid technology enactment in response to an imminent threat or opportunity, and only some on resilience. Interviewees said, while there is a need for digital transformation to focus on reactiveness by establishing task forces and working groups, PSOs have a tendency to focus on stability after the need for reactive activities disappears, and deform the structure. For example, FSO innovation activities are mainly resourced via a secondment.

- **R**esilient: highly stable, with most resources collaborating for digital resilience, but slow to achieve the outcome during the technology enactment. Most interviewees could relate to this form in the public sector and identified their organisation as highly resilient. Results show that PSOs use platform and supporting structures to build stable products and services, as the platform approach also provides a degree of nimbleness within the defined constraints. For example, the senior manager of applications at FSO highlighted the team used a platform provided by another FSO team, in order to rapidly respond to a cybersecurity threat without impacting the stability of the organisation. However, technology enactment of the platform when it was first established took years.

- **R**igid: low stability and low nimbleness, meaning the outcome of technology enactment are achieved slowly, and with a low level of resilience and excellence. Many interviewees could relate to this form, especially during the early days of their organisation's digital transformation journey. This organisational form relies on communities of practice to sense and respond to disruptions mainly due to lack of availability of resources, platforms, or due to strategic focus influenced by leaders and culture. FSO experts could relate to this when the organisation is focused on cost-cutting and increasing efficiency.
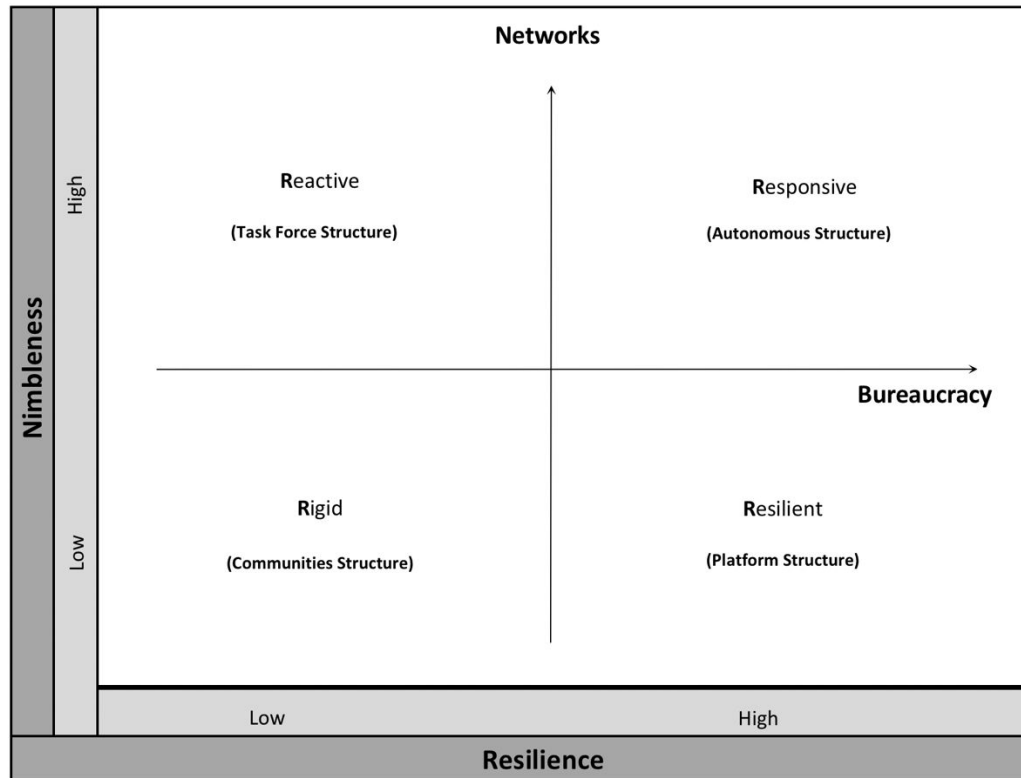
Figure 3 - Hybrid Organizational Forms in Digital Transformation (4R Model)

As discussed earlier, all forms are valid modes, and each is appropriate as an organisational response to digital transformation needs. However, according to the experts interviewed, most PSOs are focused on reactive and resilient forms. The expert from Japan and New Zealand said that while some organisations are focused on Rigid, you'd hope that it is more of a short transitional state while the organisation is working towards the next organisational form. Regardless, almost all experts agreed that there is always part of PSOs that is focused on Rigid, making it important to highlight that the hybrid organisation form covers multiple areas at any point in time resulting in a multi-modal organisation.

The 4R model provides a practical guidance to PSOs on changes of the organizational forms during digital transformation. The key is that PSOs need to operate in all forms at the same time

making them a multi-modal organizational. PSO leaders need to ensure their structure supports all modes of operating in digital transformation, and depending on the level of stability and nimbleness required their focus on a particular form could be more or less. This is the major contribution of this research, because the relationship and influencers are overlooked in TEF, and more generically in PSOs digital transformation literature.

5.2. **Theoretical Implication:** Hybrid organizational forms support the technology enactment in PSOs during a digital transformation

The main theoretical contribution of this research is to extend TEF to illustrate that the need for co-existence of nimbleness with resilience in a digital transformation results in a relationship between networks and bureaucratic organisation forms to create hybrid forms, which in turn influences technology enactment and its outcome. As described in TEF and shown in dotted lines in Figure 4, the outcome of technology enactment itself influences the enacted technology, the institutional arrangements and the organisational forms ultimately influencing the next round of technology enactment.

The novel concept of hybrid organisational forms for digital transformation was presented to research participants for validation. They confirmed that the concept and propositions made sense and that the idea of hybrid organisational forms is significant, necessary and is emerging in the organisation. The FSO's head of innovation said, '*the model shows that public sector organisations need to sense and respond by changes to the organisational forms, which is important as it has implications for organisational culture and leadership'.* The FSO IT strategy manager said, *'it will be useful for academic research to detail how culture and leadership*

should change in the digital era to support digital transformation', and added '*a model to guide*

digital transformation would be very effective for this organisation'. The FSO's CIO said, 'this

model makes sense', and asked if the researcher can show how those forms are reflected in

technology enactment process. Following this feedback, the four hybrid forms from the 4R

model were added to the extend TEF. The extended framework shows that the hybrid of

networks and bureaucracy influences technology enactment and is influenced by it. The required

level of hybrid from bureaucracy and networks forms is manifested in the organisational forms

(responsive, reactive, resilient, rigid). Therefore, objective IT is influenced by the hybrid

organisational form. The same objective IT could be enacted differently if the organisation is

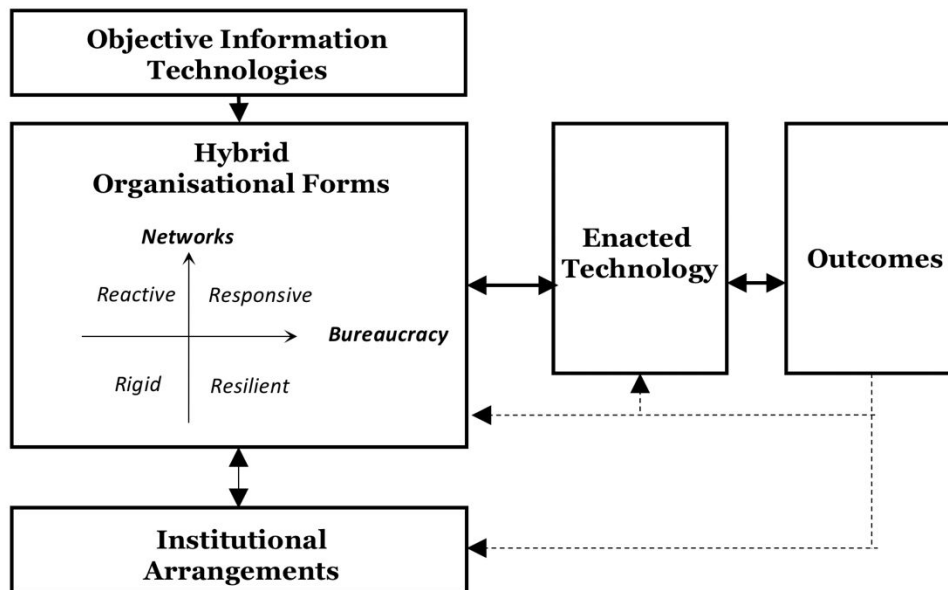focused on high resilience, high nimbleness, both or none.

Figure 4 - Digital Transformation Technology Enactment Framework

For example, a responsive organisational form with autonomous cross-functional teams is

more likely to build, reuse, customize and integrate the technologies into their need and adopt

more strategic information technologies. A resilient form is less likely to frequently enact technologies, however more likely to build configurations over existing platforms as needs for nimbleness arises. This is reflected in PSOs' use of platforms including FSO's case to respond to a cybersecurity threat where platform technology was used to quickly build a new system as the main system was shut down due to a cyber attack. The reactive form is less likely to re-use existing platforms and retain adopted IT. As described by innovation leaders, it is likely that once the 'reaction' response is completed, the team is deformed, and the enacted technologies are no more required. Therefore, the technology enactment is focused on the speed of adoption and 'fail-fast', and less focused on integration, customization and re-use of existing standards. This is reflected in FSO's increase in the count of technologies and their complex configurations as the organisation leaders at a point focused more on responsiveness in their digital transformation journey. A rigid form has the least impact on the objective technology enactment. Like experts highlighted, this form focuses on keeping the lights on, and more likely to accept and adopt technologies and related practices as they are. In summary, this research confirms the literature review findings that organisational form is a fundamental aspect of digital transformation.

6. Conclusions

Public sector organizations need to continuously innovate using digital technologies to continue to remain relevant and deliver their objectives in a rapidly changing contemporary environment. The need for digital transformation creates a need for hybrid organizational forms in PSOs for co-existence of resiliency and nimbleness in adopting digital technologies, prompting our expansion of the original TEF model as a guiding framework for researchers and practitioners. The following sections provide an overview of the research implications, key lessons learnt, limitation of the research and future research recommendations.

6.1. Implications to theory and practice

Our work shows that digital transformation shapes innovative PSOs that are both resilient and nimble. This will require collaboration among the networked and bureaucratic parts of the organization that manifests itself in cross-functional structures which results in a multi-modal organizational design. The hybrid organizational forms described in the 4R model address the identified research gap in the role of internal environments in digital transformation (Kohli & Melville, 2018). This is a significant contribution to the practice as leaders can set their organization's structure based on 4R model to handle resilience and nimbleness simultaneously during digital transformation.

On the other hand, application of 4R to TEF addresses a key gap in theory by depicting how technology enactment outcome could be impacted by hybrid organizational forms in response to the level of resiliency and nimbleness required during digital transformation

6.2. Key lessons learnt

A key learning from this research was that academic literature review plays an important reference in studying vague concepts such as digital transformation with industry experts. It helps remove prejudices that are based on industry materials, providing a common vocabulary to understand and categorize the meanings.

6.3. - Limitations of this research

Our snowball approach to expert selection resulted in limitations. 60% of our experts were in the IT department, and 40% in business departments. The result of this research could have been different if all or some practitioners were from business areas, or if more business experts were interviewed. In addition, this research would have benefited from multiple case studies or multiple interviews with the same individual throughout the research, or surveys with

quantitative analysis. Moreover, while this research involved in-depth interviews with senior executives, future research could examine the results in lower ranks in organizations.

6.4. Future research recommendations

This research identifies a need for a more detailed study to understand how organizational capabilities enable hybrid organizational forms in the public sector. Further research is required to expand on the relationships between networks and bureaucracy forms in PSOs beyond the finance industry to address the limitation for our research in generalizing the findings to all PSOs. Also, further research can identify influencing factors for shifting between organizational forms during digital transformation. This research can be expanded by conducting more empirical work, in terms of expert interviews or a large-scale survey, or including a larger proportion of private sector organizations.

A particular research gap and concern mentioned by an interviewee was the human aspects of a digital transformation; how would hybrid organization forms affect job satisfaction, job security, and human dignity?

Disclaimer

Views expressed in this paper are those of the authors and not necessarily those of the FSO

and interviewees. Use of any results from this paper should clearly attribute the work to the

authors and not to the FSO and interviewees.

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Hybrid Organizational Forms in Public Sector's Digital Transformation: A Technology Enactment Approach

Response to reviewers

We appreciate constructive comments received from reviewers. We have carefully gone through all feedback, and revised our paper accordingly. All changes are made in Red to make traceability easier.

Comments	Response
Reviewer 1	
The majority of changes proposed has been done in the last version of the paper.	Thanks for reviewing the revision.
it could be interesting to explain in the "Methodology" section the snowball method used to select the experts or companies interviewed or how the adhoc database was designed for the research.	Thanks for the suggestion. Please see page 13 for more details on our snowball approach and how literature review and database search was conducted.
The first time that the term PSOs is used, it is needed to explain what that is mean (hear call)...	Thanks for your comment. Please see page 4 line 3 for first use of PSO.
Sometime there are some spelling mistakes, for example "simmiallry", "organistionas", "gaols", "flexibility", "transofrmations" (all in pag 9)	Thanks for your comment. These were all fixed in the previous revision throughout the document. However, we checked this all and fixed errors including in the references.
Temperoal", "Oragnziation" (page 28)..	Thanks for bringing this oversight to our attention . Changed to 'temporal' and 'organization' on page 27.
page 28 "teams)" without the first "(" in the sentence.	Thanks for your comment. These was fixed in the previous revision.
It is not understandable why in figure 1, the figure 4 is cited, I recommend delete the text related with figure 4	Thanks for your comment. These was fixed in the previous revision.
In table 2 sometimes the authors said "case study", maybe it is needed to delete that reference. Or explain why	Thanks for your comment. These was fixed in the previous revision.
If the authors use "NZ", it is needed to introduce what that it means the first time (hear call….).	Thanks for your comment. These was fixed in the previous revision.
Reviewer 2	
Still some issues in the writing, please see the attached remarks to fix them. A good effort overall.	Thanks for reviewing the revision.
P.5 Ln 43 "TEF was developed in in"	Thanks for pointing this out. Removed the extra 'in'.
What is "t-government"? the term is being used before it is defined	Thanks for bringing this oversight to our attention. It is now expanded to 'transformational government' on page 5.

Ln 47 "form changes as a result if digital transformation"	Thanks for bringing this oversight to our attention. We changed 'if' to 'of' now.
P9. Ln 54 "technology focus is appropriate for studying digital transformation in the public sector Omar et"	Thanks for pointing this out. Referencing corrected on page 9.
P10 "More recently, researchers used TEF to as a key theory to study digital transformation in public" REPEATED FROM LAST REPORT	Thanks for the comment. Last time we changed "Researches" to "Researchers". This time realised we should have removed 'to', so that's done now.
p11 "Organizational forms such as rules of bureaucracy and the knowledge resulted from networks." "and cogitative elements" Figure 2: check copyright issues	Thanks for the comment. Changed to 'organizational forms impacts such as rules of bureaucracy and the knowledge in networks'. Changed cogitative to 'cognitive'. Thanks for pointing out the copyright issues. We have now added copyright reference under figure 1.
p.14 "Majority of interviews were"	Thanks for the comment. Changed to 'the majority'.
p.17, ln 16 "After each interview, the notes were categories by each interview question followed by mapping and critical" Grammar!	Thanks for bringing this oversight to our attention. We changed categories to 'categorized'.
p.17, ln 30 "3). This approach is similar to concept-driven coding (Gibbs, 2007) as the data analysis coding is informed by the literature review and prejudice in the hermeneutics approach." Something wrong with the sentence construction, see the underlined text!	Thanks for the comment. Changed to 'the prejudice in hermeneutics approach'.
p.21, ln 34 "Senior manager of information in FSO highlighted" Grammar!	Thanks for the comment. Changed to "FSO's senior manager of information".
p.22, ln 55 "The focus of these interviews was to collect data in relation to organizational forms flexibility in PSOs required for digital transformation.	Thanks for the comment. Changed to 'in relation to flexibility in organizational forms required for PSOs digital transformation'.
p.27, ln 41 "is a need more permanent structures of cross-functional" Rigid, hence important Grammar!	Thanks for the comment. Changed to 'there is a need for more permanent structure'.
p.31, ln 17 "on Rigid, hence important to highlight"	Thanks for the comment. Changed to 'focused on Rigid, making it important to highlight'