How to Engage Business Process Owners to Enhance the Effectiveness of Digital Transformation in an Agile Manner
——A Consolidated Adoption Framework of UTAUT and Neurological Levels

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ABSTRACT

Digital transformation is recognized as an increasingly essential facilitator to improve the efficiency and performance of organizations through utilizing digital technologies to impel organizational change, especially after the occurrence of pandemic. While companies and governments are heavily investing in the digital development, the performance on invest seems not satisfactory. Extant researches indicate that digital capability and mindset have been the major obstacles for companies to combine the digital technologies into current business process and achieve a satisfactory result of implementing digital transformation. Though there are abundant sophisticated studies on technology acceptance at individual level, given the dynamic nature of digital transformation, it is necessary to investigate the factors that would influence users to transit mindset to be digital and embrace the digital technologies in the ever-changing context. Hence, this paper endeavors to fill the gap mentioned above through investigating how to engage business process owners to facilitate the performance of digital transformation in an agile manner through theoretical research framework with secondary data support. From a theoretical view, this research extends UTAUT model from the aspect of user attributes in individual level contextual factors by combining Neurological levels. From a managerial perspective, it applies agile management in digital transformation from the perspective of business process owners. The result shows that in order to achieve satisfactory performance of the digital transformation, the organizations need to facilitate an agile environment for business process owners to develop digital mindset and digital capabilities following neurological levels to speed in routinizing and integrating new technologies in to existing business process, and it is imperative for management to encourage process owners to treat change as constant and to be agilely adapt to the dynamic nature of continual digital transformation.

Keywords: *Digital Transformation; Business Process Owner; Unified Theory of Acceptance and Use of Technology (UTAUT); Neurological Levels; Agile Management*

1. INTRODUCTION

The application of digital transformation is in the stage of accelerating expansion and acts as an increasingly instrumental facilitator to the development and evolution of organizations. The importance and urgency of digital transformation have been further amplified after the occurrence of COVID-19 [1]. Many governments and organizations have injected significant investments to the digital development, but are facing many obstacles, especially on digital gaps at individual level [2]. Extant researches indicate that the individuals post-adoption behaviors on the information technologies are essential to the success of technology implementation [3]. In the context of digital transformation mentioned above, business process management logics of organizations are in a necessity to be adaptive to the changing digital environment [4]. Nevertheless, in recent years, though the amount of researches on digital transformation is in explosive growth, extant researches lack investigation on view of business process owners to improve the effectiveness of digital transformation in the

changing context [5]. Therefore, this research endeavors to fill the gap through investigating how to engage business process owners to facilitate the performance of digital transformation in an agile manner.

This paper lists three research questions to be investigated: First, why insufficient engagement of business process owners would impact the effectiveness of digital transformation? Second, how to improve business process owners' engagement in digital transformation? Thirdly, how can organizations continuously engage business process owners in digital transformation? To answer these questions, this paper adopts theoretical research framework and use secondary data to support the analysis. From a theoretical view, this research fulfills the call of Venkatesh et al. to extend UTAUT model in the aspect of user attributes in individual level contextual factors by combining Neurological levels [6]. From a managerial perspective, it applies agile management in digital transformation from the perspective of individuals. For further studies, the author suggests researchers should continue to extend UTAUT model by combining other contextual factors to obtain new insights.

2. LITERATURE REVIEW

2.1. Digital Transformation

In recent years, especially after outbreak of pandemic which has revealed the highly connectedness and digitalization of the world, the researches on digital transformation are gaining increasing popularity [7]. From the perspective of organizational change, digital transformation is defined as "organizational change that is triggered and shaped by the wide-spread diffusion of digital technologies" [5]. Due to the rapid development of technologies, the fundamental business models of new emergent tradings are born differently with traditional companies [8]. As for business process, which is the vascular system of the organization, digital transformation is inherently different from tradition IT-enabled business transformation due to its generality, as it is embracing the constant emerging digital innovations and can not be simplified to a single, fixed united system such as ERP [4]. In other words, digital transformation is

redesigning organizations to change-adaptive structures and roots these adaptive structures into digital business ecosystems [5].

2.2. Business Process Management and Business Process Owner

Processes are a collection of activities to create value, in the joint effort of both human and technology, which are usually divided to three categories: management, core and support [9]. Business process management is recognized as a sophisticated research area to improve operation efficiency and performance, which is organized through capability frameworks around "Strategic Alignment, Governance, Methods, IT, People, and Culture" [9]. The emergence of digitalization requires organizations to update their BPM capability areas in aspects of individual behavior, cooperation at all levels and process optimization. Correspondingly, there are business process owners who play an essential role in implementing process and monitoring the performance of the process and take the full responsibility for end-to-end process utilization and optimization [10]. In the context of digital transformation, business process owners are expected to be more agile in integrating digital technologies into the current business process structure to enhance the efficacy and efficiency of business operation [4].

2.3. Unified Theory of Acceptance and Use of Technology (UTAUT)

There are abundant sophisticated studies on technology acceptance at individual level, but they are scattered and overlapped to some extent. Venkatesh et al. first formulated a united model as Unified Theory of Acceptance and Use of Technology (UTAUT) in 2003 to enable the organization leaders and managers to measure the success probability of new technology adoption and utilization and to conduct effective measures related to four moderators to influence user acceptance [11]. In 2016, Venkatesh et al. further pointed out that researcher directions (shown in Figure 1) could be expanded around the higher-level and individual contextual factors such as environment, organization and user attributes [6].
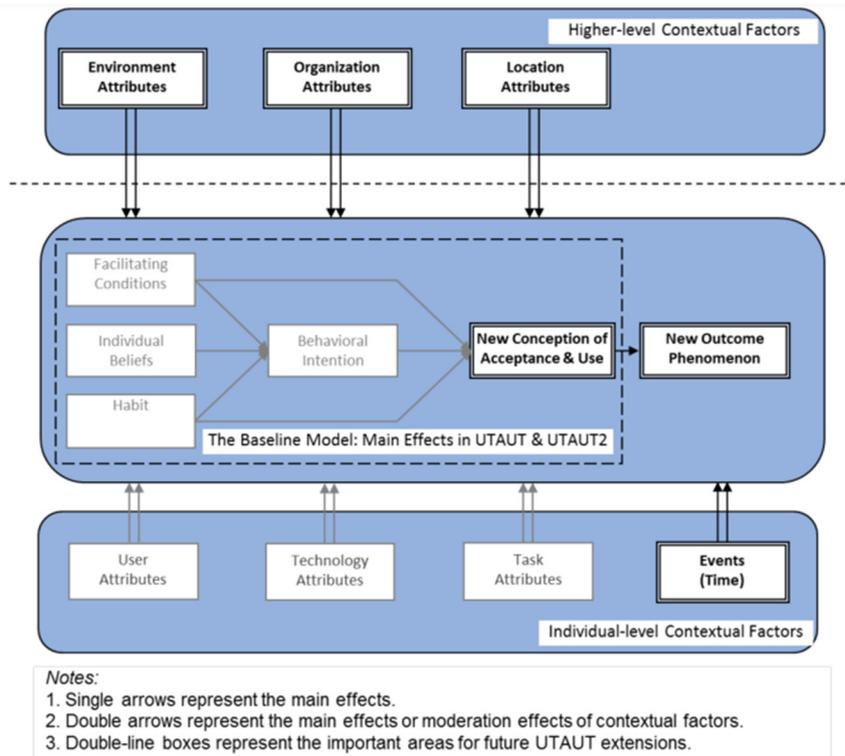
Figure 1. A Multi-level Framework of Technology Acceptance and Use [6]

2.4. Neurological Levels

Neurological Levels Model (also called Dilts Pyramid) is an effective mechanism in behaviour science to understand how individuals act or react in certain circumstance, which is originally adopted in Neuro Linguistic Programme to facilitate language learning to achieve specific goals [12]. Neurological Levels Model includes six levels (shown in Figure 2) including spiritual, identity, beliefs & values, capabilities, behaviors and environment [14]. This model has wide application areas from individuals learning assessment to organizational business-transformation alignment [12] .
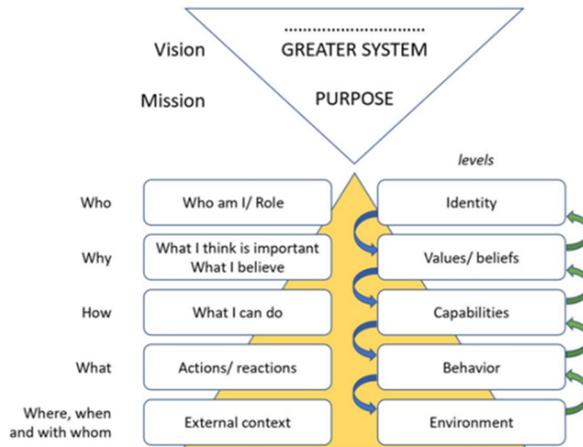

Figure 2. The Neurological Levels Model of NLP [12]

2.5. Agile Management

Agility represents "speed and flexibility", which is first adopted in leaner software development [8]. The traditional organization model is dominated by bureaucracy mindset, and in the world of bureaucracy, the communication flow follows a vertical and top-down path and dynamic is under strict control [13]. The ever-changing environment requires organizations to be ready to make management decisions in an rapidly adaptive way and traditional organizational structure and management mindset are not able to respond and support the dynamic transformation [8]. Hence, agility as an essential concept stands out for companies to conduct flexible reactions in the VUCA (volatile, uncertain, complex and ambiguous) context [14].

3. ANALYSIS AND RESULTS

3.1. Business Process Management, Business Process Owners and Digital Transformation

Along with the rapid development of the digital technology, a syndrome called "technostress" has prevailing among the technology adopters, the symptoms of which include anxiety, depression and etc. and appear when users have interacted with digital platforms with excessive time [7]. Meanwhile, evidence shows that willingness of individuals of routinizing and infusing technologies into business process is the key facilitator of information technology-facilitated performance [3]. According to McKincy's report in 2020, digital skill gaps

(51%) and digital culture conflicts (48%) were the top two challenges proposed by organizations in the process of digital transformation, and 41% of respondents found integrating digital technologies into core architecture is harder than previous perception [2]. As in the early stage of information technology post-deployment, most users have cognitive cost to reach satisfactory performance when adopting the new technologies, and times is needed for adaptive process to be normalized and routinized [3]. Therefore, if the process owners are recoiled from new technologies or reluctant to spend the cognitive cost and run-in period, achieving expected digital transformation performance by waiting the business process combined with new technology to be routinized would be postponed indefinitely.
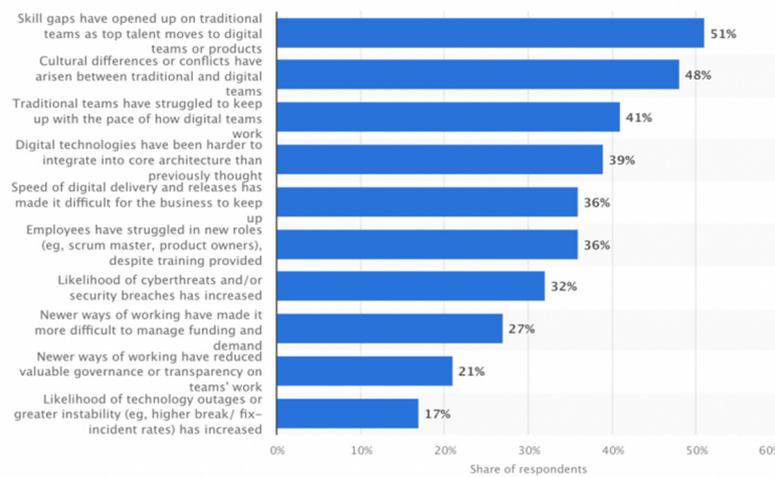

Figure 3. Challenges encountered as a result of digital transformations as of 2020 [2]

3.2. Business Process Owners and Digital Transformation Acceptance

To investigate how to improve business process owners' engagement in digital transformation, the work combines the UTAUT model with Neurological levels to have an comprehensive analysis, and the structure is shown in Figure 4.
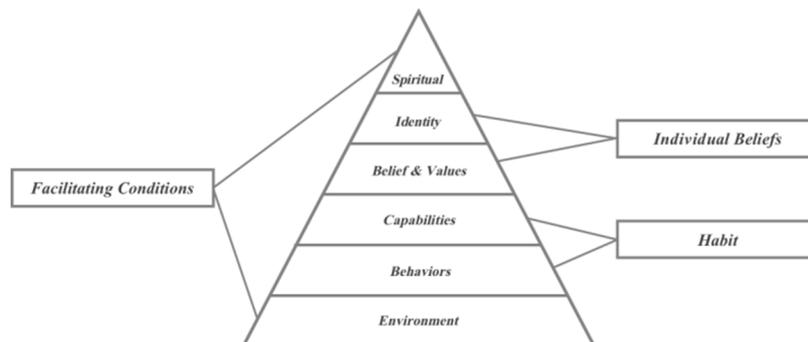

Figure 4. Combination of UTAUT model and Neurological Levels

3.2.1. Facilitating Conditions

The purpose is the spiritual level in the original version of the Neurological Levels Model. In the context of organization operation, the purpose represents the mission and vision of the company, as the highest goal the organization wants to achieve [12]. To enhance the

effectiveness of digital transformation, the organization needs to cultivate a digital mindset to impress the business process owners with the promising prospect facilitated by the digital transformation.

Environment is the "context" when activities are conducted [12]. Collection of distributed information silo could facilitate information processing efficiency and

effectiveness [4]. In the context of digital transformation, it is imperative to emphasize the transparency, consistency and continuous improvement of the business process from "end-to-end", and it is also essential for management to build the information transparency among the departments and segments of the whole organization to improve the efficiency of the data flow and to avoid decentralized information islands.

3.2.2. Individual Beliefs

The identity reflects the roles that individuals play in their career or social life [12]. In this study, the identity focused are business process owners who are the representatives of the business silo areas and the connected business process. As the alignment between digital transformation path and business process is the prerequisite of successful implementation of new digital transformations, business process owners needs to be reminded that they are play an instrumental role in the monitoring and optimizing the business process performance with updating technologies.

Beliefs are the convictions that individual think as true, and values are those are significant to them [12]. In aspect of organization culture, digital transformation aims to reshape organization's mindset to make digital as an intrinsic quality among the enterprise. Accordingly, business process owner are cultivated to believe the positive effectiveness of digital transformation on the organizations, business process and themselves.

3.2.3. Habit

The capabilities represents the skills or abilities to accomplish the tasks to achieve the purpose [12]. In the context of digital transformation, it is essential for individuals to realize the current ability and the gap between current and desired capability and breakdown the learning process into feasible steps.

Behaviors are the actual things that individuals are doing or plan to do [12]. Individuals need to be encouraged to express their perception proactively and creatively to enhance the transparency and correction mechanism of the system [14]. Hence, the management could encourage business process owners to take first step in integrating digital technologies with current business process proactively.

3.3. Agile Management

In the context of digital transformation, the fundamental perspectives of the business process management - process, infrastructure and agency logics - need to be refined into an agile manner to adapt to the dynamic environment [4]. The dynamic and highly-connected world has forced the management board of organizations to think in a systematic manner when

making decisions rather than direct cause-effect deduction [14]. The irregularity of the complex organizational system control may present to be disoriented, but the management could continuously monitor the key indicators of the enterprise system performance to ensure the healthy operation of positive enhancement loop [14]. Individuals of the system need to be encouraged to express their perception proactively and creatively to enhance the transparency and correction mechanism of the system and provide insights for management to monitor and intervene the system with more effective options [14]. Therefore, it is imperative for the management to cultivate an agile environment and encourage process owners to treat change as constant and to be agilely adapt to the dynamic nature of continual digital transformation.

4. CONCLUSION

To conclude, this paper has answered the three research questions displayed at the outset of the paper. Firstly, the research finds that the mindset level factors including obstacles cognitive cost and run-in time for business process owners to integrating digital technologies are the major obstacles for realizing satisfactory results of digital transformation. Second, this study shows that in order to achieve satisfactory performance of the digital transformation, the organizations need to facilitate an agile environment for business process owners to develop digital mindset and digital capabilities following neurological levels to speed in routinizing and integrating new technologies in to existing business process. Thirdly, the management also needs to cultivate an agile environment and encourages process owners to treat change as constant and to be agilely adapt to the dynamic nature of continual digital transformation.

As for significance, this research contributes on both theoretical and managerial aspects: in a theoretical view, this research extends UTAUT model in the aspect of user attributes in individual level contextual factors by combining Neurological levels; from a managerial perspective, it applies agile management in digital transformation from the perspective of business process owners. As for further research directions, researchers could continue to extend UTAUT model by combining other contextual factors to obtain new insights.

AUTHORS' CONTRIBUTIONS

This paper is independently completed by Jingqi Ding.

ACKNOWLEDGEMENTS

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