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Towards Digital Workplace Framework: Roles and Tasks of Mobile Worker

Mohamad Kamal Md Dahlan[1], Natrah Abdullah[2] and Ahmad Iqbal Hakim Suhaimi[3]

[1]Special Task Force Office, Ministry of Internal Affairs, Putrajaya MALAYSIA, [2,3]Faculty of Computer and Mathematical Sciences Universiti Teknologi MARA (UiTM), Shah Alam Malaysia

Corresponding Author Email: natrahadb@uitm.edu.my

Abstract

The digital workplace is a new concept that uses technology to modernize traditional business processes and workflows. In the context of digital workplace, mobile worker is identified as one of the critical elements of digital workplace and called mobile worker. Since digital workplace relates to organization change management, any changes in each component can effect other component. Therefore, there is a need to understand the connection of between each component in a context of digital workplace. Therefore, this study will be strengthening connections between technology, task and people components in the context of digital workplace. This study also, will explore potential key features and job roles of people to be good in performing task within digital workplace. In this research applies a literature review method by implementing literature search and analysis on related topics. An empirical study was conducted to identify the main characteristics of the mobile worker and the changes in the job roles of the mobile worker. The result shows components for digital workplace applied modernize traditional business process and workflows using technology. However, rely on technology alone is not enough. Applying changes is important as to develop a successful organization. But, any changes on a component make other elements need to be considered: people, task, technology and structure. However, this research has a limitation in looking at the productivity of mobile workers. Future research should therefore investigate factors that enhance the productivity of mobile workers.

Keywords: Digital worker, Digital Workplace, Job Roles, Mobile Worker, Mobile User.

Introduction

During Covid-19 pandemic, work from home and work from office currently accept technology, computers, the Internet, and the World Wide Web as part of survival and success in the business world. This means that organizations must exist and function competitively. Thus, digital workplace become important, and it is a new concept uses to modernize traditional business process and workflows using technology. In previous study, digital workplace is defined as a digital work environment consists of people, task, and technology

tools. Brief descriptions about digital work environment have been revised and discuss in previous study section.

In addition, endemic covid-19 requires employee to work faster, collaborate more effectively, and work more efficiently to meet deadlines and to successfully do their jobs. Though technology is at the center, humans remain at the heart of work. When building a digital workplace, organization need to take into consideration the fact that today's workforce is more diverse than ever, and in ways it is never been before. There are multiple generations at work together, workers are working from a variety of locations, different roles job and job scope. They can work, collaborate and sharing information while in the move. They were known as mobile worker. With the above in mind, it is important for organization to identify mobile worker element that will engage employees, regardless of where they are working from. A well-designed digital workplace will enable teams to communicate, collaborate, and function at peak productivity, regardless of space and time.

Basically, the people manage tasks such as submitting, retrieving, sorting, tracking, and approving. In some situation there is a need of people to be outside of the physical office and with the capability of the technology tools, all tasks can be successfully delivered. Some studies (Tochia (2021); Colbert et al (2016); Cherry (2016) show this new environment helps people to cut down on the number of hours spent dealing with busy work and at the same time remove human error.

Reducing human errors during performing a task is one of the good performance indicators. How does digital environment allow people in a sense of 'doing it right'? This paper will extend the framework by strengthening the technology, task and people components in the context of digital workplace. This study also, will explore potential key features and job roles of people to be good in performing task within digital workplace.

The remainder of this paper is structured as follows: Next section gives an overview of previous study which suggests components of the digital workplace. Section Research Methodology explains method approach and its components. Section 4 contains the results of the study. We then proceed to discuss the contributions derived from these results in Section 5. Lastly, Section 6 assesses our study regarding its limitations and concludes the paper.

Previous Study

Since digital workplace relates to organization change management, Leavitt diamond (P. Mulder, 2019) has been applied to identify components of digital workplace. The digital workplace is defined as combination of technology, task and people (Lehrer, 2011). Previous scholar has mentioned that one the heard of the digital workplace is people (Koffer, 2015). People is someone who works in more than one place or travels as part of their job. People requires technology tools to support in their daily task (Litwin, 2011; Ojala and Pyoria, 2018; Gruhn and Kohler, 2007; Sena, 2010). Thus, previous study has proposed The Digital Workplace Framework (Dahlan et al., 2021) as shown in Figure 1.

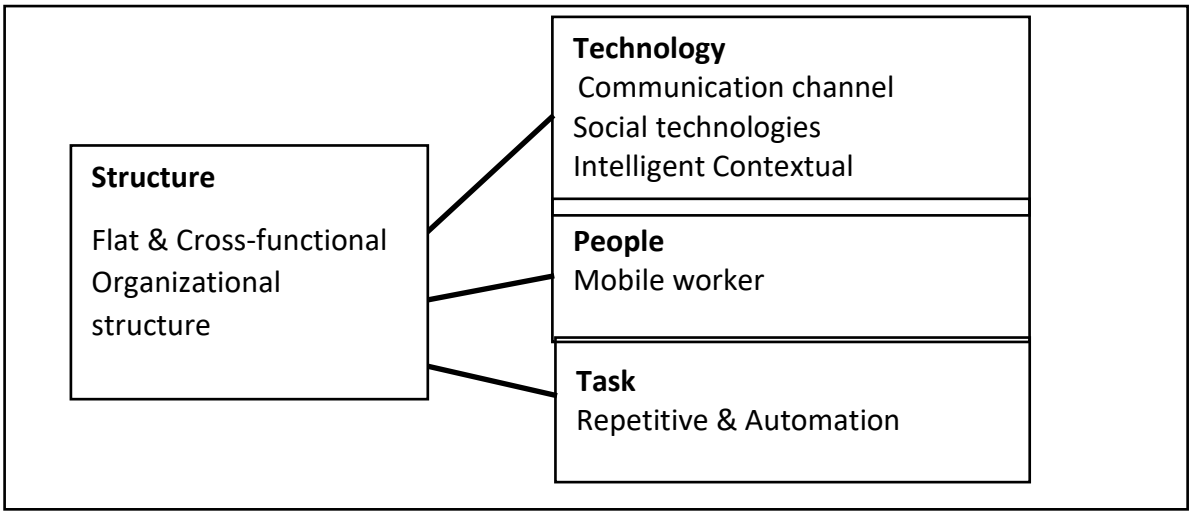

Figure 1. Digital Workplace Framework (Dahlan et al., 2021)

Since digital workplace relates to organization change management, any changes in each component can effect other component. Therefore, there is a need to understand the connection of between each component in a context of digital workplace.

Methodology

In this research, we have conducted a literature review method by implementing literature search and analysis on related topics. Since mobile worker is one of important element of digital workplace, the focus for the research is to retrieve previous literatures with regards mobile worker key features and job roles. Several areas of searching of title, keywords and abstracts have been use for searching literatures for instance 'digital employee', 'digital worker', 'knowledge worker', 'mobile workforce', 'mobile worker', 'flexibility worker', 'job roles', 'mobile worker job roles', 'job title', 'job responsibilities' and 'job description'.

The above search keywords were applied to several search engines subsequently: (i) Researchgate, (ii) Springerlink, (iii) Sciencedirect, and (iv) google scholar (v) Sagepub (vi) Semanticsscholar. Researchgate and Semanticscholar are online search engine journal that mainly found articles related to this research. Springerlink, Sciencedirect, Sagepub, and Semanticsscholar is a search engine that mainly found journal articles, Researchgate has a wider article base and includes conferences and workshops proceedings. Finally, google scholar was added to broaden the scope even further and to also find more recent articles or unreviewed articles as well as books that may be of interest to investigate.

from the searching process, the articles will be compile based on the keywords and then will be filter based on impact and effect of mobile worker and changes of job roles towards organization. Below is the research design diagram of literatures analysis process.

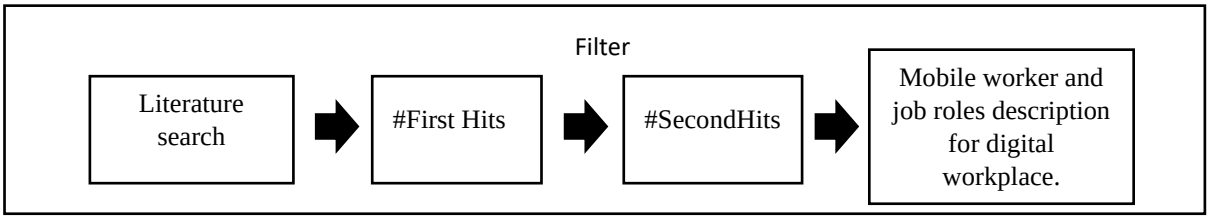

Figure 2. Literature Analysis Process

Next, an empirical study was conducted to identify potential digital worker tasks. The online survey was conducted from February to June 2021. In addition to demographic information, questions will be asked about technology use, tasks, and job roles. This survey targets government employees who have been working from home since the last year of 2020 during movement control order (MCO) season.

Analysis and Results

Relationship between People, Task and Technology

Previous scholar has mentioned that one of the elements of digital workplace is mobile worker (Koffer, 2015). Mobile worker is someone who works in more than one place or travels as part of their job. Mobile worker required mobile technology to support in their daily task (Litwin, 2011; Ojala and Pyoria, 2018: Gruhn and Kohler, 2007; Sena, 2010). According to Yuan and Zheng (2009), mobile field worker usually does repetitive task. Changing the way, they work into automation can help employees to cut down on the number of hours spent dealing with busy work and at the same time remove human error. Automation task not only improve quality of task, but also enhance work performance and speed (Manyika et al., 2017). Meanwhile, changes of job roles will effect with the use of technology (Colbert et al., 2016). Type of tools and skills may be differed than the others. Figure 3 shows the proposed Digital Workplace Framework with the related components.

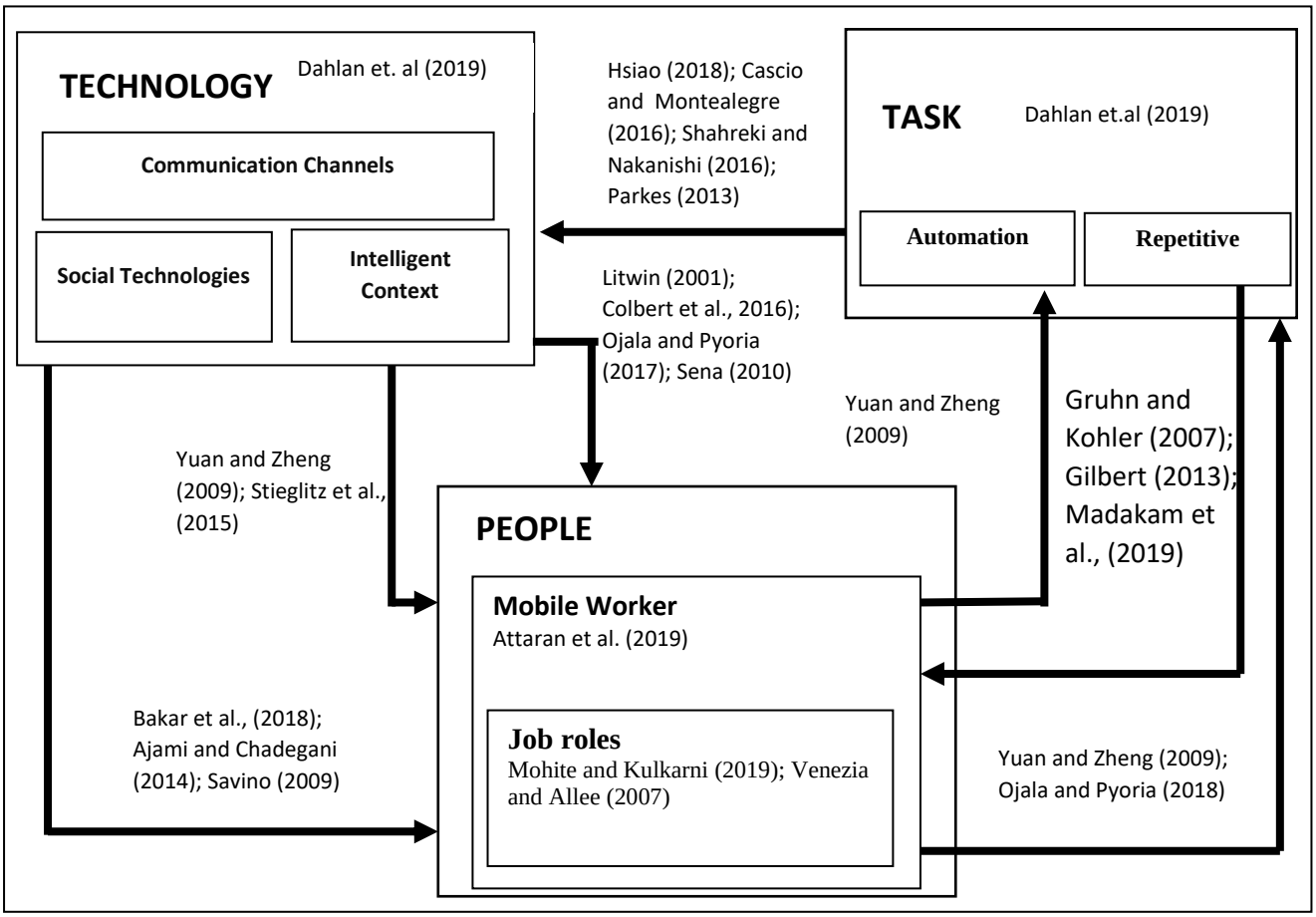

Figure 3. Digital Workplace Framework

People: Mobile User Type

From literature search, 36 articles and conference proceedings related for the research have been compiled. Then, based on the impact and effect of mobile worker and changes of job roles towards organization. The result that meets in the scope of the research is 25 articles. Literature shows that people need to work faster, collaborate more effectively and efficiently to meet deadlines and successfully complete their tasks (Attaran et al. 2019), (Cascio and Montealegre, 2016) and (Colbert et al., 2016). Even when technology takes center stage, people remain at the heart of the (Koffer, 2015). When it comes to the digital workplace, organizations must consider the fact that people are more diverse today than ever before (William and Schubert, 2018). There are multiple generations working together, people working from different locations, having different roles and responsibilities. They can work, collaborate and share information on the go. It is important for an organization to understand the requirements of this type of workforce so that they are able to work at peak productivity regardless of space and time.

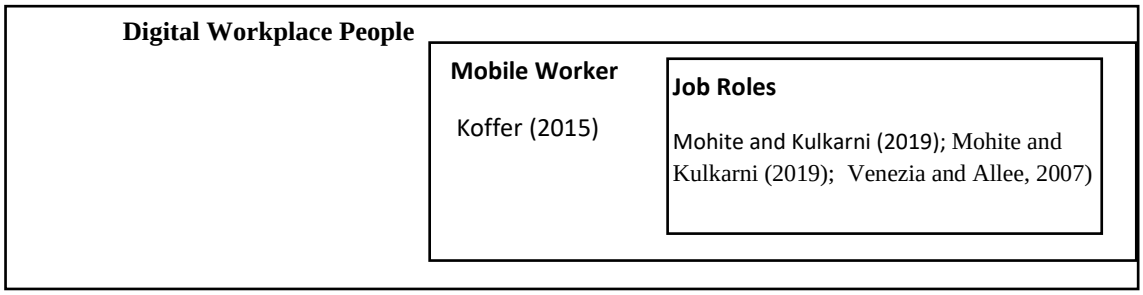

Figure 4. Digital workplace and mobile worker

Mobile worker is defined as someone who works in more than one place or travels as part of their job (Sena, 2010; Colbert et al., 2016). In other words, mobile worker is not bound by a central physical location because they connected through mobile devices (Koffer, 2015). The key to empowering a mobile worker is to allow employees to work the way they want, from anywhere, at any time, on any device. Unified communications have proved its value for a mobile worker. With today's working environment mobile technologies have revolutionized how organization interact with their customers, how employees collaborate with one another and how businesses choose to operate (Sena, 2010; Litwin, 2011; Venezia and Allee, 2007). The objective of mobile worker is to make them productive outside of the office as when they are in it. Mobile worker should be able to remotely access information as they would at the organization. According to Bassett (2020), there are two category of mobile worker which are Information Mobile Worker and Frontline Mobile Worker as shown in Table 1.

Table 1
Mobile Worker Categories

Category	Descriptions
Information mobile worker	A worker who works from a single location, has allocated computing resources, and tends to create, transform, and distribute data and/or content using productivity and enterprise applications.
Frontline Mobile Worker	A worker who does client-facing or operational activities onsite or in the field that need mobile access to data, content, applications, and workflows.

Information mobile worker who works from a single location, has allocated computing resources, and tends to create, transform, and distribute data and content using productivity and enterprise applications. Information mobile worker includes mobile professionals, occasionally mobile workers, and mobile non-travelers. Bakar et al (2018) categorized frontline mobile worker as mobile field workers and mobile on-location workers. Mobile field workers are workers who do not have a primary work location and work from one location to another location. Mobile on-site workers are workers who work at an assigned location. Field workers are often faced with repetitive structured tasks. They must rely on immediate information that depends on a specific situation they are working on at that moment (Bakar et. al, 2018). Therefore, this study extends the work role of mobile workers in relation to technology use.

Job Roles

Job roles is a description of what employee need to do in work. Since the industrial revolution, job roles have had dramatic effects on the labor market. Many agree that many job roles are changing rapidly as Information Technology (IT) is overwhelming (Colbert et al., 2016). This statement supported by previous scholar mentioned that technology is the enabler to the job roles (Savino, 2009; Hsiao, 2018). Even, with the use of new technology has caused some roles to vanish while also creating new, previously unheard-of job titles.

On the other hand, technological have also led to the emergence of new job titles. This indirectly create a greater sense of work flexibility and handling last minute changes. However, bear in mind that it is important to understand that the job roles of mobile worker changes when implementing the mobile strategy. Changes of mobile worker job roles involving the way how work is done (Ajami et al., 2014) and (Venezia and Allee, 2007). According to Sena (2010) and Venezia and Allen (2007), mobile worker nowadays, primarily work tasks were computer-based teamwork and correspondence; creative thinking, planning, scheduling or coordinating; phone conversations; learning, research, and writing; creating presentations; and reading.

Tasks

An online survey was conducted to identify possible tasks that mobile workers perform. There are 121 support staff from the government sector who responded to the survey. They are classified into 3 categories based on their work experience; 79.3% have more than 11 years, 11.6% have between 5 and 10 years, and 9.1% have less than 4 years. 36.4% mostly agree and 52.1% agree that work tasks have changed due to the use of technology.

Almost 90% of the respondents use smartphone and laptop to perform professional tasks and only 0.1% rely on personal computer. The use of smartphone and laptop is mainly for simple and easy tasks. And the smartphone is convenient for communication between team members in the digital workplace. The feedback from the respondents shows that the use of technology has led to the emergence of new job titles and some roles have disappeared. Among the tasks, there is a group into three task types: heavy and complex task, collaborative task and routine task. (Table 2).

Table 2
Job Roles

Worker Category	Task Type	Tasks	Frequency
Information mobile worker	Heavy and complex task	Create data	106
		Analyze data	106
		Share data	121
		Transform data	106
		Sorting information	33
	Collaborative task	Emailing	121
		Texting	121
Frontline Mobile Worker		Calling	121
	Routine task	Approving request	33
		Submitting forms	106
		Requesting information	30
		Searching information	110
		Troubleshooting	16

Collaborative tasks such as email, texting, and calling are most commonly used by both categories. For heavy and complex tasks, most digital workers use information manipulation such as creating, analyzing, and transforming data. However, sorting information is the least common. For routine tasks, frontline mobile workers usually perform information searches and form filling. And they rarely approve requests and troubleshoot problems.

Discussion

This study makes the following contributions: First, we identified related components for digital workplace as presented in Figure 3. Digital workplace is a newly working concept used to modernize traditional business process and workflows using technology. However, rely on technology alone is not enough. Applying changes is important as to develop a successful organization. But, any changes on a component make other elements need to be considered: people, task, technology and structure.

Also, two distinct categories of digital workers from the literature review explaining on key worker tasks and their roles. People plays a vital role in running the organization. In the scope of digital workplace, mobile worker is identified as one of the critical elements of digital workplace. In digital workplace, mobile worker should not only know the key features of mobile worker but also identify changes of job roles that involved in an organization.

Lastly, we show several of the identified user tasks are task-specific and report findings from the online survey. This suggests that collaborative tasks are common and applicable across the digital workplace. However, there are few tasks that cannot be accomplished through the use of technology, such as sorting information, troubleshooting, and requesting information. However, this research has a limitation in looking at the productivity of mobile workers. Future research should therefore investigate factors that enhance the productivity of mobile workers. Meanwhile, communication technology enables mobile workers to work on collaborative tasks anywhere and with any device.

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