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KA7068 – INVESTIGATIVE PROJECT

**THE ROLE OF DIGITAL INTELLIGENCE IN PROJECT
MANAGEMENT – ¹WHAT SKILLS AND COMPETENCIES
PROJECT MANAGERS NEED TO ACQUIRE AND MASTER TO
MANAGE FUTURE PROJECTS**

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Literature Review

Introduction

In the context of having a review on the importance of digital intelligence in project management and identifying the skills that are required in developing digital intelligence, various aspects have been analyzed on a literature basis. The literature review is going to analyze the importance of digital intelligence in project management as well as the required skills for the implementation process. The paper is also going to discuss the past literature descriptions of the respective matter. Literature from different authors will be discussed focusing on the importance and implementation process of digital intelligence in project management. It is going to shed light on the literature gaps in the implementation process of digital intelligence in project management. The theories of different authors will be analyzed in this paper using respective theoretical and conceptual frameworks. Lastly, a summary of all discussed research will be attached with the literature review of the respective matter.

Importance of Digital Intelligence in Project Management

As per the opinion of Berente *et al.* (2021), digital intelligence can help project managers in delegating and completing their respective works connected to the development and generation of the respective digital product. Businesses that utilize digital intelligence can depend on experts in exercising their respective processes for the creation of digital products and implementation of any digital projects. Digital project management involves the method of managing, planning and executing digital projects and digital intelligence helps in focusing the respective methods with more efficiency. As opined by Dhamija and Bag (2020), digital intelligence helps project managers by implementing work scheduling and automated alerts that are important for daily activities in project management. On the other hand, digital intelligence contributes to the workforce by creating different complicated work methods easier which aids in the evaluation process of project management as well as contributes to saving time. The application of digital intelligence assists the project management in analyzing and quantification the outcome as well as helps the project managers in implementing effective digital and social projects in the future. As per the opinion of Brock and Von Wangenheim (2019), digital intelligence has the capacity of improving the effectiveness and accuracy of project management. It can be utilized to automatically create the work schedules for the project on the basis of the previous records of the project. The

automatic scheduling process by digital intelligence can help project managers in decreasing the time that is needed in planning a project. It also aids the project managers with fewer chances of mistakes that can occur in the procedures of the project management. On the other hand, digital intelligence can be utilized to give timely warnings of any potential issues. It can also play an important role in monitoring the project as well as can forecast the unfolding procedure of a project.

As opined by Haenlein and Kaplan (2019), the tools of digital intelligence can automate different tasks that include daily updates of the project, planning the meetings of the project, setting reminders for the meetings and other administrative activities. It permits the project managers and members of the team to focus on difficult activities that involve a higher level of planning. Businesses that invested in developing digital intelligence in their project management process have encountered an increase in the productivity of the management by 15% approximately. Project managers who are utilizing digital intelligence in their activities related to the project have seen an improvement in saving their time through managing documentation, resource planning and monitoring improvement with the help of digital intelligence. As per the opinion of Shabbir and Anwer (2018), digital intelligence helps project managers in forecasting potential opportunities and risks by using the alert feature. Digital intelligence is going to transform the mind of project managers into a semantic network and assist them in allocating different tasks in the future. The digital intelligence-generated project scheduling can comprise the knowledge gathered from the previous project and provide suggestions for different possible schedules on the basis of the dependencies and context of the respective project. On the other hand, the digital intelligence generated plans can be rescheduled on the basis of the previous records of the team performance and the progress of the project. These real-time project plans help the digital intelligence to alert the managers of the project about the upcoming forecasted opportunities and risks. The estimation of the upcoming opportunities and risks also helps the project managers in creating necessary changes in the planning of the project according to the requirement of the upcoming risks. It also helps the managers to opt for upcoming opportunities by providing them with proper support in the adoption process of the implementation plan.

As opined by Jakšič and Marin (2019), the tools of digital intelligence can evaluate the necessary pieces of information from previous and current projects. Data analysis is a significant process in project management as it is concerned with the deadlines and estimation of costs in project management. Digital intelligence provides data-based insights to project

managers which help them in providing proper guidance to the project without getting defeated by unexpected hurdles and difficult methods. Project managers can also implement better procedures with the help of the data-based insights generated by digital intelligence. The tools of digital intelligence also help the project managers in adopting different methods towards the betterment of the project by giving better insights about the information of the project. As per the opinion of Recker *et al.* (2021), digital intelligence helps project managers in effective contributions toward the management of people. It provides effective solutions to the information related activities in the project which helps the managers by saving time on the project. The "iron triangle" that includes scope, time, and cost has always been influenced by the managers of the project as it is the most significant aspect of project management. Thus, digital intelligence helps the team of the project management to focus on core aspects of the process that includes team building, people management, network development and project vision by automating the daily data related activities. Digital intelligence can forecast deflections from the schedule of the project by using the tools implemented by it. However, digital intelligence does play a role in the resolution process of any conflicts that have been caused by the differences. Thus, the project managers are merely responsible for keeping the activities of any project on the proper track.

Skills required for the Implementation of Digital Intelligence

Primary would be, one should know the basics of handling computers, tablets, or smart phones for professional and personal work to perform tasks delegated to them in this digitally active and socially present world of now. Secondary is, one should be able to find simple or complex information and knowledge from the internet to learn and interpret to themselves for a better understanding of the subject of the matter. The tertiary would be, one should be observant and careful enough on the internet to not be entangled in shady websites or get their private information leaked by hackers or IP trackers and get their PC (Personal Computer), tablet, or smartphone get infected by malware, viruses, trojan horses, worms, and so on. Quaternary is, one should be responsible and active enough ³ on social media platforms such as Facebook, Instagram, Twitter, BeReal, Telegram, and so on, to be seen as an active and quick-to-respond type of person. And they should also maintain proper usage of vocabulary and proper punctuation marks for sounding and being professional (Lyu and Liu, 2021).

Digital Intelligence Or digital knowledge is the ability to use technology with the help of data in order to make informed decisions, and drive effectively sound decisions resulting in,

effective implementation of digital intelligence as a base, such employees and the including organisation must have a few key skills for basic needs and workflow:

- **Communication:** the proper cohesive ability in creating and maintaining influential communication between the organisation's database and data-inspired insights and recommended opportunities and relevant ideas to the stakeholders.
- **Adaptation:** this shows the ability for learning and adapting to new technologies, tools and equipments that are coming out on a daily basis in this modern era, one should have enough just enough knowledge to understand what is what in actuality, helping themselves on the long run by the help of adaptability.
- **Problem Solving skills:** the most important ability one could have in today's technologically advanced world, in order to identify data miscalculations in the IT sector of an organisation, and solving normal or major problems using technology as their very own ladder for leverage in the world which is technologically changing every single minute, thus, retaining and securing their own workplace through sheer knowledge and skills (Shi *et al.*, 2022).

According to Munir *et al.*, (2022), to gain significant advantages and to take giant leaps in the marketplaces by organisations, in return taking digital intelligence to the next level, a few set of advanced skills are highly required or someone would say, needs to know for proper and almost perfect execution of tasks and relatively effective implementation of it through highly complex and variable dynamic business environments all around the world. These advanced skills include that could be said as the basis of advanced skills:

- ***Deep Machine Learning***

This is one of the most important and intensive ability one could have to build a server on it, maintain its regular operating updates, and deploy algorithmic patterns that could point out and learn from data provided to them in making predictions for effective action and swift implementation.

- ***Artificial Intelligence (AI)***

This another one of the abilities an organisation asks, to effectively build systems that can perceive data provided up to them and having quite the knack for knowledge and data entries, the AI module grasps and learns the meaning of the information they have been provided under 10-30 minutes, and unfortunately for humans, that same information could take at the least, 4–6 days just to understand what kind of information the data entries are being shared, AI is being implemented for honest and to understand complex patterns in data and make

intelligent decisions.

For improving one's intermediate level and skills in the implementation of Digital Intelligence, several tips are to be considered for optimum effect. Primary should be, focusing on developing one's data-analysis skill for statistical methodology, data mining (focused more into crypto management, that is a topic for another day), and visualisation of data through PDF files, pie charts. Secondary would be, practical and critical thinking by asking questions that are, daring, and making challenging assumptions to ensure that one is making great decisions and progress based on their field they are in and the knowledge they possess. Tertiary is, building one's technical skills by learning and knowing programming languages such as Python or Java, as well as tools like Tableau and Power BI. Quaternary could be, to engage and learn with professionals at the field to gain experience as time moves on and stay updated with the latest trends and technologies of the market place and the needs of the customers. Finally, developing a growing and a sound mind space would embrace learning as an ever going process to stay ahead of the curve in this rapid-paced world of tomorrow (Bucea-Manea-Țoniș *et al.*, 2022).

Another aspect of digital intelligence is the context. Digital intelligence is not a rigid or global trend, rather it is shaped by social, cultural, and environmental situations and factors included as a package or an extension. For example, access to technology is common and not biased, education and training for better understanding and handling of tech tools, equipment and products, social norms and values can all impact an employee's digital intelligence and quotient to be honest (Sillat *et al.*, 2021).

Past Literature

Digital intelligence, also called digital quotient (DQ), is the ability to use digital technologies and commodities for effective and intelligent resolutions to solving problems, making decisions, and achieving targets. Recently, there has been an ever increasing focus on the need and importance of digitalisation as technology and data are continuing the charge to transform our world and making it an intertwined network all around.

Digital intelligence explores different aspects of the conceptualisation of digitalism and basic or advanced intelligence, to its definition and to its implications for employees, organisations, or individuals. The topics covered in this literature include the role of data analytics and analysis in decision-making, challenges plus good opportunities presented by big data collections and the need for literacy, skills in the modern workforce, for digitalisation through

the means of technology by the minute.

A few other areas of research correlated with digital intelligence include data maintenance, privacy, storage, and so on. This impact of technology on social and political systems worldwide and catastrophic potential risks and even benefits of artificial intelligence and automation on an industrial scale that is also known as 4IR (4th Industrial Revolution). To be honest, the literature background of digital intelligence is so diversified that it is constantly evolving to reflect the rapid-paced and lightning fast nature of technology and its impact on humans not as a country, as a whole civilization. Lastly, from each and every section during the industrial revolution and it comes with its complexity, even though there is massive development with each revolution, it also comes with costs and coupled with a number of things in play for the bigger picture. After all, the advantages have always overshadowed the disadvantages of most techniques, ideas, theories, hypotheses, and so on for years now.

Literature Gap

Implementation of digital intelligence in project management comes with various types of difficulties that should be another aspect of this paper for having a better review of the implementation process of digital intelligence. The implementation of digital intelligence in different types of project management processes can also increase the unemployment rate of the country as it provides the automation service of various types of data related activities (Zhang and Lu, 2021). Several risk factors are also attached to the implementation process of digital intelligence that involves trust and safety of the data. The privacy concern of important pieces of information is another major concern of developing digital intelligence in project management. The reports that are generated with the help of digital intelligence have less creativity as compared to the human generated reports and project implementations as it gets done with the computer based knowledge (Henderikx and Stoffers, 2022).

Theoretical Framework

Digital intelligence is conceptualised, a preset of skills and contingencies that enable organisations to use technologies such as, digital marketing, digital advertising, and so on effectively. This concept of digital intelligence has taken inspiration and formation from a wide variety of field of skills in general, for example, psychological field, educational field, computer science could be said as the prime example here and all the aforementioned fields are coupled with other constructive theoretical formations such as, digital literacy, e-

citizenship, and many more to count (Klašnja-Milićević and Ivanović, 2021).

The term, Theoretical Framework for digital intelligence should be divided into three groups. The Cognitive element of DQ has inclusion of skills such as problem-solving and critical assessment of an organisation in a nutshell.

The Behavioural component imbibes and uses DQ effectively and efficiently, a few examples could be, searching for information actively for proper assimilation of the subject and the matter, 24/7 communication online and lastly, creating original digital content. The Affective group has attitudes, values, preferences, biased for a certain brand, and so on are related to digital technologies, such as acceptance of new technological advances, self-efficacy on a digital scale and careful about digital risks plus opportunities for success (Chiu, 2021).

Summary

Overall in the long run to be precise, digital intelligence or DQ (Digital Quotient) is always trying to provide a few very useful lenses for understanding of the skill set and competency scales that are very needed to gain experience, brand name around the country/world, and popularity in today's digital world through social media platform and so on. After developing a much better and deeper understanding of digital intelligence or DQ (Digital Quotient), with the support of the organisations which has implemented digital intelligence or DQ (Digital Quotient) and coupled in with their employees can better locate opportunities and navigate through challenges faced by them with the help of digital technologies and data readily available nowadays and work towards a more literate and understanding society who know acceptance of digital intelligence and technologies for a better day resulting in prosperity of the region/state/country and even in the prosperity of the world all around.

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