REVIEW OF SOFTWARE AND WEB APPLICATIONS DEVELOPMENT PROCESS

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ABSTRACT

The software development process as well as the various phases involved in the development process needs to be taken into account in order to ensure proper accomplishment of the goals. Software engineering deals with the use of software systems for a variety of system operations. The use of this form of engineering is highly common in the modern world and contributes to significant positive developments in regards to organisational performances. Various common devices such as smart phones and computing devices require the use of software for proper operations and achievement of performance goals.

Keywords: Software Engineering, Requirements Engineering, Software Development, System Operations

I. INTRODUCTION

This research paper presents a detailed analysis on various software engineering processes and also provides insights regarding new developments within the organisational structure with the use of these software processes. The study also provides a critical analysis on information gained from various books and articles dealing with information regarding the use of software engineering processes. The use of various research designs help to ensure a structured approach for the achievement of organisational goals. These research designs involve the use of exploratory, explanatory and descriptive processes.

II. LITERATURE REVIEW

In the modern digital age, the use of Big Data is a major factor involved in the software and application process developments. Big Data deals with the collection of large sets of information (Najafabadi et al. 2015). It is known as Big Data due to the fact that these datasets are of high volume, velocity and variety. This information is not properly structured and utilises a semi-structured or quasi-structured process (Suhaib, 2019). The information needs to be refined in an efficient
manner in order to achieve the necessary organisational goals. These datasets are significantly large and can provide a detailed understanding of various factors and issues involved in regards to a certain situation or event. Various organisations store large amounts of data relating to their operational processes, performances and sale of various products and services. This data can include information gained over the last few years and even 10 years in the case of some of the well known organisations.

The big data processes are highly effective in storing large amounts of data which can lead to increased performances of the systems. It was found that the information collected from these systems is highly efficient in utilising a wide array of data. This data contributes to the development of High Performance Computing (HPC) technologies (Suhaib & Ohnishi, 2018). The data collected by conducting these big data analysis processes can provide insights regarding strategies used by various organisations and the results received. Additionally, information can also be gained regarding the year or specific years during which the performances of the company were highest. High performances indicate an effective implementation and selection of strategies for the brand and also have a considerable number of positive effects on achieving data software design needs.

Various risks involved in the development process can be evaluated in an efficient manner with the use of brainstorming processes (Dennis & Johnstone, 2016). The proper use of brainstorming can help to identify various risks involved. These risks can be presented in detail with the proper use of a risk register or risk matrix. The use of a risk register can help to keep track of a variety of risks faced by the organisation and can help to develop new ideas and strategies in order to deal with the problems. On the other hand, the risk assessment matrix presents detailed insights on various possible risks, their effects and the methods by which these risks can be dealt with.

III. RESEARCH PROBLEM

The prime research problem taken into account within the study involves the development of a system operations process that utilises various hardware devices as well as software systems for improved development processes. The development of high-value hardware and software devices can ensure the accomplishment of a coordinated approach that can lead to significant improvements in regards to performance of the system (Suhaib, 2019). This research ensures that various systems are developed with the proper use of high quality raw materials and resources as well as the software systems are built in an efficient manner with the use of a variety of programming languages.

IV. AIMS AND RESEARCH QUESTION

The main aims of the study involve keeping track of the efficient development of software systems that can help to ensure coordinated operations of various system components and features.

The research questions that can be utilised in order to ensure efficient operations of the systems are as follows:

- To determine the various processes that can be used in order to ensure proper system operations
- To analyse the methods by which various software systems can be developed in order to ensure increased performances of the systems
- To recommend the necessary ways to improve the operations of software based
systems in order to achieve a coordinated approach within an organisation for proper performances.

V. METHODOLOGY

This study has been conducted with the use of a positivism philosophy. The positivism philosophy involves the use of natural sciences that deal with logical thinking processes in order to achieve the necessary goals. On the other hand, as per Ryan (2018), the interpretivist philosophy deals with the use of social sciences which involve the collection of data based on the views of various respondents. The positivism philosophy has been especially selected due to its ability to implement logical thinking for various operational processes. The deductive approach has also been selected in order to deduce various ideas and concepts involved in the development of an efficient system. On the other hand, the inductive approach deals with introducing a new scientific idea or concept and thus cannot be utilised within this study.

The use of an exploratory design involves the exploration of various new ideas and concepts involving scientific ideologies. On the other hand, as opined by Creswell & Creswell (2017), the use of an explanatory design deals with providing a detailed explanation of various factors involved in the development process. Finally, the descriptive design focuses on providing a detailed description of various processes involved in the development methods. This study utilises the explanatory method in order to provide the necessary explanations for various system developments involved.

This study has been conducted by collecting data from various secondary sources. These sources include data collected from various books, journals, articles and websites. The data collected for this study is qualitative in nature and involves text-based information regarding the use of software engineering processes and big data analysis processes. The quantitative methods have not been used due to the fact that this study does not involve any new implementations. The data has not been collected from primary sources due to the fact that only a few people have proper knowledge regarding the use of these processes. Additionally, due to the fact that skilled software engineers are rare, they receive significant positive feedbacks and a large number of opportunities. Therefore, there are higher chances to receive biased views than that of a true understanding of various processes.

VI. RESEARCH ETHICS

The study has been conducted by collecting information from various books, journals, articles and websites. The information that has been collected for the research has not been manipulated in any way. Additionally, the information gained from the study has been critically analysed in order
to gain proper knowledge and ensure effective understanding of a variety of factors. However, the views gained from the insights of the author have been respected due to the fact that the author may have found the presented information based on the data collected some years back. Information has been collected, especially from books and journal articles that have presented details with the use of English language. This process has been used in order to prevent issues relating to duplicacy involving presenting unrealistic data by providing journals in different languages as a cover.

VII. RESULTS AND FINDINGS

The use of software systems such as IBM Watson is effective in conducting these big data analysis processes and can also lead to knowledge and understanding regarding new possible developments that can be made in order to increase system efficiencies. Additionally, as mentioned by Chen, Argentinis & Weber (2016), it can also provide insights regarding new developments that can be made in order to ensure proper accomplishment of the system operational goals. In order to analyse big data sets, the information can be stored in the form of .csv. The csv files can be imported to the IBM Watson Studio AI Big Data Analysis software system. The information within these csv files is first refined in order to gain significant amounts of data. Additionally, this refined information can be reprocessed in order to gain insights on a variety of factors such as organisational performances over the last few years (Suhaib, 2019). Furthermore, the information on various strategies and operational processes are also taken into account in order to gain proper knowledge and understanding on new developments that need to be made.

System goals involved in software engineering processes involve the implementation of a variety of ideologies and strategic actions that can lead to better developments in regards to software systems for the operations of a variety of hardware components (Yan et al. 2018). It was found that, every organisation needs to have a set of goals that they need to achieve within a provided time-frame. The lack of organisational goals can lead to major losses for the organisation and affect the brand in a negative way. It was found that in software engineering processes, it is highly important for the project manager to identify various risks involved and to develop the necessary processes that could lead to significant positive developments and can be efficient in dealing with these risks.

Conflict identification is a major factor that needs to be taken into account in software engineering processes. The conflict identification process deals with evaluating various possible conflicts between various software and hardware based system components (Degiovanni et al. 2018). The use of these conflict identification processes can also lead to major positive developments in regards to the implementation of various system components that synchronize in an efficient manner. Proper
synchronicity between systems can lead to major positive developments in regards to performances and can lead to a significant increase in profits ad sales of the selected brand (Suhaib & Ohnishi, 2018). The employees within the brand need to be able to develop the necessary systems with the minimal use of resources and by cutting major costs involved in the development process. The development of good relations with various supplier groups can help to ensure the availability of high-quality resources that can help in improved system development.

VIII. CONCLUSION

Based on the above study, it can be concluded that the Big Data analysis processes can be used in order to ensure the proper accomplishment of various project related goals involving the software development process. The development of software systems that can operate with the proper use of hardware components can lead to significant positive developments for the organisational procedures. It was found that Big Data Analysis can lead to significant improvements in brand operations due to the fact that it includes large volumes of information that can be utilised by a variety of systems within the organisational structure. On the other hand, it was also found that organisations need to have clear goals in sight in order to ensure proper achievement of various operations. The use of new ideologies involving the use of modernized programming languages such as C#, ADO.Net and ASP.Net contribute to this positive development so applications and proprietary software that leads to various improvements in regards to performances.

IX. FUTURE RESEARCH

The future research regarding this topic can be conducted in an efficient manner with the use of different methodologies. The proper availability of time and budgets are required in order to collect data from various respondents. These respondents include employees and managers from various organisations. Data needs to be specifically collected from employees and managers due to the fact that they have proper knowledge regarding the issues as well as new developments that have been made. The use of surveys and interviews as well as a secondary analysis can be effective in order to gain proper insights regarding possible new developments within the organisational system.

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