Effects of Cloud Computing in the Workforce

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Abstract

In recent years, the incorporation of cloud computing and cloud services has increased in many different types of organizations and companies. This paper will focus on the philosophical, economical, and political factors that cloud computing and cloud services have in the workforce and different organizations. Based on various scholarly articles and resources it was observed that organizations used cloud computing and cloud services to increase their overall productivity as well as decrease the overall cost of their operations, as well as the different policies that were created by lawmakers to control the realm of cloud computing. The results of this paper support the positive outcome of the introduction of cloud computing and cloud services while also providing minor obstacles that organizations may face when in the process of introducing cloud computing in their organizations, as well as show different policies that help regulate cloud computing and cloud services.

Key Words: Cloud computing, cloud services, privacy, competition

Introduction

The study of several Universities in Jordan has found that the incorporation of cloud computing has had both a positive and negative impact on different organizations. These organizations such as Universities utilize cloud computing to improve their productivity and improve their business procedures. The result of the implementation of cloud computing in Universities and other types of organizations is impacted by a wide variety of variables as shown by the research done on several Universities in Jordan. These include how faculty and staff react to the new changes in their working environment. It has been shown that staff and faculty will react favorably to the implementation of cloud computing if it helps them complete their work more efficiently than before. Another variable that has a great impact is the system complexity and how fast staff can be trained on using the different new cloud services. One benefit that Universities have seen with cloud computing is easier and better accessibility to the different programs and courses with the introduction of different tools such as Zoom and Blackboard to aid students in their online schooling. This better integration of online schooling thanks to cloud computing has opened the door for Universities to widen their horizons for students that may not have been able to attend their school due to lack of consistent transportation or other circumstances. Furthermore, the utilization of cloud computing in Universities has allowed them to mainstream their different resources for students. This includes resources such as libraries and book archives now available online for students to use. This decision to have library archives be located online will give the online students more tools to be successful in their school careers and makes their online schooling programs more appealing for people that are not able to be on campus physically. The space advantage of an electronic archive allows universities to increase their research materials without having to increase the amount of space required to store all of

these different resource materials. As a result of not having to maintain a large number of

physical databases among other things, Universities are able to cut down on their spending

regarding storing those physical databases. In addition to cutting down on physical data storage,

they are also able to cut down on the space required to store important documents from each

department of the University and use cloud services to centralize all their information and make

it easier to access by the faculty and staff.

<div align="center">

Method

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The parameters for choosing the data and articles for this research paper can be seen in

(Figure 1), below.

<div align="center">

Figure 1. Parameters for Article selection.

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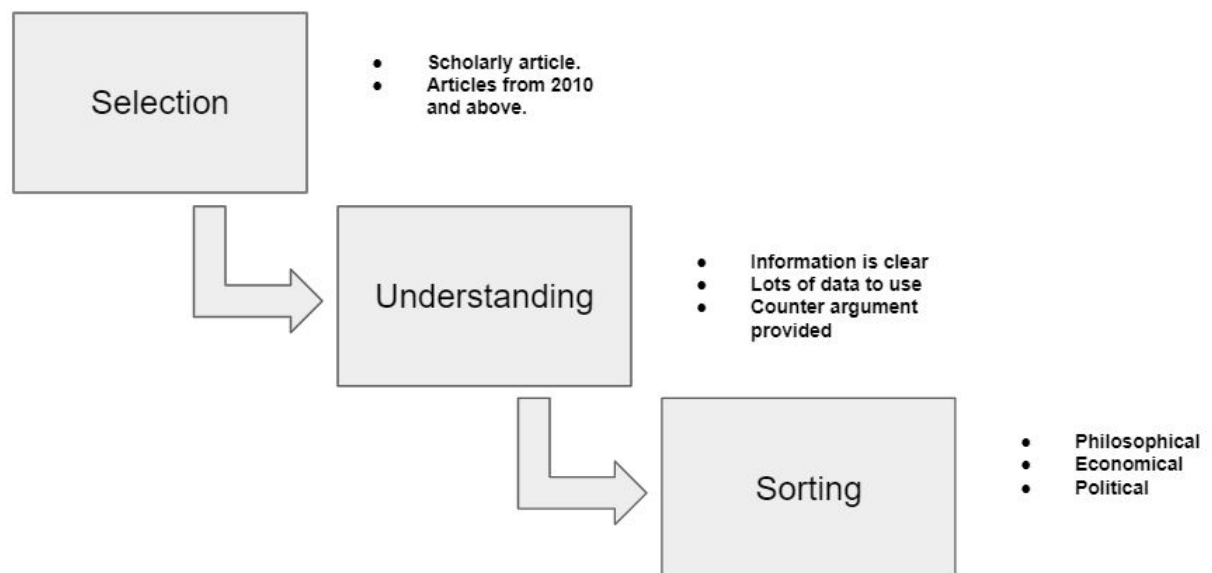
As shown in the diagram above, the articles used in this paper were carefully chosen

under certain criteria. In the first portion of the parameters for article selection, only articles that

have been reviewed considered scholarly articles and were created after 2010 we selected. In the

second portion of the selection, the selected articles were read thoroughly to understand the

author's intent; in addition, information of interest was highlighted. In the last step of the article selection process, all of the articles that pass the previous steps were divided into the three disciplines that this paper would focus on.

<div align="center">**Review on Economical Effects**</div>

Cloud computing can have a positive impact on the economical aspect of an organization. Implementing cloud computing in an organization can be very beneficial when done correctly. Organizations can utilize cloud computing to better manage their data and keep it more secure than if it was in a physical store. Having information in the cloud would also allow organizations to access their information a lot easier and as a result, this will cut down on costs that had to be made as a result of storing and maintaining physical data. Having the data in the cloud would make an organization have competitive advantages by being able to retrieve the data needed a lot faster than if it was in some physical storage. This speed provided thanks to cloud computing will make an organization more efficient, which will then make them more desirable than other organizations that have not implemented cloud computing and cloud services as part of their systems of operations. Research supports that trend seems to be focused on structuring the necessary model for the decision-making process of adopting cloud computing for firms in a hierarchical way and on how decision-makers prioritize decision area, decision factor, and decision attributes (Yoo & Kim, 2018). Another way that cloud computing can positively impact an organization is that it allows different levels of an organization to have access to the same data and ideologies. Companies have used cloud computing by sharing their ideologies with their partners to better utilize their resources to achieve the goals that they have in common. This is achieved by reducing the amount of monetary waste that companies may have had earlier before the implementation of cloud computing in their systems. The benefit of cloud computing is that

due to its low cost of implementation, any business can implement a cloud computing and cloud

service approach to help them become more competitive in comparison to their rivals in the same

industry. Over time, cloud computing has been shown to be the future for businesses and

organizations who wish to stay competitive in the market by allowing easy access to different

resources that a physical database or service may have not had.

Review on Policies/Laws that Affect Cloud Computing?

Research has shown that the main issue with cloud computing is security. Laws and

policies have been passed in order to protect the user of these cloud services as well as what to

really do with the data that companies who offer the cloud services can do with the information

that they have stored. The main fear of different users, as well as governments, is how secure

their information is when it is being stored in the cloud. Cloud computing and services are run by

third-party entities that store someone's information in their servers so that way you can access it

whenever you want. Lawmakers have questioned how secure are these third parties from cyber-

attacks and if it is even a good idea to have your information be stored in the cloud at all. Due to

these concerns, privacy laws have been passed in order to better secure one's data stored inside

the cloud. These privacy laws enforce certain parameters that cloud services need to uphold in

order to be able to provide their services to their end-users. Article 12 of the United Nations

Declaration of Human Rights states that privacy is a human right, which highly suggests those

third party companies that are in charge of protecting one's information from outside attacks to

also, not use your information as a means of profit, by selling to other companies (Dan

Svantesson and Roger Clarke, page 391-397, 2010). Laws and Acts such as Health Insurance

Portability andAccountability Act (HIPAA) provide guidelines on how users of cloud storage

can properly store their data using cloud services. There are many other laws that help both

consumers and third-party companies know the "do and don'ts" about cloud computing and how to safely store their data and the different levels of data security that certain information needs to be placed under; failure to adhere to these policies and acts may lead to lawsuits against the companies that provide that service as well as the user that miss-use cloud computing and cloud services. Cloud computing is a serious risk to privacy and consumer rights, which is why strict laws and policies need to be established around cloud computing to make sure that these third-party companies are not abusing the data and information that they are tasked to store and protect.

Conflicts in Theory

Conflicts that the introduction of cloud computing in organizations can face is the rejection from workers in that organization. Research indicates that the benefits of adopting new technology are not achieved if organizations' engagement and commitment by staff are found low (Matar et. al, 2020, p. 32). In some cases, staff of organizations has been shown to reject the introduction of new technologies, this is due to the reaction that people tend to reject change in their working environment. This trend is a result of organizations introducing drastic changes in the work environment abruptly and without much time to train the staff with the new technologies that they will be using before actually introducing the new technology into their organizations. Without the proper procedures to show the employees and staff of organizations how these different technologies will be beneficial to them by helping them with their workload and even becoming more productive, the introduction of the new technologies will just become that much harder. In the Studies of the Universities of Jordan, they indicate that by giving proper training and showing their staff how to properly use the new technologies such as cloud computing, they were able to determine that staff was more friendly to the idea of using the new

technologies in their working environments. In addition to the acceptance of staff to the new technologies like cloud computing, another conflict will be the amount of work that it would take to transfer all the physical data from different archives and move them to cloud base storage. The implementation of cloud-based storage will take a significant amount of time due to all of the paper trails that need to be moved around. All of the old equipment that is not needed anymore would need to be removed and disposed of properly from all of the different departments of an organization and depending on the size of the organization it may take some time for the process to be fully completed and fully implement the new technologies.

Conflict in the Economical Sector

Complications of the move to cloud computing-based business would be how different companies and organizations utilize cloud computing to save money and increase profit in their organizations. Competition is a major reason why businesses are trying to convert to implement cloud computing into their systems. Eventually, every business will have some sort of cloud computing incorporated into their business and as a result, having incorporated cloud technologies will cease to be a major selling point for different companies and organizations. These organizations will shift their interests on how they can use cloud services better than their competitors and will create more dependency on different techniques that they can utilize cloud computing for their business. Corporations will try to incorporate cloud services to their different levels of business all the way down to their production level. As a result of this implementation on different levels, proper training must be given at all levels of a company. The training required to operate different cloud technologies will require a lot of time and resources from the company and resulting in some loss of revenue on their part. Another area that they will lose profit will be in the process that they will have to take to improve their old systems that use

physical data, transferring all of that data into the cloud. The removing of all systems and discarding them will also be another way that they will lose some sort of profit. Companies will also have to spend more profit on making sure that the cloud systems are being used properly by the different levels of the company or organization by contracting more specialized people to make sure that the cloud services are being used correctly and to make sure that the cloud services are being used for business purposes only as well as provide help for those in the network that need have any sort of issue with the new systems that they will be utilizing. Some sort of periodical training will have to be provided by the company to make sure that everybody using the system is competent and know the basics of how the use the cloud services as well.

Conflict in Policymaking

Cloud computing in the political aspect is the policies and laws that surround cloud computing. Cloud computing and close services as a whole are still very new and not many policies have been drawn around them yet. The policies that are now in place focus more on the protection of personal data that the cloud service companies have access to from their users that are using their services. Laws and policies will need to be revised constantly due to the speed that this type of technology advances every year. Policymakers will be unable to keep up with the advances in technology to make sure that the companies are kept in check and that they are not using wholes in the legislation and take advantage of their consumers. Current policies are more focused on the protection of the consumers' private information than focusing on the different ways that cloud computing services should be used and the parameters that they can operate on. The lack of different levels of security that a cloud service company should offer could lead to vulnerabilities in their systems and as a result, may cause hackers to obtain sensitive data from individuals and other companies. There are no guidelines for the types of

security levels of cloud services that government officials, as well as government organizations, should use to protect their information against hackers and other countries that might attack those service companies to obtain sensitive data that could compromise national security and the well-being of the citizens of the United States.

<h2 style="text-align:center">**Common Ground**</h2>

The studies in the Universities of Jordan observed that implementing cloud computing into their ecosystems was extensive. In a school setting; as stated in the research, the Universities staff does not agree with new changes made by the Universities because of having to learn how to use the new technology to assist them with their work. For this new implementation of cloud computing, the research of the Universities of Jordan suggests that organizations need to constantly engage with their staff to ensure that they learn the proper ways to utilize these new tools that they have no previous access. By staying engaged with the staff, they can decrease the length of time that it will take for these new technologies to be fully implemented as well as ensure success with the implementation of cloud computing. As a result of the quick implementation of cloud computing, staff would be able to utilize tools such as cloud storage and other cloud base applications to increase their work productivity. Implementing cloud computing in Universities would increase their ability to provide their services to a wider range of students, and it will open more opportunities for students that are located online and not on campus.

Cloud Computing Economical Considerations

When implementing cloud computing in an organization, companies would also have to take into consideration the expense of how much getting all of their data systems that they want to update would cost to them. The larger the organization, the more it will cost to change to a cloud-based system. A company would also have to take into consideration the cost of training

that each staff in their company would have to take to get properly trained in the new systems.

The cost of implementing cloud computing in an organization would be overtaken by the

benefits that cloud computing offers. Cloud computing would allow organizations to increase

their productivity by centralizing data and information and making it easier and quicker to

access. The overall cost of maintaining a cloud-based system would be less expensive than

maintaining a physical database that needs to be constantly protected from any physical damage.

Cloud computing would allow organizations to decrease the amount of physical space that they

would need to store their data, documents, and any other types of information. In addition, cloud

computing would aid organizations in better sharing their goals with all of the different levels

and would help them to better utilize their resources and more effectively reach goals.

Policies that Surround Cloud Computing

The main issue with cloud computing is how to ensure that the data that is being stored in

the cloud is being protected properly. Lawmakers around the world have made it clear that they

will not to let companies that provide cloud services do whatever they want with the information

that they are storing. The United Nations have passed policies that suggest companies how to

protect the rights of privacy of their users. In contrast, some research has shown that for many

users, the loss of notice of a government demand for data is a significant reduction rights

(AlSudiari, Vasista, 2012, page 165). Hackers are a problem that cloud services companies face,

and lawmakers have implemented laws such as The Federal Computer Fraud and Abuse Act

(CFAA) which punishes hackers who try to exploit vulnerabilities in an organization to try to

obtain sensitive information about the organization and its users.

Conclusion

The study of several Universities in Jordan has shown that the implementation of cloud computing has been shown to have a positive result within the Universities. The active involvement of the Universities was one of the main variables that made the introduction of cloud computing and cloud services a success. As shown by their research, people do not show positive reactions to changes in their working environment, especially if this change is done at a fast pace. The slow introduction of cloud services and the proper training were crucial for the introduction of cloud computing and cloud services into the Universities. The research showed that proper training of staff and faculty to show them the different ways that the staff could utilize cloud services to improve their working performance as well as decrease the amount of work that they would need to do was crucial for the introduction of cloud services and obtain the approvement of the staff and faculty. Cloud computing can improve many aspects of organizations, especially ones that focus on education. Universities are able to utilize cloud computing as a way to centralize the data and different archives of all of their different department and as a result, make that information a lot more accessible to all of the different staff. The amount of time that will take to find information will significantly decrease in comparison to using physical archives. Having cloud computing would also make it easier for students to access information that the Universities offer to their students. The utilization of cloud computing and cloud services as stated before would allow universities to broaden their horizon in the online sector of education. Giving access to more information for students to use thanks to cloud archives will make universities more appealing to students who are not able to attend a physical school due to different factors. The move from physical storage to cloud storage would be a very slow and costly process; especially for bigger organizations, but in the

long run cloud computing will be a lot more cost-effective than maintaining physical data and
archives.

Economic Understanding

Cloud computing will affect the economy in many different ways. As a result of cloud
computing, different companies will be able to move their operations to the online sector and not
have to depend on as many physical resources as before. As stated by Amronab, Ibrahima,
Chuprat (2017), cloud computing technology is regarded as a highly useful application for
organization due to advantages such as long-term cost-saving, easy access of data at any given
time and economically. Companies can utilize cloud computing and cloud services to implement
better communications between their different levels and as a result decrease costs by
maintaining a better focus on the goals of the company. Cloud computing allows companies to
centralize the data and information and make it easier for their employees to access that
information and decrease the number of resources that they would need to utilize in order to
access physical information. As a result of the increased performance of companies due to them
implementing cloud computing and cloud services, this implementation will make them more
competitive against their competitors. The implementation of cloud computing will allow
companies to decrease that physical space that they require to operate and function, this move
would also decrease the amount of profit that they will have to use to maintain those physical
spaces Witnessing the competitive advantage that clouds computing offers, the economic sector
will start implementing more the use of cloud computing and cloud services in their
organizations on different levels because of the increase benefits that cloud computing and cloud
services can offer.

Laws/policies

In the political sector cloud computing and cloud services have become very important topics. The focus of lawmakers to offer different parameters that cloud services companies have to follow shows how important cloud computing has become. Policies focus on the privacy of the users that utilize cloud service companies and have stated that privacy is a human right and companies should focus on protecting the privacy of their users. One of the main concerns of cloud computing is how secure cloud computing and cloud services are against malware and cyber-attacks. Policies such as The federal Computer Fraud and Abuse Act condemn users with judicial consequences if they are discovered of conducting cyberattacks against cloud services companies as well as any hacking for malicious intent. The world of cloud computing and cloud services changes every day, lawmakers have made it very clear that they are not going to let cloud computing and cloud services companies do whatever they want with the information of their users. Laws are being passed every day to prevent cloud services companies to profit from selling the information of their users. Laws makers need to make sure that cloud companies are properly protecting the information that they are storing against any entity that wishes to obtain their information through malicious means by giving companies standards that they would need to uphold, especially for companies that are being utilized to store government information and data.

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