National University of Computer and Emerging Sciences, Lahore Campus

SS153

Course:	Technical and Business Writing	Course Code:	~~SS 108~~
Program:	BS (Computer Science)	Semester:	Fall 2020
Duration:	90 Minutes	Total Marks:	25
Paper Date:	23-November-2020	Weight:	10%
Section:	ALL	Roll No.:	[redacted]
Exam:	Sessional II	Section	

Instruction/Notes: *All questions to be attempted on the answer sheet.*

Q1. **Read the case study identify the following: (Support your answer with a valid reason for each point).** [10]

a. The problem
b. Type of report to be written
c. Data sources (both categories)
d. Audience needs (enlist)

Case Study: Prof. Davies is interested in studying how technology is transforming the higher education and learning. Recently, he formed a two member team of senior students to work on a project to examine how and why automated content analysis could be used to assess essays written by university students. For the purpose, one hundred and fifty sample essays of freshmen students were collected. The texts were already hand scored by the teachers. These texts were autoscored using the Natural Language Processing software and statistical tests were used to analyze the relationships between the teacher score and the automated score. A group of 25 teachers were asked to fill in a questionnaire about the issue. Recently published articles and books were used to gather information on recent development in the area. Prof. Davies wants his students to present this data analysis to him, which he later, would be presenting to the university authorities to let him develop automation in marking of students' texts. He is also concerned about the costs that would be involved in purchasing the necessary equipment, and about the university's in-house policies on research grants.

Q2.

a. **Writing 'Literature Review', is an integral component of a research project. Write a paragraph, as a part of Literature Review. Make use of the two articles, given below. *Your write-up must have the elements of Argument and Voice.***
b. **Give two types of references, i.e. In-text Citation and entry for Reference List. Document by using IEEE Style.**

[5]

	Article Info.	*Text from the article*
1.	Name of the Article: How AI Fits into Your Data Science Team Authors: BY ERIK BRYNJOLFSSON AND ANDREW MCAFEE Publication Date: JULY 2020 Harvard Business Review	The biggest advances in Artificial Intelligence have been in two broad areas: perception and cognition. In the former category some of the most practical advances have been made in relation to speech. Voice recognition is still far from perfect, but millions of people are now using it — think Siri, Alexa, and Google Assistant. The text you are now reading was originally dictated to a computer and transcribed with sufficient accuracy to make it faster than typing. A study by the Stanford computer scientist James Landay and colleagues found that speech recognition is now about three times as fast, on average, as typing on a cell phone.

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		Image recognition, too, has improved dramatically. The error rate for recognizing images from a large database called ImageNet, with several million photographs of common, obscure, or downright weird images, fell from higher than 30% in 2010 to about 4% in 2016 for the best systems. The error rate, once 8.5%, has dropped to 4.9%. The speed of improvement has accelerated rapidly in recent years as a new approach, based on very large or "deep" neural nets, was adopted.
2.	Name of the Article: Artificial Intelligence in Service Authors: Ming-Hui Huang and Roland T. Rust Publication Date: 2018 Journal of Service Research Vol. 21(2) 155-172	The strategic management, economic, scientific, and practitioner literatures focus more on the impact of AI on human labor and jobs, such as the use of deep learning for more accurate skin cancer detection than dermatologists, the augmentation effects of AI on knowledge workers, digital technologies as the driving force of work and life, the growth of low-skill service jobs in the U.S. labor market due to automation, and AI-enabled workplace redefinition.

Q3. Write an Abstract for a Formal Report, making use of the details given from the research article. [10]

Cloud Computing Adoption at Higher Education Institutions in Developing Countries: A Qualitative

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INTRODUCTION

Cloud computing is a new paradigm, which provides applications and services that can be accessed through the internet with the ability to share, managing and storing data, which is physically hosted on remote servers instead of using in-house resources or personal machines [1]. Cloud computing provides advances in technology, such as high processing speed, distributed and grid computing availability, and high storage capacity. In addition, through its use, the common problems of limited computational power and limited physical data storage can be ameliorated [2]. This synthesis integrates hardware, software, networks, and storage options to deliver shared computing solutions in which applications and other services would be provided over the Internet [3].

Cloud computing has four deployment models: public, private, community, and hybrid. According to Chou [4], the public cloud is considered to be the most popular model in cloud computing. Service providers such as Google, Amazon, and IBM offer inexpensive or even free Cloud Manuscript received October 24, 2016; revised December 14, 2016. The authors are with the Coventry University, Priory St, Coventry CV1 5FB, United Kingdom. computing services to the public [5]. However, despite the low cost and broad availability of public cloud services, it is widely believed that this cloud model has less security protection compared with other models [2], [4]-[7]. In addition, the shared resources pool in public cloud computing model has physical capacity limitations as well as low
processing performance unless the customer agrees to pay more for a premium edition [8].

METHODOLOGICAL APPROACH

This study requires in-depth analysis to understand the current and expected future situation. Therefore, the researcher will endeavor to adopt a qualitative approach, because this will provide a better understanding of the situation in real life, as well as investigate the main factors affecting the adoption of cloud computing. The data collection in this research comes from semi-structured interviews with professors from the Jordanian universities as well as experts in cloud computing technology. The analysis process of collected data has been conducted using Computer Assisted Qualitative Data Analysis (CAQDA). Accordingly, this research employed Nvivo software, which is considered to be one of the most useful software tools for qualitative data analysis. Using Nvivo software enables the researcher to code the

collected data as well as to link and create relationships between codes [26].

FINDINGS

A. Security and Privacy

The findings show that security and privacy concerns are considered to be the most important issue affecting the adoption of cloud computing at higher education institutions, as one of the professors (P2) in management information systems explained: "Privacy is the main concern in using cloud computing. A considerable amount of publications agreed that privacy and security are the main issues in cloud computing and we cannot ignore this fact".

B. Cost effectiveness

Cost benefits of cloud computing is a significant factor in this study. All participants agreed that the primary benefit of introducing cloud computing is the cost effectiveness of this technology. "The Main feature of cloud computing technology, which makes it worthwhile to use is that there is no need to spend upfront costs that are usually supposed to be a heavy investment. For example, in the last five years, our university has initiated three new buildings, and each building costs the university around 90,000$ for IT infrastructure. If we adopted cloud computing instead, I believe this may avoid this waste in the university budget" (P5). As a result, the cost-effectiveness of cloud computing is a positive enabler to the addition of this technology in higher educational institutions in developing countries.

C. Compatibility

According to the findings from the interviews, the compatibility of cloud computing with current technology is an important factor in cloud technology adoption. The compatibility feature in cloud computing application could be one of the most important enablers of cloud computing at universities. Accordingly, cloud computing compatibility with any device as well as the high ability of integration with in-house technology is one of the most important enablers of cloud computing technology.

D. Easy to Use

The finding of this study showed that stakeholders in universities who took part in this study consider this factor as an enabler of cloud computing adoption. The simplicity of implementing and using cloud computing makes this technology adoption one of the best options for universities in developing countries, as one of the IT managers (TE8) argued that: "In most cases, the adoption of cloud computing technology is not complicated, except in very rare scenarios when the migration of cloud with in-house technology has a major difference in platforms. Therefore, this simplicity motivated us to accelerate the cloud adoption decision"

To summarise, it is clear that cloud computing technology has the ability to increase the sharing knowledge level among students. Therefore, this factor is considered as an enabler of cloud computing technology adoption at higher education institutions in developing countries.

CONCLUSION

This paper investigates the main factors that affect the adoption of cloud computing at universities in developing countries from both academic and technical perspectives. Semi-structured interviews were conducted with participants including professors in IT and technical experts in IT. Since this study employed an interpretive approach using qualitative methodology, all interviews were recorded after gaining the ethical approval from participants. In addition, the researchers have applied the Nvivo program for transcribing, coding, and finally generating the study's conceptual framework.

The finding suggests that the adoption of cloud computing at educational institutions in developing countries is strongly recommended by academic experts as well as technical professionals. The cloud computing adoption is supported by several enablers such as cost effectiveness, ease of use, improving the level of sharing knowledge, compatibility with devices and software, and geographical decentralization ability to use cloud applications. However, some concerns have arisen as barriers for adopting this technology, such as security and privacy, awareness of top management about this technology's benefits and limitations, compatibility of cloud with in-house technology in case of migration, and resistance to using new technology.

Further research on the adoption of cloud computing may focus on developing a framework for cloud computing adoption at universities in developing countries. Though cloud computing is a new technology, especially in developing nations, further studies in this domain would help academic institutions to understand the benefits, weaknesses, and challenges of adopting this technology.

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