IT

by Xxx Xxx

IT Strategy

[Name of the Professor]

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Contents

Task A

IT Strategy and Significance

An information technology (IT) strategy plan is actually a formally structured and organised document that outlines and highlights the organisation's comprehensive technology-centric business management practices and activities. It acts to be a road map for making and structuring the IT associated decisions where information technology is prioritised, structured and implemented with reference to the organised and formally structured plan of information technology (IT strategy). The IT strategy helps and enables the organisation in the formulation and structuring of the organisation's overall IT strategy (El Yamami et al., 2019). IT strategies are business centric and focuses on the prosperity of the company, which is referred to as the road map for the implementation of those structured and formulated strategies into actual actions. The specified strategy of information technology focuses on the areas and functions where IT may add values to the businesses and associated operations where it is possible and carries an opportunity to maintain the competitive advantage by enhancing the technological capabilities and effectiveness.

The effectiveness of the IT strategy requires to be a collaboration with the businesses and businesses related to filling the technological requirements. It is a kind of written document and balanced card of scores where strategies are mapped to codify the organisation's IT strategy (Putro et al., 2020). These strategies are actually structured while considering the external environment. The strategies got impacted due to the new organisational circumstances and external predictors, including market and industry conditions, corporate targets and objectives, financial restrictions and other related core competencies (Iyamu and Batyashe, 2020). The needs of users and customers should accordingly address and catered to in the IT strategic plan and

related documentation. Technology strategies or an IT technology strategy plan are other names for IT strategies. IT strategies should be built to be flexible as well. Because of the pandemic, some firms' IT plans had to adjust in 2020.

Importance and Comparative Analysis

In a recent span of time, an IT strategy has become a vital and significant component of a company's leadership. The increased beneficial relevance reflects the emergence of technology as a vital constituent of company success. As businesses focus on digital transformation, the value of an IT strategy has become even more. Technology is critical and essential for developing new business models, goods, and services, as well as improving customer service and experience, increasing sales, empowering employees and raising productivity, and facilitating connections with vendors and other business partners (Prayitno, 2019). As a result, firms must progress and advance with a technology strategy to achieve business goals while competing against other organisations with similar goals to achieve sustainable competitive advantage within the uncertain business market. Some businesses, particularly companies and other enterprises whose product is dependent and majorly rely on technological solutions, may elect to relinquish and forgo a separate IT strategy. Despite the requirement, these companies might incorporate IT strategies into their overall business plans to produce a coherent document and associated required plans.

Traditional Approach vs Active Approach to IT Strategy

The IT strategy team, whether affected by internal or external predictors and factors, spends 12 to 24 weeks interviewing and evaluating business executives and acquiring knowledge of the business, the organisation, and its capabilities in the traditional method of IT strategy (Rijati et al., 2017). The team then collaborates with IT governance to create a three- to five-year

visualisation of the vision and mission for the IT environment for effective business practices. The operational group then creates a distinct and different number of project lists that will help and prosper the firm to realise and align its goals and objectives. Finally, the objectives and structured plan of IT strategy are outlined in a "roadmap" and handed over to the concerned departments, after which the team parts and splits into effective pairs or sub-groups to align business activities (Juwita and Arifin, 2017). After a few years, the conventional and traditional process generates a new vision with a new set of goals and activities, most likely given by a separate team to different concerned leaders for the alignment of IT strategies with the business activities.

Whereas incorporating the agile and present-day methods for IT strategy (Agile Strategic Plan), the team also determines and governs the foundations, baseline and develops a three-year strategy and roadmap of the required strategies; however, after the foundations and basics are completed, the team embraces and conducts meetings with the gap of quarters (Puron-Cid, 2017). It is done and incorporated in the evaluation process to review progress, technological changes and industry trends to an effective roadmap that will be adjusted accordingly. Consequently, the final and last stage of the program is not predefined. The strategy provides a general and nom-specified direction, but it is not the final target (Sanaei and Sobhani, 2018). This method provides a new course correction and evaluation after every semi-annual period, as well as an actionable and doable transcription which is provided by a consistent team familiar with the business and required IT strategy. Moreover, using a consistent and reliable team can increase the potential for continual and sustained collaboration on technology trends and patterns (Gërvalla et al., 2018). If benefits related problem arises, the cost to maintain a strategic and agile IT model or framework can be comparable to traditional methods. Furthermore, hiring the

appropriate human capital and an established staff intensify the probability of continuous and sustained collaboration on technological developments and advancements within the business environment of companies.

Task B

Executive Summary

The IT Infrastructure Library (ITIL) is a model for providing high-grade IT services and related managements which are actually structured according to the requirements and prerequisites of business operations. ITIL was designed and well-structured with presentiment and foresight to conquer the dealings of the UK government's communally emergent reliance and dependability on advanced information technology. The IT Infrastructure Library (ITIL) is an assortment of documents and data that define a framework and model for bringing IT services into importance. There are numerous requirements and prerequisites for the implementation and execution of IT strategy and ITIL approach that is preferred to monitor the business operations appropriately. Top of all, it delivers direction while constructing the strategic plans and strategies, which is the most substantial and essential for the company. On a universal basis, the bound with which occurred modern innovations is impacting nearly every business and associated operations. There are several challenges and constraints that happened within the organisation which occurred due to the absence of IT strategy and ITIL selected approaches. The Pareto chart has been incorporated to evaluate the top problems and challenges occurred in an organisation. It is significantly obligatory to conduct a survey of organisations that have incorporated ITIL in the future to counter the findings of studied issues.

Introduction

The IT Infrastructure Library (ITIL) is a framework and model for delivering high-quality IT service managements which are actually aligned with the business operations. The Office of Government Commerce (OGC), formerly the Government's Central Computer and Telecommunications Agency (CCTA), presented and issued the first ITIL components in 1989. The ITIL was first developed and released by the British government's Central Computer and Telecommunications Agency (CCTA) in the 1980s, and it consisted of more than 30 books that codified best practices in information technology gathered from a variety of sources (including vendors' best practises) around the world. ITIL was designed with premonition and foresight to handle and deal with the UK government's collectively growing reliance on information technology. The IT Infrastructure Library (ITIL) is a collection of documents that describe a framework and model for delivering IT services. ITIL has endured and undergone numerous changes over the years, and now, it contains the five dimensions that address and report different procedures and phases of the IT service lifecycle. ITIL is a systematic method of IT service management that may help organisations control associated potential risks, improve customer satisfaction, and save related costs. A Pareto chart is used to analyse the ITIL benefits and associated challenges.

Requirements

There are several requirements for the implementation of IT strategy and ITIL approach that is chosen to follow the business operations appropriately. Here are some compelling reasons to employ the ITIL methodology in your company. It helps in improving the success of project delivery which is essential for the company's prosperity and development. It is required of managing the continuous changes in business and technology as the environment is uncertain

and at paced development trend (Wonges et al., 2017). Furthermore, it provides consumers with the most value possible, which are associated with effective and improved resources and capacities (Luftman et al., 2017). It also offers and provides services that are both beneficial and dependable on IT strategy. Processes incorporated should be planned with specific objectives in mind. It further provides consumers with value via service and provided products. It provides integration of services and business initiatives (Yoshikuni and Albertin, 2020). It improves, measures, and monitors the performance of service sources and suppliers. It aids in the management of IT budgets and investments. It also maintains the company's culture, which is integrated with business-centric approaches. Bedside the internal environment advantages, it is required to improve and retain the customers with incorporations of integrated and best service management and associated practices. Top of all, it provides guidance while structuring the strategic plans and strategies, which is the most significant and essential for the company.

Benefits

ITIL will provide assistance to organisations in navigating the Fourth Industrial Revolution, as it is widely known and getting popular. On a worldwide basis, the pace with which occurred modern innovations is impacting nearly every business and associated operations. Emerging technologies in disciplines such as robots, artificial intelligence, nanotechnology, quantum computing, biotechnology, and the internet of things characterise the Fourth Industrial Revolution. ITIL will give a genuine and adaptable framework and model to help businesses navigate the new world of digital transformation by assisting them in aligning their people, digital, and physical resources to compete in today's complicated environment. With the introduction of ITIL, the scope of ITIL has expanded significantly, with a focus on the business and technology worlds, how they operate today, and how they might improve.

Challenges

It was found by the Conference of Business Intelligence (CBI, 2018) that there are several challenges that occurred within the organisation which occurred due to the lacking of IT strategy and ITIL chosen approaches. The Pareto chart (figure 1) shows that the most common challenges are: resistance to change (27%), lack of top management support (17%), lack of ITIL training for IT staff (10%), different priorities between processes (8%), no integration with current processes (8%), and inappropriate management tool (8%). (6 per cent). The problem of "resistance to change" is significant and must be taken into account by the organisation while implementing ITIL (Basheer et al., 2019). This is due to the fact that the team has varying levels of expertise and approaches to IT; some employees desire to develop and be more process focused, while others are resistant to change. ITIL also causes organisational change, causing departments, teams, and employees to defend the current state of affairs. The problem of "lack of top management support" might lead to ITIL implementation failure. We can't accomplish standalone targets with ITIL without management assistance; therefore, no project can thrive without it (Deci Irmayani et al., 2020). However, these advantages will be few and few between. Management participation is basically a matter of IT governance since it encompasses leadership, organisational structures, and IT governance.

During the ITIL adoption, the problem of "lack of ITIL training for IT employees" becomes critical (Gallegos-Baeza et al., 2021). Agents find it difficult to follow the process effectively without appropriate training, which raises the possibility of discrepancies in the implementation of new procedures. The difficulty "Different priority amongst processes" is significant since ITIL is made up of around twenty processes, one of which we will begin with. The firm may then prioritise the procedures connected with IT services once it has identified the

most critical requirements. The difficulty of "no integration with present processes" may result in a failed implementation. IT services management uses a process-oriented approach; however, if present procedures are rigid and unable to be harmonised, performance will be limited. The problem "Inappropriate management tool" is significant because a good management tool that supports ITIL processes makes these processes easier to develop and operate successfully.

Figure 1

Challenge	Citation occurrence	Citation percentage	Cumulative
Resistance to change	14	27%	27%
Lack of top management Support	9	17%	44%
Lack of training on ITIL for IT staff	5	10%	54%
Different priority between Processes	4	8%	62%
No integration with the current process	4	8%	69%
Inappropriate management Tool	3	6%	75%
Clear measurement target	3	6%	81%
Not assigning process Owners	3	6%	87%

Conclusion

The analysis provides the study of work that addressed and evaluated the problems of ITIL implementation and associated approaches, using a Pareto chart to categorise them in accordance with the cited work of different numbers of researchers (Park et al., 2020). Consequently, the most frequently mentioned problems were "resistance to change, lack of top management support", "lack of ITIL related training for its personnel", and "different priority between processes", "inappropriate management tool", and "no interaction with present procedures." It is significantly required to conduct a survey of organisations that have used ITIL in the future to confirm or counter the findings of these issues.

Task C

The Role of Artificial Intelligence in Achieving the Sustainable Development Goals

According to our evaluation of relevant data, Artificial Intelligence has the potential to enable 79% across the SDGs, mostly through technical advancements that allow surpassing some current and potential restrictions (Haenlein and Kaplan, 2019). However, the advanced development of Artificial Intelligence may have a detrimental influence on 59 objectives (35 percent across all). We separated and divided the categories into three further sub-categories for the study, which is based on the three mainstays of sustainable development which are Society, Economy, and Environment. This classification permits to contribute and provide a broader picture of artificial intelligence's overall influence over the sustainability (Goralski, M.A. and Tan, 2020). The outcomes and results of assessing the relevance and reliability of data given in each reference is in measuring an interrelated and interlinked association to the fraction of objectives evaluated for knowing the impact of artificial intelligence on society. Artificial Intelligence-based technologies and processes have the probable potential to help 82% of the predictors which comes in the Society category.

Artificial intelligence can also aid and support in the integration and linkage of variable renewables by allowing and incorporating smart networks to partially contest with the energy demand to periods when the sun shines and the wind blows. Artificial Intelligence can have a negative influence on fewer objectives and systems, integrated in the Society group (31%, 38%) than it can have a favourable impact on other objectives and goals. However, these must be taken into account (Kuzior et al., 2019). Many of these have to do with how Artificial Intelligence enables the technology advancements which may be applied in nations with fluctuating cultural standards and affluence. Artificial Intelligence (AI) might help for the achievement of the goals

and missions by providing the assistance in delivery of food, health, water, and energy to the people (Pedro et al., 2019). It can also help to support the low-carbon systems by providing the assistance in the expansion of economies and cities that incorporate optimal utilisation of scarce resources.

Advanced AI technologies, research, and product creation might require broader knowledge and vast computational resources which are available through big computer centres. These facilities incorporate and utilise a lot of energy which have a big carbon impact on the society. According to some projections (Vaishya et al., 2020), the total power consumption for information and communications technologies (ICTs) might reach 20% of global electricity demand by 2030, up from 1% now. As a consequence, ICT technology's green growth is critical and crucial. Additional effective cooling systems for data centres, increased energy efficiency, and the use of renewable energy in ICTs will all help and assist to limit and restrict the expansion of power consumption and utilization (Pirouz et al., 2020). Human expertise must be embedded and implanted in the creation of Artificial Intelligence models and associated frameworks, in addition to more efficient and renewable-energy-based data centres.

Although the majority of the identified and discovered associations in the Economy category are favourable, trade-offs must be measured and reflected. Artificial Intelligence can have a disadvantageous impact on social media practices by implying users' substantial. This might lead to political opposition and a decline in social cohesiveness (Bag et al., 2021). Artificial Intelligence, on the other hand, may help and assist expose foundations of variation and struggle, and therefore potentially diminish discriminations, by conducting reproductions to analyse how virtual communities would respond to changes. However, when utilising Artificial Intelligence to assess and forecast human behaviour, there is a chance and potential which is

underlying danger of bias in the data. A variety of biased problems have been detected in the automated targeting of online job advertisements using AI. To minimise such biases, Dalenberg's work emphasises the significance of altering the data preparation process and specifically amending the AI-based algorithms recycled for selection procedures (Duan et al., 2019).

A Brief History of Artificial Intelligence: On the Past, Present, and Future of Artificial Intelligence

The Past

The origins of Artificial Intelligence may most likely to be originated to the 1940s, especially 1942, when American Science Fiction writer Isaac Asimov released and issued his short tale named as Runaround (Lu, 2019). The narrative of Runaround is a science fiction film about a robot which was created by Gregory Powell and Mike Donavan, rotates and revolves around the Three Laws of Robotics: (1) A robot may not hurt or impair a human being or allow a human being to derive towards the harm through inactivity; (2) a robot requisite to obey and follow the human commands unless such orders contradict and in opposition with the First Law; and lastly, (3) a robot must protect and guard its own existence as long as doing so does not violate or contradict with the First or Second Laws of Robotics. These laws were the most significant theories to be existed in the past era as it provides and initiates the importance of artificial intelligence.

Asimov's work and laws got influenced and impressed the generations of scientists in the fields of robotics, artificial intelligence, and computer science, including Marvin Minsky, an American cognitive scientist. The English mathematician Alan Turing worked on imaginary difficulties and created a code breaking computer dubbed The Bombe (Bui et al., 2020). He

developed the code for the British government about the same time, but almost 3,000 miles away with the objective of cracking the developed Enigma code, which was employed by the German army throughout World War II. He released and published one of his key papers with the title, "Computing Machinery and Intelligence", in 1950, in which he defined and outlined how to build intelligent computers and, more importantly, how to assess and evaluate their intelligence (Alimadadi et al., 2020). The Turing Test is still used and incorporated in today's dynamic business environment to determine and evaluate an artificial system's intelligence. For instance, if a person relates and interacts with another human and a machine and is unable to tell the machine apart from the human, the machine is regarded to be intelligent.

The Present

Artificial Intelligence Special Issue of the California Management stated that the preceding explanation demonstrates and provides crystal clear explanation that Artificial Intelligence will become as abundant of a part of daily life as the Internet or social media did previously. Artificial intelligence will have an insightful and a profound influence and impact on not just individual's personal lives, but also on how businesses and associated operation sort choices and interact with their external stakeholders. Artificial Intelligence play a significant and essential part in these components, but the question is not if it will play a role, but rather which role it will play and, more crucially, how Artificial Intelligence systems and humans can coexist and tolerate with each other (Naudé, 2020). It is important to understand the technological advancements to proactively come up with the intelligence based strategies and plans.

Moreover, previous articles investigate the connection between employers and employees, as well as the influence of AI on the labour market in general. Tambe, Cappelli, and Yakubovich examine how Artificial Intelligence affects the HR function in businesses in their

paper "Artificial Intelligence in Human Resources Management: Challenges and a Path Forward." The study shows that human resource management is actually considered and categorised by a high level of complexity and relatively uncommon but rare occurrences, both of which have the severe repercussions and consequences for both applied candidate and the company (Mei at al., 2020). These qualities and related characteristics make the data collection, machine learning, and decision-making stages of Artificial Intelligence solutions difficult and tough to be categorized and implemented. The authors examine these issues, make recommendations regarding the Artificial Intelligence or humans lead, and thoroughly discuss about how employees will respond and counter to various tactics. It is important to assess the potential requirements for the effective measures as the future is of Artificial Intelligence (Vinuesa et al., 2020).

Artificial Intelligence (AI) applications for COVID-19 pandemic

Introduction

The current situation of health sector around the world is deteriorating due to the spread of COVID-19, a global pandemic. The medical sector is looking for innovative methods and procedures to detect and manage the extent of COVID-19's impact in this global health disaster. Artificial intelligence (AI) is one such tool that may swiftly trail and track the transmission and spread of this virus, identify high-risk individuals, and aid in real-time infection management for the betterment (Ahuja at al., 2020). It may also evaluate and estimate impermanence or mortality risk by thoroughly examining and assessing the patients' past data of health. Artificial Intelligence can aid in the battle against this virus by providing population screening, medical assistance, notification, and infection control recommendations. As an evidence-based medical tool, this technology has the potential to enhance the COVID-19 patient's planning, treatment,

and reported outcomes (Laguarta et al., 2020). Artificial Intelligence is used to analyse and elaborate the major symptoms and test outcomes associated with the highest level of accuracy and precision. It also helps to demonstrate that it causes decline in the overall volume of phases and required stages in the procedure, making it more feasible and easy to acquire.

Application

Moreover, the studies have shown a lot of applications of artificial intelligence for the betterment in the world that has worsening due to global pandemic. Following are some of the tested and implantable applications of artificial intelligence in the pandemic situation around the world:

I) With the help of artificial intelligence, doctors can detect the infection at the earliest of time. Early detection and evaluation of bacterial infections and viruses can be determined with the help of artificial intelligence. It helps to swiftly and quickly analyse and evaluate the irregular and abnormal symptoms that have raise the 'red flags' against the human health which is concerning and alarming for the health care departments and authorities. It aids and helps in cost-effective processes for making decisions by allowing and permitting for earlier decision-making. Through obliging and supportive algorithms, it aids and helps in the development of an unusual diagnosis and administration tactic for COVID 19 patients. With the assistance and aid of medical imaging technologies like as computed tomography (CT) and magnetic resonance imaging (MRI) scans of human body parts, artificial intelligence can provide assistance and contribute in the identification of infected patients.

II) Artificial intelligence helps to monitor the test and therapies. Artificial Intelligence may be incorporated to create an intellectual platform for automated viral monitoring and

prediction to deal with COVID-19 virus. A neural network might be created to extract the visual characteristics of this condition, which would help and aid in the correct monitoring and treatment of those who have got affected. It has the prospective potential to offer everyday information on patients as well as strategies and processes for dealing with the COVID-19 widely spread global pandemic.

III) Individual contact tracing: Artificial Intelligence can assist in analysing the virus's degree of infection, finding clusters and "hot spots," and successfully conduct individual contact tracing and monitoring. It can forecast and keep the capabilities to predict the disease's forthcoming progression and likelihood of recurrence.

IV) Case and death forecasting: Using existing evidence and data, social media, and other related media platforms, artificial technology can track and antedate the characteristics of the virus, as well as the associated potential risks of infection and its potential spread. It may also estimate the number of positive cases and deaths that will occur due to the globally spread pandemic. Artificial Intelligence can provide assistance and guidance for the identification of the most vulnerable locations, individuals, and countries so that appropriate precautions may be considered and implemented.

V) Drug and vaccine development: Artificial Intelligence is developed and incorporated to conduct drug research by evaluating and analysing the COVID-19 data. It may be used and incorporated to design and develop medication related delivery systems. This practice is used and implemented to integrate with rapidity for drug testing in real-time, when traditional testing takes a long time, and therefore it supports to substantially speed up this system, which may not be possible for a human to practice. It may aid and help in the finding and detection of effectively efficient medicines for the treatment of COVID-

19 patients. It has evolved into a useful apparatus for developing and evaluating the diagnostic tests and vaccines. Artificial Intelligence supports in the formation of vaccines and therapies at a much faster rate than before, as well as clinical trials during vaccine formation and development.

VI) Reducing healthcare workers' workload: During the COVID-19 epidemic, healthcare staff were overwhelmed by the sudden and huge surge in patient numbers. Artificial Intelligence is being utilised and incorporated to minimise the workload and associated stress of healthcare professionals in this case. It aids and helps in early identification, detection and treatment while implementing and utilizing the advanced digital methods and decision methods, as well as providing the finest training to students and professionals on new disease related to virus of Covid-19. Artificial Intelligence has the ability to affect and evolve the future patient care and handle more probable issues for reducing doctors' burden and stress.

VII) Prevention of the illness: Artificial Intelligence can provide updated knowledge and assistance that is useful in the prevention of this disease with the help and support of real-time data analysis. During the time of crisis, it may be utilised and incorporated to anticipate the likely areas of infection, the virus's inflow, and the demand for beds and healthcare professionals.

Conclusion

Artificial Intelligence (AI) is an emerging and helpful technique for detecting early coronavirus infections and monitoring the health of affected individuals. By establishing effective algorithms, it can greatly enhance treatment uniformity and decision-making. Artificial Intelligence is beneficial not only in the treatment of COVID-19 afflicted patients, but also in the

appropriate monitoring and assessment of their health. It can monitor the COVID-19 outbreak at many scales, including epidemiological, medical, and molecular applications and implementation. It is also beneficial to aid and support the global pandemic research while evaluating and analysing the existing data. Artificial intelligence can aid and help in the formation of effective treatment procedures, precautionary methods, and medication and effectively efficient vaccine formation. It is important to learn the significance of artificial intelligence as the coming era is of total artificially intelligent system.

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