IMPACT OF DIGITALIZATION ON FUTURE AND EXISTING JOBS IN EMIRATES

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ABSTRACT

To achieve its vision of 2021, the UAE government is moving forward with plans to turn all analog services into digital. By 2021, we aspire to be among the best." The goal is to make a living in the United Arab Emirates a little bit more comfortable. With Artificial Intelligence entering people's lives and impacting them as a result of the UAE's rapid technological progress and digitalization, some people will lose their employment in various industries in the next 10 years.

The government's research plan and strategy for preparing students for future professions in the UAE government sector are to revamp the education system in the UAE to adapt to future advancements.

In my research, I'll focus on existing jobs, current employees and their qualifications, and jobs that more qualified and automated jobs will replace. Also, what abilities do staff and students need to get hired, and what changes must employers do to be prepared for the change brought on by the digitalization of occupations in the UAE? This study is aimed at workers in the UAE government sector, as the UAE government is driving digitalization in the country, and many government employees would be affected. What steps will the government take to modernize the existing systems? What is the strategy for ensuring future work opportunities for job seekers?

What programs or professional skills should new students who have already enrolled in universities take in order to be competitive and competent in the job market? What are the top courses that colleges should develop for students who have yet to enroll in institutions?

Will go through which organizations' future changes are not in their best interests and how to keep their business operating while adapting to future changes.

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ÖZET

BAE (Birleşik Arap Emirlikleri) hükümeti, 2021 vizyonuna ulaşmak için tüm analog hizmetleri dijitale çevirme planlarıyla birlikte adım adım ilerliyor. 2021 yılına kadar en iyiler arasında olmayı hedefliyoruz. Amaç, Birleşik Arap Emirlikleri'nde yaşamı daha konforlu hale getirmek. BAE'nin hızlı teknolojik ilerlemesi ve dijitalleşmesi ile Yapay Zeka'nın insanların hayatlarına girip onları etkilemesi sonucu bazı insanlar önümüzdeki 10 yıl içinde çeşitli sektörlerde işlerini kaybedecekler.

Gelecekteki gelişmelere uyum sağlamak için BAE'deki eğitim sistemini yenilemek, hükümetin öğrencileri BAE devlet sektöründeki gelecekteki mesleklere hazırlamaya yönelik araştırma planı ve stratejisidir.

Araştırmamda halihazırdaki işlere, mevcut çalışanlara ve niteliklerine ve daha nitelikli ve otomatik işlerin yerini alacağı işlere odaklanacağım. Ayrıca personel ve öğrencilerin işe alınması için hangi yeteneklere ihtiyacı var ve işverenlerin BAE'deki mesleklerin dijitalleşmesinin getirdiği değişime hazırlıklı olmak için hangi değişiklikleri yapması gerekiyor? Bu çalışma, BAE hükümeti ülkede dijitalleşmeyi teşvik ettiğinden ve birçok devlet çalışanı etkileneceğinden dolayı BAE devlet sektöründeki işçilere yöneliktir. Hükümet mevcut sistemleri modernize etmek için hangi adımları atacak? İş arayanlara gelecekte iş fırsatlarını sağlamaya yönelik strateji nedir?

Halihazırda üniversitelere kaydolmuş yeni öğrenciler, iş piyasasında rekabetçi ve yetkin olmak için hangi programları veya mesleki becerileri almalıdır? Henüz kurumlara kaydolmamış öğrenciler için okulların üstüne çalışması gereken dersler nelerdir?

Hangi kuruluşların gelecekteki değişikliklerinin kendi çıkarlarına uymadığını ve gelecekteki değişikliklere uyum sağlarken işletmelerini nasıl çalışır durumda tutacaklarını inceleyeceğim.

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Omar Ben HAMMOU

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CHAPTER 1

1.PROLOGUE

The planet is being consumed by the One's Zeros. The whole process of creating, maintaining, transmitting, and exchanging data is being digitized and turned into the all-encompassing dialect of PCs. From small organizations and businesses to even government agencies, a broad spectrum of organizations is undergoing "advanced change," transforming digitization into new processes, exercises, and exchanges (Press, 2015).

The representation of data as zeros encourages its age, replication, pressure, and spread (as in Big Data), as well as its study (as in Data Science) and association (as in Data Science) (Like Internet and Web). It also encourages the substitution or extension of physical proximity with virtual or online proximity (such as with the Internet of Things) (Press, 2015).

This chapter will discuss the study's purpose and the present difficulties that the UAE government is dealing with, as well as the research questions.

1.1 Problem Formulation

To revamp the labor of markets, technology is replacing traditional work with new global techniques. Some jobs will be terminated, while others will be created to meet future demands. Several employment will be automated, and many workers will lose their employment as a result. The number of job searchers in the UAE, particularly government personnel, will rise due to this. According to the minister of Foreign affairs Sheikh bin Zayed, during his session at the World Government Summit, more than 80% of all UAE citizens work in the government sector (Zakaria, 2018).

Some of them (UAE nationals) are not working in technological occupations since non-technical jobs will be substituted or automated, such as data input, application processing, reception and customer service, and so on.

According to the same minister of foreign affairs, who spoke at the WGS in Dubai in February 2018, "1.9 million jobs are expected to be substituted in the Emirates as people are required to learn new skills and adapt to cope with innovation." (2018, Zakaria).

Students still believe that they will be able to find employment after graduation, but new future needs demand greater technological abilities and knowledge of future specialties such as artificial intelligence, programming, networking, and robotics. Minister of foreign affairs Sheikh bin Zayed, estimates that 65 percent of youngsters who started elementary school would be unable to find equivalent professions in the present market after they graduate (Zakaria, 2018). The WGS recommendations were to revamp education in the UAE, thus universities and colleges in the UAE must modify the specializations that are being offered to students and be replaced by new specializations that are concerned with future technology. To adapt to the future, students must take more technical courses.

On the last day of the World Government Summit (WGS), minister of foreign affairs again, stated that the Emirates will figure a reason to reconstruct the educational framework and shape a new model of training that will be more in line with future employment needs. Government laws, national systems for advanced education, and activities for deep-rooted learning will be put in place in order to overcome any barriers that may exist between instruction and the workplace and allow the Emirates to be a supporter of the Fourth Industrial Revolution, according to the plan (Zakaria, 2018).

1.2 Aim of the Study

This research main aim is to gather DATA and information which will help make recommendations to current job seekers and those who would lose their jobs due to automation regarding "the skill sets that they should acquire to be competent and remain in employment." Artificial Intelligence, programming, networking, robotics, and other related talents are examples of such abilities.

Undergraduate students are advised to concentrate on future requirements and equip themselves with other languages, abilities, or anything else that may be required

to stay on track with the future expectations. For new students who have not yet enrolled in institutions, "what courses or subjects should they pursue" in order to have a high chance of landing a job is a common question.

What should businesses do to prepare for the future in terms of new technology or abilities for staff and educate people on how to utilize the new technology if they are at risk of going out of business as a result of the digitalization of jobs? (for example, if the organization is contracting, they have to know how to use 3D printing).

1.3 Research Questions

The following questions are connected to my research for several organizations (such as Etisalat and MOID in the telecom sector) and were discussed with the HR department for each one.

1. Is there a right plan to retain staff, particularly those of exceptional quality, and invest in and develop them to meet future demands?
2. What is your thoughts on people who do not work in a technical department?
3. What is your recommendation for people who do not have a technical certificate, such as HR, Account Manager, Sales Manager, Processing, Customer Service (Call Center), or any non-technical jobs, to adapt to the future and what will happen to them in your organization?
4. What new prerequisites should job searchers have when applying to work for you?
5. What are the good and negative effects of digitization on your organization?
6. What is your advice for high school students/undergraduates in the UAE when choosing a concentration and learning new technical courses/skills?
7. When will your company be totally digitalized and how are you planning to do it?
8. What is the situation of your organization and what did it plan or do regarding digitalization?.

1.4 Thesis Structure

As a follow-up to the introduction, chapter 2 presents a descriptive assessment of the relevant literature. The current study will focus specifically on the influence of

digitalization on existing and emerging jobs and students. Sustainability will be discussed in detail in Chapter 3, with Dubai as an example. In Chapter 4, it will present some findings that have been derived from the interviews and some of the analysis that was done. The final chapter will include a list of suggestions and recommendations.

CHAPTER 2

2.SUMMARY OF LITERATURE REVIEW

New technology advances that emphasize speed and mobility dramatically impact how people live, work, and connect with one another. They are giving fantastic possibilities to governments, allowing them to substantially change their mind-boggling administrations to become more adaptable, resident-driven, and inventive. Over the previous three years, numerous nations have propelled computerized methodologies, yet meanings of advanced have shifted from being a comprehensive term to organize advances and their applications (for example, mobility, analytics, big data, and cloud) to another method for open administration conveyance to a comprehensive idea of an advanced society. Governments are experimenting more than ever with imaginative, innovation-powered administrative conveyance models, which are beginning to revolutionize the way they work (Masson, 2014).

Advanced technology is not a passing fad; it is a transition that is taking place right now and gaining momentum by the day. Computerized innovations are confusing the very aspects of various business, government, and even people's lives in the Middle East and around the world (Elmasry, 2016).

This chapter will cover the definition and history of digitalization and automation and what to expect from automation, and the benefits of digitalization. Then the chapter will talk about digitalization in the UAE, the positive and bad effects of digitalization, and what the benefits are. Also, it will highlight the present challenges confronting job searchers, current employers, and students regarding jobs that have been or will be replaced in the future, how these concerns can be resolved, and what the best methodology is for doing so. I will give some analysis and WGS results to

support my thesis and a recommendation and appropriate solutions that have been addressed in WGS.

2.1 Definition & History of Digitalization & Automation

In this section, it will define automation, digitalization, and their respective history and briefly discuss the benefits of each.

2.1.1 Definition & History of Automation

Automation can be defined simply as a technology that allows processes and procedures to be completed without the assistance of humans.

Automation uses management systems and knowledge technologies to reduce the need for human labor in the assembly of products and services. Within the context of industry, automation may be viewed as a step beyond mechanization. (Wikipedia.org, 2018)

Automation or automatic control, is the use of various control frameworks for operating hardware, such as apparatus, types in industrial facilities, boilers and heat treating broilers, exchanging in phone systems, regulating and adjusting boats, flying machines, and other applications with little or no human involvement. A few processes have been completely automated (Robinson, 2014).

The phrase computerization, stimulated by the earlier term programmed (originating from robot), was not extensively used before 1947, when General Motors developed the automation unit. It was during this time business was rapidly obtaining input controllers, which were introduced in the 1930s, (Robinson, 2014). (Robinson, 2014).

Automation has been accomplished in diverse ways that combined with mechanical, hydraulic, pneumatic, electrical, and electronic and computers, sometimes combined. Complex systems, like trendy factories, aircraft, and ships, typically employ these coupled strategies (Robinson, 2014).

2.1.2 Definition & History of Digitalization

Digitization has completely transformed the way, shop, finance, travel, learn, regulate, control our healthcare, and enjoy life since the 1950s, with a noticeable boost in the 1990s due to the emergence of the internet. Paper and images are transformed

into computer memory code through digitization technology (ones and zeros). Analog to digital conversion is known as a subset. Instead of just converting any item to digital form, the digital transformation of economic transactions and interpersonal connections are much more fundamental.

For our history, the future environment of the digital world can overshadow some of our traditional methods. Instant messaging, e-mails, doc files, pdfs, digital video, podcasts, and databases will be almost fully digital in the future. Because of their size and complexity, historians will need to develop their own digital sources while also using those created by others, which will necessitate the use of technologies and procedures that aren't now commonplace. To that purpose, we must introduce our graduate students to the various research and teaching tools that are already available to them, such as Zotero, del.icio.us, Google Earth, Google Books, Wikipedia, SIMILE, Scribe, and TokenX. In truth, we must work together as a community to shift the focus of digital historical studies away from the commodity display or "web site" and toward the methodology profession of "doing" digital history through the use of new media technologies in our research and analysis. (digitalhistory.unl.edu, 2009)

Digitalization is the incorporation of digital technology into daily life via the transformation of everything that can be digitized. The actual translation of digitalization provides a clear strategy of progress and a technologically dependent world (IGI-Global.com, 2018).

In this section, digitalization way that revolutionizing business worldwide and industry and challenging the limits of manufacturing, input, and distribution. This has provided amazing chances as the new product, methods, and strategies have evolved, but has conjointly brought hazards, as novel strategies in which of work create new demanding circumstances to present-day employees, college students & job searchers (EESC, 2017).

2.1.3 Globally, what is expecting from Automation?

Automation is the next stage of Digitalization, which means that "every process that has been Digitalized is already being Automated, not vice versa."

When a process is converted from manual to digital and digitalization is applied, it implies that your machine becomes automated by utilizing digital services such as Cloud, IoT, Big-Data, Database Analytical, M2M, Block-Chain, and Smart machines

to work in tandem with humans to advance automation while synchronizing with standardization. Human performance is now equivalent to or better than that of robots in all job sectors thanks to robotics and artificial intelligence advances. Automation can help businesses enhance performance, quality, speed and reduce or eliminate errors while also saving labor costs and developing new capabilities.

In some tasks, productivity and outcomes are more valuable than human qualities.

Automation has the potential to promote productivity development, which might help offset the effect of a decreasing working-age population in a number of countries. According to Mckinsey, automation may boost global productivity growth by zero.8% to 1.4 percent every year. According to a Mckinsey study of over two thousand labor activities over 800 professions, about 0.5 of the tasks for which people are paid close to $16 trillion in earnings may be machine-controlled by modifying already accessible technologies. Whereas less than 5% of all vocations are totally machine-controlled and depend on indisputable technologies, around 60% of all occupations have at least 30% of component activities that may be machine-controlled. There are more vocations that can change than will be machine-controlled away (Mckinsey, 2017).

2.2 How automation technology affecting on our life

2.2.1 Impact on the individual

Almost all automated production installations, especially robotics installations, entail the replacement of human effort with automated technology. As a result, one of the primary consequences of automation in manufacturing operations is the transfer of human workers from its traditional employment site. The long-term implications of automation on jobs and the jobless rate are debatable at this point. The majority of research conducted in this area has been problematic and unsatisfactory. Employees have definitely lost their employment of robotic, but population growth and increased customer needs for automation products have more than made up for these losses in employment. According to labor groups and many corporations, employees who have been replaced by automation should be retrained for other professions, with the possibility of enhancing their levels of skill in the meantime. While this argument holds water as long as the firm and the economy as a whole are booming at a rate that

allows for the creation of new roles to compensate for the loss of jobs due to automation, it falls short.

Because robot implementations entail the direct replacement of machines for people, often at a proportion of two to three humans per robot, many labor experts are concerned about the influence industrial robotics will have on the workforce in the future. A common counter-argument heard in the United States is that robots may enhance efficiency in American manufacturers, making these businesses more successful and preventing employment from being lost to foreign competitors. In recent years, the impact of robotics on labor has been relatively limited, partly because the machines in the United States are tiny compared to the number of human employees. As recently as the early 1990s, less than 100,000 robots were placed in American companies, although the country has a huge number of employees of more than 100 million people, with around 20 million of them employed in manufacturing.

Not only does automation have an impact on the number of employees in companies, but it also has an impact on the sort of labor done. The automated factory is geared toward the use of computer systems and advanced programmed machinery rather than physical labor to complete tasks. Physical labor is being replaced by knowledge-based labor and technological skills, with less focus on human labor. More equipment maintenance, enhanced timing, improvement, computational modeling, and programming skills and operation are all examples of employment that can be found in contemporary manufacturing facilities. Because of this, personnel in automated facilities must be technologically literate in order to fulfill the tasks assigned to them. In addition to professional and semiprofessional employment, this change in focus toward manufacturing automation has an impact on traditionally manual labor occupations.

2.2.2 Impact on Society

In addition to having an effect on employees, robotics has an influence on society as a whole. Productivity is a basic economic problem that is impacted by technological advancements such as automation. Historically, the efficiency of a system is calculated as the proportion of output units to units of labor input in a certain time period. Productivity will grow as a result of an increase in production rate and a decrease in labor content as a result of an appropriately justified automation project.

Products have become more affordable as a result of greater production, which has resulted in increased affluence for society.

Various difficulties surrounding training and education have been emphasized as a result of the increased use of automated processes, robotics, computer systems, and other related technology. As the level of automation has risen, a scarcity of technically educated employees has emerged to effectively implement these technologies. This scarcity has directly impacted the pace at which automated solutions can be launched into the market. Because of a lack of qualified employees in the field of automation technologies, vocational and technical training is needed to build the necessary workforce competencies. The educational system, on the other hand, requires teachers who are technically competent in order to teach these courses, and the laboratory equipment accessible in schools does not necessarily match the cutting-edge technology that is commonly employed in industries. (britannica.com, 2019)

2.2.3 Advantages and Disadvantages of Automation

Higher production rates and accuracy, more effective material utilization, worker safety, improved product quality, working workweeks, and progressively smaller lead times in the industry are only a few of the advantages of automation. The benefits of increased production and productivity have long been regarded as two of the most convincing arguments for automation. Although the claims that human artistry results in superior quality, robotic technologies typically produce products with lower unpredictability levels than human workers., leading to enhanced management and consistency in the end product's quality—in addition, improved process control leads to more efficient resource utilization, resulting in less waste.

Employee safety is a major consideration when deciding whether or not to automate a manufacturing process. Automated machines, which shield people from the risks of the production environment of the organization, are becoming more commonplace. An American law was passed in 1970 that aims to protect workers' health and safety by making workplaces safer and ensuring the physical well-being of those who work in them. OSHA has recommended that the use of automation and robotics should be promoted in the workplace.

Another benefit of automation would be that it enables factory workers to work shorter hours each week on average, saving them money. In 1900, it was roughly 70 hours per week on average, according to historical statistics. In the United States, this has gradually been reduced to a typical workweek of roughly 40 hours. Advanced manufacturing technologies have contributed significantly to the reduction in carbon dioxide emissions. Finally, automation has the potential to drastically reduce the time it takes to move a typical manufacturing order through a facility.

The fundamental downside of automation, which is the replacement of workers, has already been covered above. A person who loses his or her job due to automation will nearly always face a period of psychological trauma, regardless of the social benefits of retraining. The employee may potentially be transferred geographically in addition to being displaced from their job. In certain cases, a person may be forced to relocate to obtain a new job.

Aside from the large initial investment necessary to spend in automation (an automated system may cost a lot of money to construct, build, and install), Among the disadvantages of automated equipment are the need for more frequent upkeep and a smaller range of products that may be generated compared to a hand-controlled machine (The most adaptable machinery of all, people, are still more adaptable than even the most terms of technological advancements).

In addition, there is a possibility that technology and automation could eventually dominate humanity rather than serve it. Massive computer data networks may invade humans' privacy, and civilization may be endangered by human mistakes in the administration of technology. Employees also may grow reliant on automated robots for their economic well-being, which is one of the threats.

Putting these dangers aside, automation technology, when applied properly and successfully, has the potential to provide significant benefits for the future. In all types of labor, there is a possibility to free people from repetitive, risky, and unpleasant work. This includes manual labor. There is also the potential for future automation and artificial intelligence to contribute to the development of a rising social and economic environment in which people may enjoy a greater quality of living and a more fulfilling lifestyle.(britannica.com, 2019)

2.3 What are the many benefits of automation

2.3.1 Lower operating costs

Based on the workload, robots are capable of doing the work of three to five humans. Additionally, energy savings may be considerable in automated processes due to decreased heating needs. This is in addition to the financial reductions related to labor savings. Robots automate operations and improve component accuracy, resulting in little material waste for your business due to their use.

2.3.2 Improved worker safety

Workers are relieved of potentially dangerous activities by automated cells. Your workers will be pleased to you for protecting them from the dangers of working in an industrial environment.

2.3.3 Reduced factory lead times

Unlike outsourcing or moving your operation overseas, automation may help you maintain your process in-house, enhance process control, and cut lead times dramatically.

2.3.4 Faster ROI

Automation solutions are designed for specific requirements and objectives, and they pay for themselves fast via reduced operating costs, higher productivity, shorter lead times, and other benefits.

2.3.5 Ability to be more competitive

Automated units help you to improve product quality while reducing turnaround time and cost per item. You will be able to compete more successfully on a global scale as a result of this. Furthermore, because robots are adaptable, you can restructure a cell to exceed the capabilities of your competition.

2.3.6 Increased production output

A robotic has the capacity to operate at a continuous speed, unsupervised, around the clock, seven days a week. This implies that you have the ability to generate more. New products may be brought into the manufacturing process more rapidly, and new product programming can be completed offline without interfering with current operations.

2.3.7 Consistent and improved part production and quality

As opposed to human employees, automated cells are often more consistent in their performance throughout the production process. As a consequence, the quality of the product may be controlled and maintained more reliably.

2.3.8 Smaller environmental footprint

Because automation streamlines equipment and processes, it consumes less energy while lowering scrap and taking up less space. Minimizing your impact on the environment might result in significant financial savings.

2.3.9 Better planning

The consistent manufacturing of robots enables a business to estimate the time and costs of its orders with confidence. Because of this reliability, almost every project may operate with tighter profitability.

2.3.10 Reduce the need for outsourcing

Automated cells are capable of storing high quantities of potential capacity in a small amount of physical space. This enables businesses to manufacture items in-house that were formerly contracted to third-party manufacturers.

2.3.11 Optimal utilization of floor space

Robots are built on small platforms in order to fit into restricted areas. Robots may be installed on a variety of surfaces, including walls, ceilings, rail tracks, and shelves, in addition to the ground.

They can do duties in limited locations, allowing you to save precious floor space on your property.

2.3.12 Easy integration

Efficiency will collaborate with you to design and build a comprehensive system, including equipment, programming, and management. Upon shipment, your cell will have been tested for productivity and will be production-ready, enabling you to begin producing components as soon as it is installed in your shop.

2.3.13 Maximize labor

According to current estimates, the statistic shows that over the next 3 decades, more than 76 million baby boomers will retire, with just 46 million fresh employees available to replace them. This period will see an increase in the need for work on your part, making automation a real and practical option.

2.3.14 Increase productivity and efficiency

- Production is available around the clock, and JIT manufacturing is encouraged.
- More uptime is possible when historical efficiencies are higher than 90 percent.
- Capability for secondary operations such as gauging, cleaning, deburring, and so forth.
- Production line connections in real-time with automated cells and machinery
- Switchover for a large number of components, tools, and programs is quick.
- A flexible multi-operation capacity — Op 10, Op 20, etc.

2.3.15 Increase system versatility

- It is simple to retool and rebuild the system to accommodate new manufacturing plans.
- Robots are adaptable and may be quickly repurposed in a variety of different applications.
- Robots have the potential to quickly switch between a large variety of goods without having to entirely re-engineer manufacturing lines, which is very advantageous.

- •Automatic grippers and vision systems provide rapid changeover between various item sizes and forms throughout the same production cycle.
- •The mixed-flow manufacturing strategy provides more flexibility in responding to swings in demand.
- •Robots have the ability to "learn" new procedures in an instantaneous manner.
- •Switchover time has been minimized (productivity.com, 2018)

2.4 Why automation is vital for the future of business

Increasing business operations automation is no longer a luxury reserved for bigger corporations. Instead, it is quickly becoming a critical and indispensable need for organizations of all kinds to ensure sustained success.

During this section, we will discuss what automation is, what sorts of automation solutions are accessible, the advantages of implementing automation, and why it is so critical for the future of all organizations in general. (Phixflow.com, 2020)

2.5 What is Business Process Automation?

Business Process Automation (BPA), also known as robotic process automation (RPA), is a technology that automates repetitive operations to save time and money. BPA is more concerned with automating a process across a whole business than automating individual jobs inside a company.

2.6 What is Robotic Process Automation?

Automat of mechanical, rule-based, and repeatable human processes via the use of software "robots" is referred to as RPA (Robotic Process Automation).

2.7 What is Intelligent Process Automation?

Artificial Intelligence (AI) is a collection of corporate processing techniques that replicate people's behaviors and, over time, develop to enhance these simulated tasks. (Phixflow.com, 2020)

2.8 The role of business automation in digital transformation

Digital Transformation is a term that corporations have talked about for quite some time now. Many firms are aware of the advantages of digitalization but have struggled to maintain peace in the implementation of solutions. The most significant challenge has always been the high expense of building software tailored to each enterprise's specific needs.

The Covid-19 epidemic of 2020 has prompted an increasing number of firms to pledge to accelerate their digital transformation initiatives. Among the primary drivers of this trend is that firms will need to become more efficient to continue development and, in some cases, even survive.

In order to reduce costs, increase efficiency, and improve customer and staff happiness, firms must use automation. Automating routine procedures, which are generally paper-based, helps company executives guarantee that their digital transformation objectives are reached. But how can they get beyond constraints such as cost and deployment speed, which are now prohibitive?

Fortunately, the growth of Low-Code Application Development platforms, such as PhixFlow, makes it possible to design customized solutions in a fraction of the time and at a fraction of the cost.

In whatever form it takes, automation has several advantages, and with economies reeling as a result of the recent Covid-19 outbreak, it is really a question of survival of the fittest.' Companies that emerge victoriously will have adapted to change, grown more nimble and cost-efficient, and provided higher customer and staff satisfaction levels than their competitors. These issues may be solved by implementing automation systems that are designed utilizing Low-Code development platforms. (Phixflow.com, 2020)

2.9 Generally, how can the automation factor be affected in workplace areas?

As technology advances, the transformative strategy to implement complete automation will take some time, which will be influenced by the elements listed below:

2.9.1 Technical Feasibility

Technology must be created, integrated, and customized into systems that automate certain tasks. Only once robots have achieved the required level of performance within the capabilities required to carry out explicit actions can work preparation begin. While robots will equal or outperform humans in a number of the eighteen competencies in our framework, such as information retrieval, gross motor skills, optimization, and design, others will need significant technical advancement. Advances in language comprehension, in particular, might open a lot of technological automation possibilities. Emotional and social thinking skills will also need to be fine-tuned for a variety of employment tasks. Multiple capacities, such as sensory perception and quality, will be needed at the same time for ordinary job tasks, hence solutions that combine specialized capabilities in context should be established.

2.9.2 Cost of Developing and Deploying Solutions

The financial case for automation is influenced by its cost. It costs money to develop and engineer automation systems. Hardware solutions range from standard computers to highly customized, application-specific hardware for robots with arms and other moving parts that require dexterity. Any task needing sensory perception capabilities necessitates the use of cameras and sensors, whereas quality necessitates the use of wheels or other hardware that allows robots to change directions. When compared to a generic hardware platform, such features raise prices. Even "virtual" solutions based on code require real engineering investments to develop solutions. For preparation, hardware necessitates significant capital outlay, and hence automation, which necessitates high initial costs compared to employees. On the other hand, code solutions often have a negligible added cost, making them less expensive than wages and hence more likely to be implemented sooner. Each hardware and code price decreases over time, resulting in solutions that are competitive with human labor for a growing number of tasks.

2.9.3 Labor Market Dynamics

The quality (for example, talents), quantity, as well as supply, demand, and prices of human labor as a substitute, all have an impact on which occupations will be automated. However, the decision to implement the technology must take into account

the pay costs of cooks, who earn $11 per hour on average in the United States, and the abundance of people ready to work as cooks for that wage. Market dynamics differ by earth science, not only in terms of how wholly diverse and evolving demographics influence the bottom labor supply but also in terms of completely different wage rates. Automation of manufacturing is more likely to be implemented sooner in developed countries with higher salaries, such as North America and Western Europe, than in emerging countries with lower wages. Furthermore, the outcomes of automation will interact with marketplace skills and supply. If middle-income workers, such as clerks and manufacturing workers, are replaced by automation of information collection and processing, as well as certain physical activities, they may find themselves in lower-paying jobs, boosting supply and likely putting downward wage pressure on wages. On the other hand, they may require time to retrain into new high-ability occupations, postponing their return to the proletariat and rapidly reducing labor supply.

2.9.4 Economic Benefits

The advantages of automation often exceed the costs due to increased profitability, increased production and productivity, greater safety, and higher quality, all of which may be included in a strategic plan. For instance, in an oil and gas production plant, the advantages of increasing productivity while paying lower total maintenance costs by automating the room surpass those of cutting human costs inside the room.

Machine-controlled driving of vehicles and trucks would not only reduce driver labor costs, but it would also almost certainly increase safety (the vast majority of accidents are caused by human error) and fuel efficiency.

2.9.5 Regulatory and Social Acceptance

Even if installing automation makes commercial sense, the pace of implementation will be hampered by discursive aspects, including regulative permission and users' response. There are many number reasons why the adoption of technology doesn't happen nightlong. The transition of capital investment towards these technological advances takes a bit of time (in aggregate), as will ever-changing structure procedures and practices to adapt to new technology. Re-configuring offer chains and ecosystems will be effortful, and regulations normally get to alteration.

Government legislation will hinder adoption, and wholly different enterprises adopt innovations at different speeds. Ever-changing the actions that workers conduct furthermore demands concentrated effort, even when they're not actively rejecting. and specifically during the situation of automation, folks might feel uneasy a pair of new worlds wherein machines substitute human connection in some personal life circumstances, love a hospital, or in areas wherever machines area unit anticipated generating life- and death choices, love once driving. (McKinsey, 2017)

2.10 Globally, what is expecting from Digitalization?

Globally, the world is anticipating full digitalization in all domains, including our personal lives, employment, and education, and it will include the entire society. In general, people are terrified of change since digitalization will eliminate jobs while creating millions more.

Individuals need to learn more about the benefits of these changes in order to prepare for the future. Not only will employees, students, and organizations be affected by these changes, but so will the people who live with us; their lives will be made much easier because everything will be smart. Homes, automobiles, and education would all be smart. In general, each field would be beneficial in our lives. This will assist people in starting their own web businesses, working from home, and saving money.

Economically, the global economy will grow and become more stable, reducing government spending on education, construction, transportation, and security. Governments will encourage all firms to join the future since the future will not wait for anybody or any organization, so all organizations must transition to the digitalization path as soon as feasible.

To accomplish full digitalization of life, a strong and effective human factor must collaborate with robotics, machines, and technology itself. Researching artificial intelligence on a regular basis. Creating machines and learning the machine language.

Creating a new specialization in artificial intelligence, machine learning, space science, satellite engineering, programming languages, and technology research in all universities will create a new workforce that understands future requirements, innovations, and manipulating any shortage in society.

2.11 Typically, it is expected from digitalization the below achievements

1-Growth of Productivity.

2-More Competencies.

3-Much Easier Systems.

4-Reinforce Secure

5-Reinforce Information Preservation.

6-Warnings Faster to Avoid any Disaster

7-Create New Spaces for New Future Business.

8-More Competitive.

9-Environmentally Friendly.

10-Online Business.

11-Working Remotely.

12-Preservation Business on a Cloud.

13-Less Employees.

14-Saving Cost and Time.

15-Everyday Learning.

16-Smart Education.

17-Creating New Jobs.

18-Avoiding Errors.

19-Smart Hospitals and Manufactories.

20-More Revenue.

2.12 Digitalization in UAE

This paper will show the positive and bad impacts on society, the economy, public services, existing and future jobs, job seekers and organizations, undergraduate students, and students at the lower levels. In addition, several leadership and management strategies will be demonstrated. But first, it is needed to learn more about the UAE Vision for the Future.

His Highness "A comprehensive long-term plan for the nation's transition to post-development technology," said Sheikh bin Rashid, ruler of Dubai. It was started with His Highness's direction. Sheikh Khalifa, President of the Emirates, The long-term approach will lead to countries' evolving growth by identifying future demands

and concerns, addressing them through long-term impact plans, and effectively capitalizing on new opportunities for overall improvement".

Future prototypes for areas such as care, education, social development, and the environment will be produced as part of the plan. These may serve as the foundation for governmental policymaking.

In addition, the plan focuses on enhancing national human competencies across all important industries, establishing international relationships, and constructing specialized R&D laboratories to examine future problems and possibilities.

Under the new plan, preparing for the long term might become an obligatory component of the operations of presidential departments. The future state of affairs reports on important sectors will be issued, which can function as a benchmark for establishing governmental plans and strategies.

The UAE method for the future is the greatest and latest technique to create a guide for the future via anticipating, assessing, and executing extremely strong-motion plans that boost up growth, remarked Sheikh bin Rashid.

Every government agency would then establish eventualities for the longer future and transform them into developmental programs. These agencies can add groups for certain sectors and examine the variations that have an influence on future trends in economic science, society, and technology on a global and regional level.

The Ministry of Cabinet Affairs and consequently the Future may perform support and consultation and collaboration, boosting activities, initiatives, programs, and policies for various government departments, and observing their success.

The Ministry will also aim to establish a future-focused culture as a government directive, raising awareness and strengthening the UAE's role as a world center for government future planning.

The UAE Strategy for the future can cover the longer term of capital and therefore the youth; the longer term of technology and smart software; the longer term of property, surroundings, and climate change; the longer term of infrastructure and transportation; the longer term of healthcare; the longer term of education; the longer term of property development; the longer term of happiness and positivity; the longer term of energy; the longer term of the economy and business security; the longer term of economic resources; the longer term of the government and government services; the longer term of international relations and politics; the longer term of food and water security; and therefore the way forward for electronic security.

In driving the major pillar, a future-focused thinking process is going to be embraced throughout all government departments. Every part of the public sector would then establish possibilities for the long and transform them into developmental efforts. These authorities may add teams for certain sectors and examine the variations that have an influence on future trends in economic science, society, and technology on a global and regional level.

To push the second pillar of creating national competence, the government might seek to designate a strong structural infrastructure to speculate in national cadres. The principles of predicting the longer future are going to be incorporated – in a very simple way – in class curricula. specialist delegations are going to be deployed to train qualified nationals for future coming up with, and associated material – developed fully for the UAE Government – are going to be disclosed, and consequently, the topics are going to be tutored in national universities.

Ministers may seek to transform their ministries into an image of the ministries of the future as part of the third pillar of identifying strategic priorities for the future and representing the nation as Ambassadors of the Future, reflecting the UAE's pioneering role in future-building.

Through this pillar, the administration also will endeavor to identify the UAE as a global destination for property and consequently the future. This can be intended to be attained by several initiatives and knowledge-exchange platforms (such as the Government Summit), likewise as new initiatives and yearly conferences for the "future councils" of the world. The government also will build strategic connections with future-based forums, platforms, and networks of professionals and universities inside the UAE and internationally (UAE-Cabinet, 2016). (UAE-Cabinet, 2016).

2.13 How Has The United Arab Emirates Leaded in Digital Transformation?

Members of the Gulf Cooperation Council (GCC), such as the Emirates, are diversifying their economies. Digital revolution in many facets of daily life is a big part of that. This was long before Co-VID 19 and worldwide social alienation were the norm.

Emirates Vision 2021 and Emirates Centennial, for starters, are the country's economic strategies. Digitalization and transformation are major topics in both plans. The former focuses on transforming the Emirates into a knowledge-based economy.

This of course would and will encourage innovation, research and development (R&D), and the use of cutting-edge technologies. (thefinetechtimes.com, 2020)

Each of the UAE's seven emirates has noticeable implementations of these. Smart Dubai 2021 is a Dubai initiative. Following the release of its plan, Dubai will aim to be a world-leading metropolis by 2021, according to its website. The statement reads, "In recognition of the nation's golden jubilee, by supporting technological innovations that benefit the city's people, economy, and resources." Many of Dubai's services are already digital, from completing residency applications at different phases to paying traffic tickets, and much can be done with a smartphone.

This has also come into play in the other Emirates. Last year, the government of Abu Dhabi provided more than 1,000 government services via digital platforms and processed more than 8 million transactions. Residents of Abu Dhabi, like those in neighboring Dubai, access many of their services through digital platforms.

Fintech investments have been made in both Dubai and Abu Dhabi. FinTech Hive is the first and biggest fin - tech accelerator in the Middle East, Africa, and South Asia (MEASA), according to its website. It is headquartered at the International Financial Centre of Dubai (DIFC). The fourth annual FinTech Abu Dhabi Festival (FinTech Abu Dhabi) will be held from November 24 to November 26, 2020, according to the Central Bank of the Emirates (CBUAE) and Abu Dhabi Global Market (ADGM), the city's main international financial center.

In relation to digital competitiveness, the Emirates leads the Arab world (12th globally). This is the situation, as per the IMD's World Digital Competitiveness Ranking 2019. Also according to the poll, the Emirates is ranked second in terms of technology, ninth in terms of future preparation, and 35th in terms of knowledge. Other countries with well-developed digitalization, such as South Korea, have indeed been able to utilize technology to their advantage. (thefinetechtimes.com, 2020)

2.13.1 Impact of Digitalization on Society, Economy and Governance in UAE

Currently, the government is striving for a combination with their residents, and this conjunction might be reached by a high quality of services provided safely. To strengthen the confidence of the public, the government should become more digitalized and guarantee that the majority of their population have the proper access and digital abilities to cope & adapt to the future.

People want individualized services which are acknowledged by the governments inside the Globe. Authorities are establishing and strengthening digital channels and so many innovative service models which will be simpler than previously for all the societies (Masson, 2014). (Masson, 2014).

Because of digitization, they can fill the gap between classification and prescription, allowing them to deliver a demand-driven, citizen-centric public utility system. High government performance requires efficiently and cost-effectively deriving value from public services. Transportation, social networks, big data, analytics, and cloud technology are major technology advancements that give a replacement framework for these governments to drive profound change of their services, procedures, and technologies (Masson, 2014). Below (Figure 1: Masson, 2014), are the tangible benefits of digitalization for society, business, and public service providers:

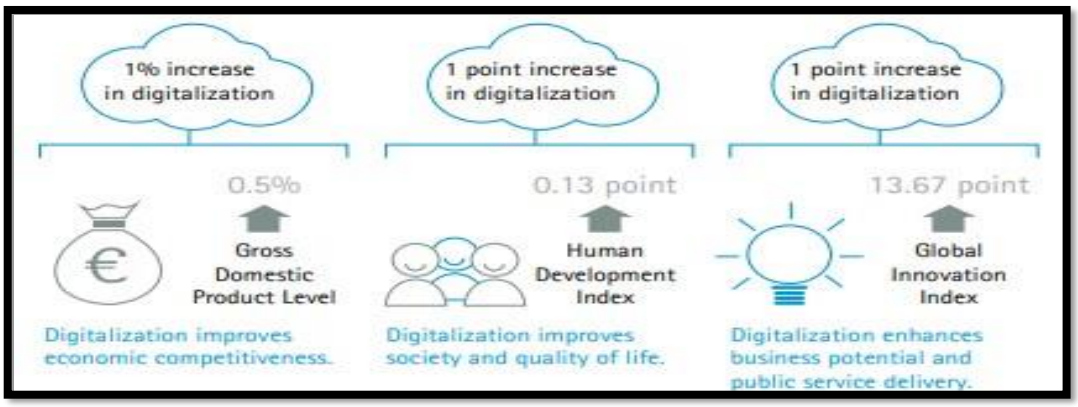


Figure 2.1 Positive Impact of Digitalization on the Economy, Society & Public

• To accomplish the above points, the government must apply below recommendations to accelerate digitization across the region for public and private sector leaders, (Elmasry, 2016).

A Government:

1. Transfer to complete digitalizing economic development rather than concentrating on the digital initiative in e-government systems.
2. Empower national digital organizations.

3. Create legislative framework that supports, and does not restrict, digital innovation.
4. Take advantage of the opportunity of substantial public IT investment to develop home-grown IT players at scale.

B.Business:

1. Take the once-in-a-lifetime opportunity to establish essential digital platforms for the region.
2. Step increase the cooperation among enterprises and digital disrupters in the area.
3. Embrace flexibility via digital to solve the ever-faster workplace environment.

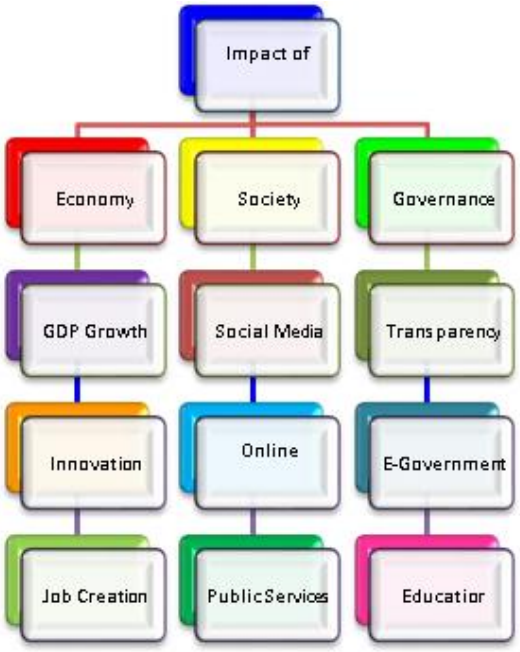
C.Funding:

1. Scale digital VC financing.
2. Increase the visibility of investment options

D.Talent:

1. Create digital curriculum and integrated learning paths from elementary schools through higher education and into work.
2. Consider how to engage, and retain digital talent, and rethink the applicability of nationalization to digital

Following Hierarchy is the methodology for assessing the digitalization socioeconomic effect:



2.14 First Impact: Economy

The McKinsey Middle East Digitization Index is the first attempt to look at the extent and impact of digitization in nine Middle East nations: Bahrain, Egypt, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, and the United Arab Emirates. Despite ambitious government goals to go digital, just 6% of the Arab World residents live under a smart government that is digitized. And Middle Eastern countries lag far behind benchmark countries in terms of business digitization (for the purpose of this study, Norway, Singapore, South Korea, Sweden, and thus the United Kingdom), from the quantity of venture capital (VC) funding available to start-ups to the share of manpower employed in digital careers and industries, (Elmasry, 2016). (Elmasry, 2016).

Some Middle Eastern governments, like those of the United Arab Emirates and Bahrain, have initiated the implementation of fundamental digitalization programs.

The United Arab Emirates government indeed dominates the Middle East in adopting digital technology. Other nations likewise have enormous objectives and have produced significant development. However, in their attempts to foster innovation and push the general public sector’s adoption of digital to future level, they're encountering implementation obstacles such as an insufficient governance framework to reach the essential change (Elmasry, 2016)

According to a McKinsey research, there is a substantial link between a country's Gdp growth and its achievement on the McKinsey digitalization Index: a greater GDP allows governments to spend far more on digital adoption, which boosts a country's success on the index. Furthermore, a high level of digitization contributes to economic growth, resulting in higher GDP. Indeed, a unified digital economy in the Arab World (160 million potential internet users by 2025) might generate up to 3.8 percent of GDP annually, or close to USD 95 billion, according to our estimates. Digital technology may have a positive impact on social inclusion and poverty reduction, as well as improving access to and the quality of education and health care while reducing CO2 emissions (Elmasry, 2016). (Elmasry, 2016).

Below (Figure 2: Elmasry, 2016) is demonstrating the digital contribution in UAE compared with other nations to its GDP and revenues:

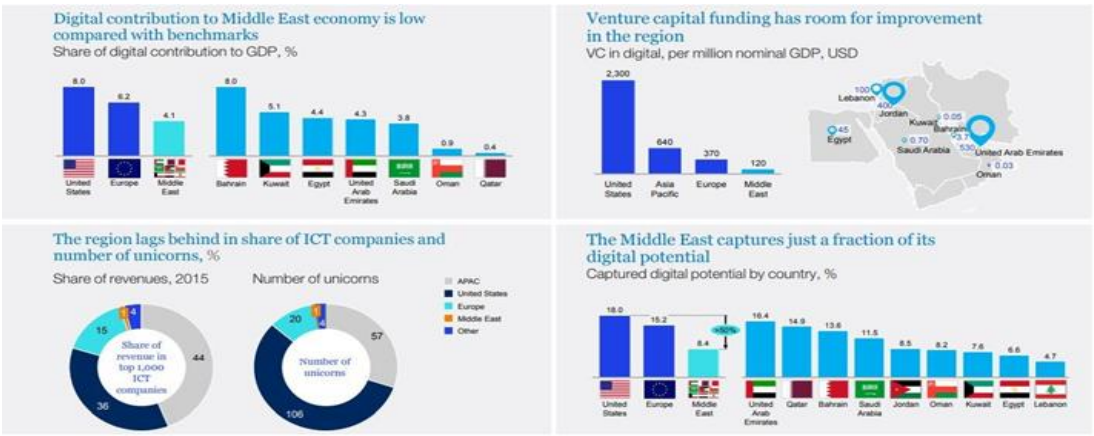


Figure 2.2: Transforming the Region into a leading digital Economy

Middle East digitization index incorporates 24 variables to evaluate consumers, business, government, and ICT supply and innovation across every nation, following (Figure 3: Elmasry, 2016) define the ranking by total digitalization between Demand and Supply measures in UAE compared with other areas. As to McKinsey study, the digital economy might contribute USD 95 billion per year to the MEs' yearly GDP by 2020, (Elmasry, 2016).

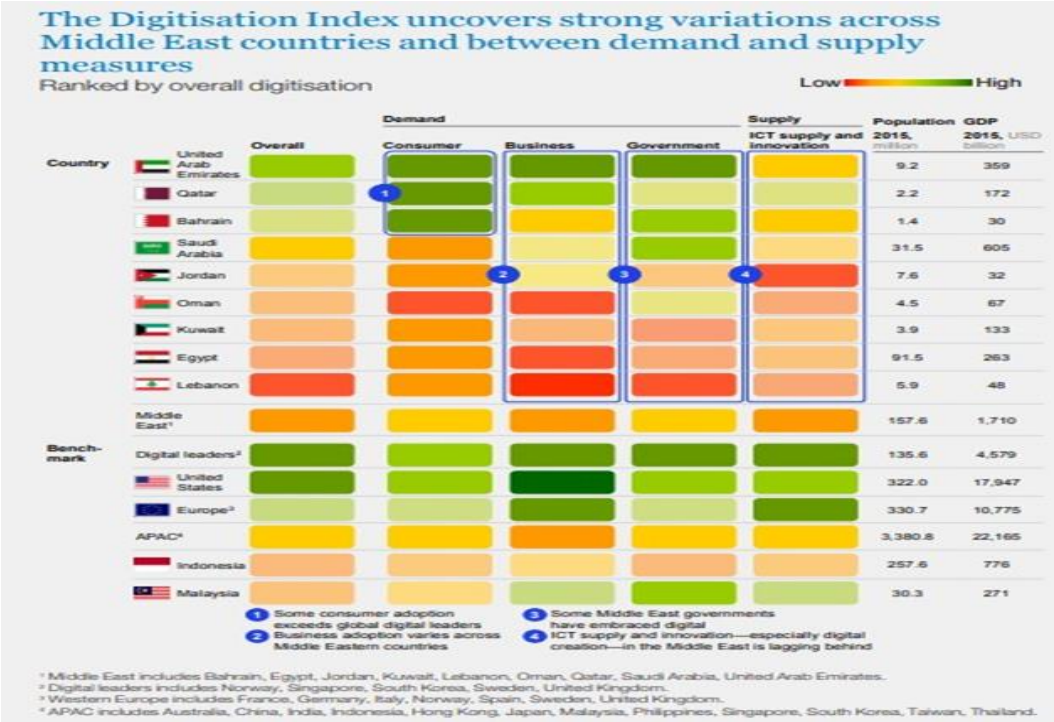


Figure 2.3: Digitalization between Demand &Supply Measures in UAE Comparing with Other Regions

High flow of data is simply one evidence of the quick rate of the digital invention; since the 1960s, every succeeding generation of innovators has been quicker and speedier than the last (Figure 4: Elmasry, 2016). (Figure 4: Elmasry, 2016). At the commencement of the technological age, it required years to build the significant shift from mainframe computers to private computers. In recent times, the development velocity has risen tremendously. Year after year, innovative digital innovations hit the market and have a major influence on business and other individuals within the period of months instead of years. This wave that incorporates recent developments in vast information, the virtual reality, robots, Internet of Things (IoT), drones, and artificial intelligence-provides significant prospects that have already started to disrupt present company structures. Estimates suggest that by 2020, there will be around 2 Zettabytes of data in the Middle East, which is higher than the predicted number of grains of sand filling the whole Arabian Desert at that time.

This huge leap forward in technology brings with it enormous new prospects, but the Middle East's growth rate is too slow to tap into even a small fraction of digital's full potential. Because of fairly weak adoption in most Middle Eastern countries, the

region's overall smartphone adoption rate is low due to the high penetration of smartphones in the United Arab Emirates, Bahrain, and Qatar. Only 20% of Middle Easterners in the bottom two-thirds of the population have smartphones yet. Comparatively, 50% of Americans earning less than USD 30,000 per year (the bottom quartile of income) own a smartphone. Even yet, there is reason to be hopeful: estimates show that the region will catch up to the rest of the globe in smartphone adoption by 2020, with a penetration rate of 60 percent (Elmasry, 2016).

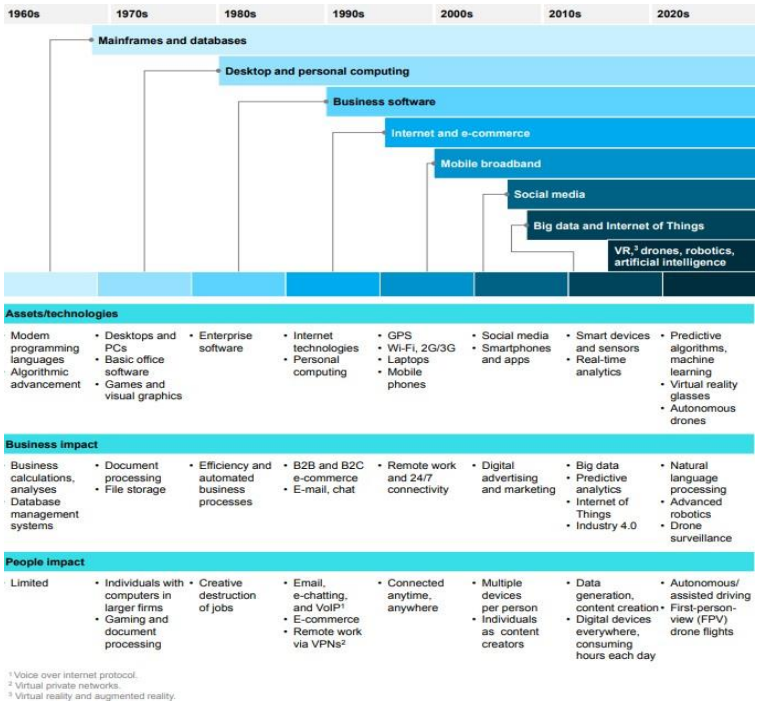


Figure 2.4: Successive Waves of Innovation have shaped the Worldwide Digital Economy

McKinsey analysis reveals several key insights about the state of digitization in the Middle East, (Elmasry, 2016):

2.14.1 Clients are main digital adoption in ME

- As determined by utilizing virtual user acceptance, UAE, Qatar, and Bahrain are the numerous pinnacle foreign locations within the globe, with more than 100 penetration and over 70th social networking implementation, even more, than the United states America. And several nations in Western Europe and APAC. Most

individuals of center East clients are keen to remain current with the unrelenting tempo of the invention within the virtual neighborhood.

- Since of ridiculously low adoption in many Middle Eastern nations, the place's common phone adoption price is underneath even the lowest financial advantage section in the USA.
- The customer need for virtual is a great deal over acceptance by means of the area's agencies and governments virtually across the board.

2.14.2 Middle Eastern businesses' digitalization varies significantly among countries

- The Middle East's degree of digitalization within the business area that performs below the standard regions nonetheless masks an exceptional deal of version amid international locations; in general, the GCC nations have loads of computerized enterprise than Egypt, Jordan, and Lebanon. In reality, as evaluated by business digitalization, UAE achieves the extent of digital frontiers nations, whilst Lebanon, Egypt, Kuwait , and Oman still have numerous Opportunities to realize from the future steps toward digitalization.
- The Middle East scores poor on the firm's scale technology absorption and online marketing expenditure per capita than impact its universal score on virtual adoption inside the location.

2.14.3 Some of Middle East Governments have embraced digital

- Middle Eastern states differ in their digital engagement efforts. The United Arab Emirates and Bahrain are among the leaders, having imposed key digitalization efforts.
- The UAE government currently ranks one in digitalization among Middle Eastern nations and fulfills the digital frontiers nations. Among the Middle Eastern nations investigated, the United Arab Emirates has the very best digital identification-a measure. This depends on several signs relating to obtaining entrance to services, digital signature, and card capabilities. Furthermore, the nation is involved in several digitalization duties, including spreading broadband insurance and establishing a uniform smart-town platform.

- Different overseas areas such as Bahrain, Egypt, Qatar, Oman, and Saudi Arabia likewise have significant ambitions and have attained substantial growth. However, of their attempts to market innovation and push the majority region's acceptance of virtual to future degree, they're encountering implementation challenges comprising of an insufficient governance framework to unite the vision and obtain the alternative.
- Although ambitious authority' objectives for becoming digitalized, most effective 6 percent of the Middle Eastern people live beneath a digitized smart authorities.

Based on the paper, printed by Booz & Company, examined the results of digitalization on economies around the globe. The Booz & Company, a management business on the side to quantify the efficacy of digitization on cross-country socioeconomic development, launched an investigation to produce a digitization index, a measure of nation degree stage of digitization. For this goal, the digitization indicator is evaluated to the degree of the influence of digital techniques on monetary growth, unemployment charge, and social benefits. This investigation encompassed one hundred fifty countries at the west coast Of india for the timeframe of six years from 2006 to 2010. During this study, Countries were categorized in four classes' equal to digitally Restricted, Developing, Transition or Developed, on the premise of digitization operations and impact of digitization to economic development, employment creation and wellbeing of the population. (El-Darwiche, Singh & Koster, 2012), (Aftab, 2015). (Aftab, 2015). These divisions are given below, (Aftab, 2015):

1. Constrained Economies: Those with a digitization rating under 25 have significantly begun to increase affordable connection speeds. Net services remain costly and confined in reach.
2. Emerging Economies: Those with a score around 25 and 29.9 have concluded full-size growth in giving cheap and enormous gain entrance to.
3. Transitional Economies: Those with a digitalization rating around 30 to 39.9 give citizens with ubiquitous, economical, and reasonably reliable services, and consumption is developing at a shockingly faster speed.
4. Advanced Economies: Those with a 40+ score have reached that level of digitalization. Virtual services may assist such countries' knowledge bases.

- Based upon the measurements of the digitalization index for 150 nations in 2010, noticed that foreign locations typically tend to observe the aforementioned progress tiers.

- The (Figure 5: Aftab, 2015) below depicts the cluster of nations, which groups under Restricted – the extremely low, Arising – the low, Transition – the middle, and the Advanced.

According to the chart below, the UAE is in the Transitional stage. The UAE's score for Digitalization in 2010 was between 30 and 39.9, according to Booz and Company's analysis of the country.

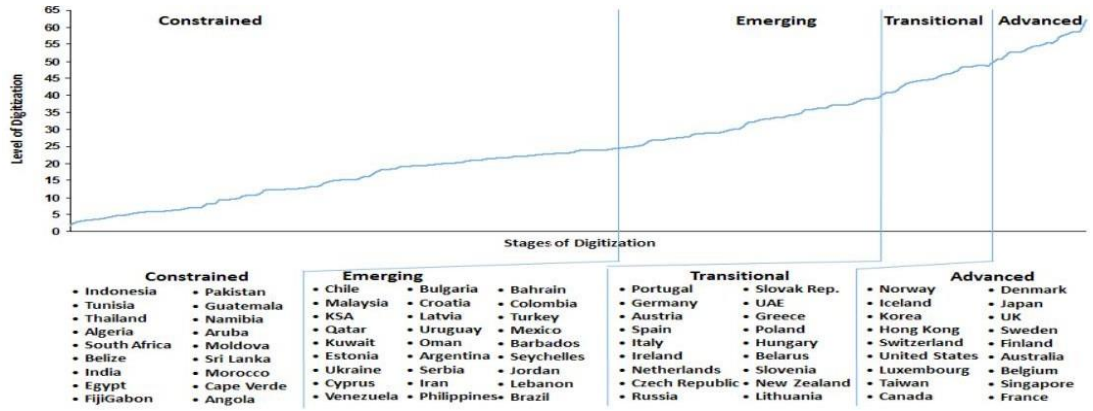


Figure 2.5 Four clusters of Digitization-Maximizing the Impact of Digitalization, Booz & Company Analysis

According to the same research issued by Booz and Company, "the digitization method exhibits a shift in the socioeconomic status, and this systematic transition is examined for its effects on monetary growth, activity creation, and welfare." The impact of digitization on a country's economic structure is striking. According to the survey, in 150 countries, an increase in digitization of 10% variables resulted in a [0.50 to 0.62] percent advantage in per capita GDP. (See Figure 6: Aftab, 2015), in contrast, access (as evaluated in broadband penetration studies) delivers a rise in per capita GDP of only 0.16 percent-approximately 0.5 as much impact. The bigger the effect of digitalization seems to be, the more developed the United States seems to be, generating a positive feedback loop in which a nation reinforces and accelerates its own growth as it progresses along the line. Based on 2009 and 2010 statistics, it is estimated that the total global financial effect of digitization in terms of higher GDP will be US$395 billion per year. (If anything, it has subsequently climbed.)" (Aftab, 2015)

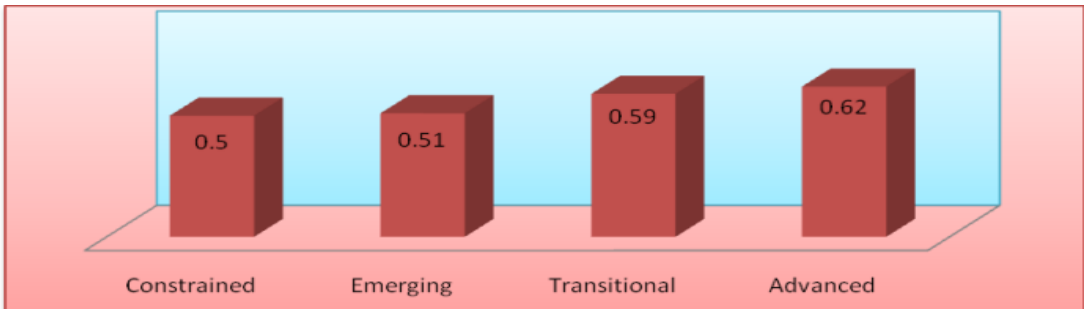


Figure 2.6 GDP Analysis-Booz & Company Report

2.15 Second Impact: Society and Governance

The impact of digitalization on UAE society has been concentrated on three primary areas: social media, the standard of living, and internet business.

Social media platforms play a key part in building a new culture and new online businesses for those who can utilize them easily and have significantly succeeded due to advances in communication technology.

In addition to national capability, research issued by Mohammad bin Rashid School of government "that public adoption of technology in the Emirates is pretty high according to various metrics. The nation ranks 32nd on UN ICT Development Index and 23rd in WEF Networked Readiness Index, as examples of this (WEF, 2015b, ITU, 2015). Social media accounts, mobile phones, and Internet have all taken off in the United Arab Emirates. In the UAE, for example, internet penetration is approximately 90%, while mobile connectivity is closer to 117%. (ITU, 2015). In spite of this, as many as 70% of individuals use social media in their daily lives, including interacting with the government (Salem, 2014). Due to better technologies of the facilities, pro-active administration promotion of digitalization and "intelligence" methods, the population of the UAE has completely embraced a digital lifestyle." (Salem, 2016). Below (Figure 7: Salem, 2016) is summarizing the topic mentioned above.

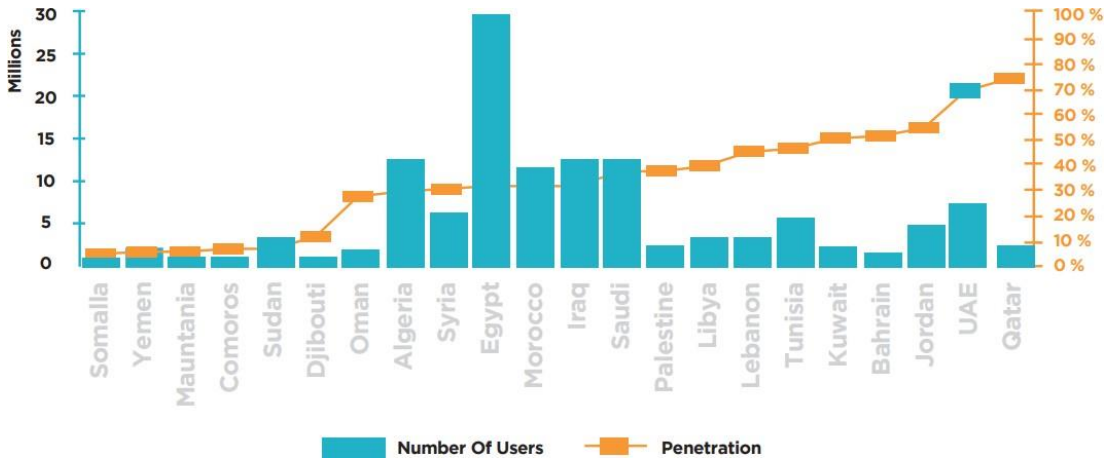


Figure 2.7 Social Media & Users, compared to the Arab Region [Based on Analysis of Facebook Users]

UAE grows wiser everyday – after – day- to- its administration speed to convert the government departments to digital transactions, this would provide a possibility for the locals, foreigners and businesses to conduct their online business with protecting their information efficiently. Thus, confidence between the state and the citizens will be strengthened, and the standard of living in the UAE will improve as a result.

Digitalization of government services and automated visitor sign systems are just minor highlights in the overall picture of the "smart metropolis." The most astute are developing technologies to accomplish anything from strengthening security and remotely monitoring infrastructure, like power grids, to planning whole communities based on 3-D simulations that predict the future and, in theory, reduce the risk of unexpected problems (Arabianbusiness.com, 2016).

The conventional concept of a "smart city" is one that employs digital technologies to optimize the lives of its citizens and make everything from distribution to health and education not only more flexible but also more efficient. In effect, it is destiny's way (Arabianbusiness.com, 2016).

"We've all seen the development of a concept of smart cities; various governments have been putting together guidelines, and I believe that's both an awesome and a negative idea," says Suhail Arfath, the Middle East head of Autodesk consulting, one of the world's oldest application software businesses. The bad news is

that the terminology is always changing, and everyone is asking the same question (Arabianbusiness.com, 2016).

The beautiful thing is that every authority now has the opportunity to use this paradigm to define what is vital to them. What is required for the UAE may not be required for the United States or Asian nations (Arabianbusiness.com, 2016).

One of the areas where technological advances are expected to have a significant influence is urban design. Innovative technology is assisting authorities in preparing for the future and avoiding costly blunders (Arabianbusiness.com, 2016).

Urban planners may use Autodesk's technologies to construct simulations based solely on in-depth analyses of environmental challenges, future populations, traffic patterns, and other features. Autodesk is a major player in this industry (Arabianbusiness.com, 2016).

“3-D models permit designers to reiterate the future… after in an effort to begin producing records and civil designers, engineers and architects begin constructing what the destiny is going to seem like”, Arfath says, (Arabianbusiness.com, 2016).

Programs like Autodesk's recapitulate will convert the acquired data into highly visible digital education models, which may then be overlayed with data on population, visitors, and so on, before being converted into 3-D models that enable actual-lifestyles study. "For most instances, based on those studies and simulations, they can actually predict the future," Arfath explains (Arabianbusiness.com, 2016).

Indifference to the past, wherever it was plainly all mechanical, they could remarkably predict the future of this urbanization and the effect of this urbanization on the city all via a virtual environment. You receive a simulation of the real environment, but it is all virtual (Arabianbusiness.com, 2016).

“It offers them with definitely essential information to be able to assist them format a better metropolis and higher infrastructure for that clever metropolis.” Arfath says, (Arabianbusiness.com, 2016).

The effect of such technology remains being determined but will unavoidably be sizeable. Arfath says “in case the governments begin sufficiently early, earlier than that specialize in a region or layout, Autodesk’s software program can assure an appropriately designed urban venture, (Arabianbusiness.com, 2016).

Shipping is one of the maximum critical factors of city designing, and is turning into simplest more essential as populations grow and environmental issues support, (Arabianbusiness.com, 2016).

TRL, a previous UK government-turned-private transportation consultant, is supporting numerous GCC countries with the installation of modern transportation systems (Arabianbusiness.com, 2016).

TRL Middle East director Akin Adamson states, "however, almost all of the work is "unglamorous," such as improvements in asphalt, the effects of which may be as large as saving lives by improving road safety." 2016 (Arabianbusiness.com).

“Nowadays, we can see an actual reconnaissance of the technology wherein can be contributed for remotely observer of delivery property, no matter its [traffic] lights or routes, and re-sending the specified facts to [a remote office],” Adamson says, (Arabianbusiness.com, 2016).

“You can use that records for massive schemes like putting in upkeep schedules, or it can be smaller scale, like switching on avenue lighting while you sense there’s activity in these areas; you may shop strength by way of putting in clever era for things like road lighting,” Adamson says, (Arabianbusiness.com, 2016).

In fact, something higher than the asphalt can be subjected to realistic generation, from avenue markings and signage to visitors lights and congestion, (Arabianbusiness.com, 2016).

On-call visitor data via smartphones and applications such as Google maps offering real-time information on congestion, and attractive routes currently benefit transportation passengers as well (Arabianbusiness.com, 2016).

“There’s a sizable growth in clever town programs that impact all of these regions,” Adamson says, (Arabianbusiness.com, 2016).

Nowadays, the market become more digitalized and the government gives you the opportunity to create your own business within few minutes and this can give the new organizations a chance to trade your business firstly online by social media then you can do it in reality.

Governance in a smart city implies using "data-driven innovation" or sophisticated analytics to allow innovation for development and well-being (OECD, 2013). It also involves providing transparent government programs via public, private, and civic participation (Salem, 2016).

Based totally in this conceptualization, the underlying regions of improvement for a smart and sustainable city encompass: 1) rate of lifestyles and quality of life, 2) rate of development of infrastructure and public services, 3) rate of development of ICT, communications, intelligence and information, 4)rate of development of human

beings and society, 5) rate of development of environment and sustainability, 6) rate of development of governance and administration, 7) rate of development of economy and finance, and 8) rate of development of mobility and transportation. In more scientific terms, the main features of a pragmatic town are its digital governance capabilities, city transportation systems, electricity, water smart grid infrastructure, dwellings and buildings, and information-related and public inclusion programs. In summary, the smart metropolis project may be a major socio-technical city transformation that promises to alter the way hundreds of thousands of people live in and interact with the city, with digital generation and statistics serving as key facilitators. In the next sections of this chapter, it will look through governance in further depth (Salem, 2016).

Below (Figure 8: Elmasry, 2016) is a summary of digital impact on economy and society, that discussed above:

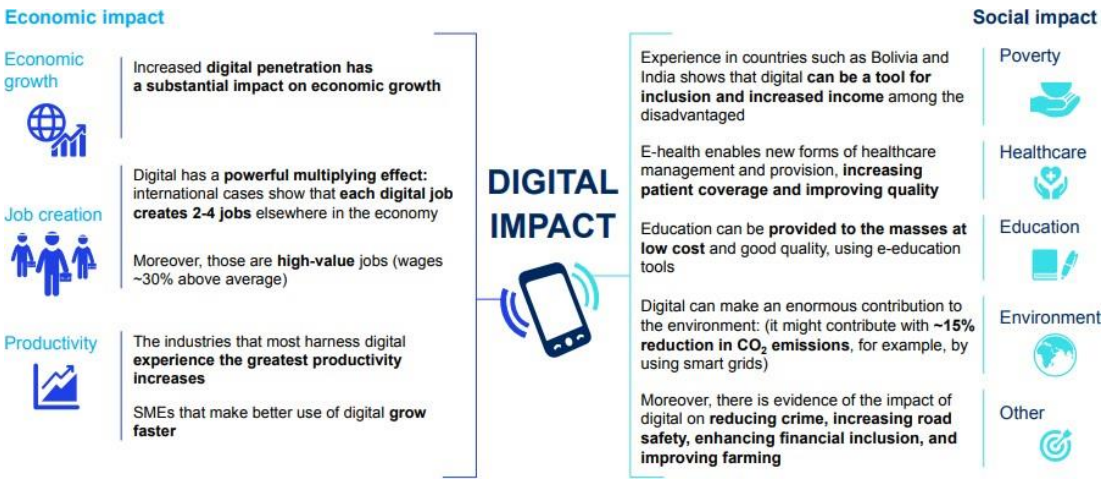


Figure 2.8 Digital Impact on Economy & Society

Finally, depending on 2017 statistics by Go-Gulf company, belo infographic (Figure 9: Go-Globe.com, 2017), has been published & clearly explained how much things happen on the internet every 60 seconds.

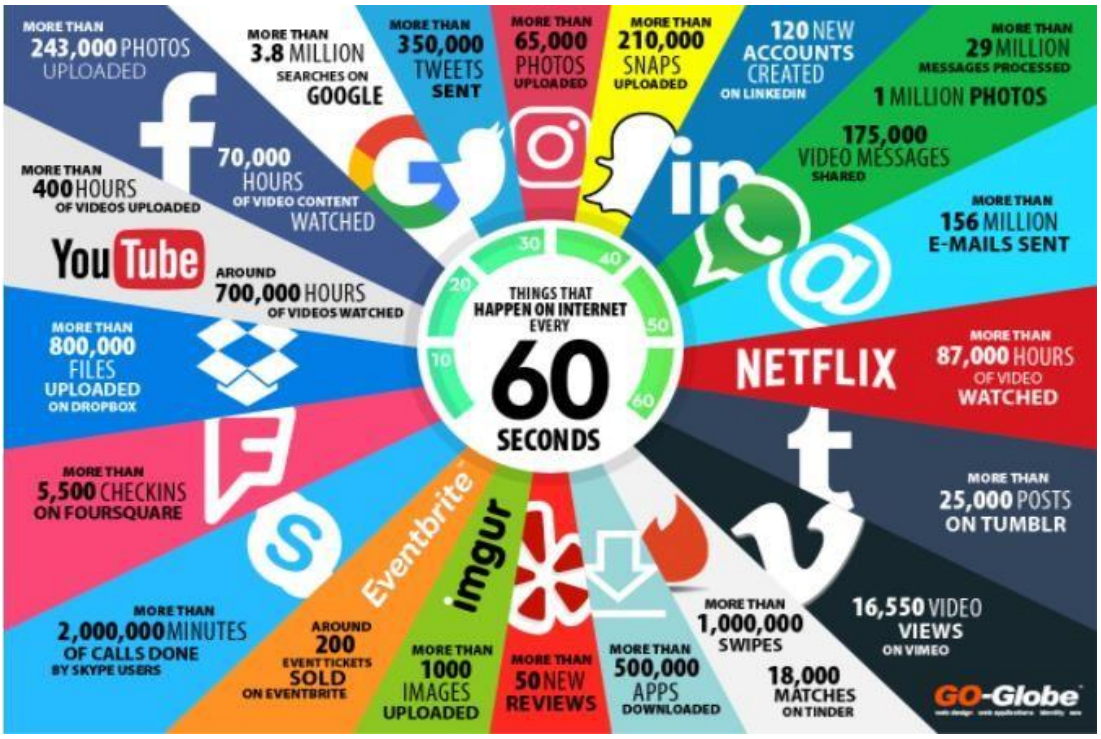


Figure 2.9 Things that Happen on Internet Every 60 seconds

2.15.1 Impact of Digitalization on Students and Education in Undergraduate & Below Undergraduate in UAE

Ministry of education in UAE starts to revamp the education to cope with future requirements, for example they inserted Innovation, Robotics & Android Programming Materials into new semesters. The students will understand the essential activity so they can innovate & create new android applications.

“Currently, teaching assistance robots are already deployed in three schools and it is going to be delivered to the worldwide marketplace at the long-term,” Senthil Kugan, director of Atlab, (Zakaria, 2017).

“Robots are key to push young students to analyze science, math & STEM training and education, this will add more fun in the classrooms and make the scholar so near these subjects”, said Kugan, (Zakaria, 2017).

The training services industry is built on technology. For the past five years, Atlab has been working with the Ministry of Education (MoE) and the Abu Dhabi Education Council (Adec) to integrate robots into school curricula (Zakaria, 2017).

"In the classroom, the robots will focus on assisting pupils with social interaction and participation." "The humanoid can connect with kids and help them with the

curriculum," Kugan noted. Teachers will be able to examine and grade students with the help of robots." (2017, Zakaria)

"Once we develop a database and load it into the machine, it will register his/her information automatically." The teacher may then give specific tasks to the pupil, which the robot can assist with. After that, the robot will provide the teacher a report on the student's progress (Zakaria, 2017).

Machine languages will become the global language in the future. Because robots will be ubiquitous in the United States over the next 15 years, children should begin learning coding, programming languages, and AI ideas at a young age in order to be prepared to interact with them (Zakaria, 2017).

Hence, it is important to make robots and artificial intelligence (AI) a part of the educational curriculum. “He stated whilst robots performing the fundamentals can now be visible inside the markets, it's far vital to expand AI systems to help with daily capabilities and practice them on actual grounds”, (Zakaria, 2017).

“MOE has delivered 75 laboratories for robotics and 3 virtual laboratories towards a general universities in Dubai”. Khalfan Juma Almarashda, director of student skills development at the ministry, said “The labs will assist students follow theories of various topics to give them a practices and to empower them recognize the best syllabus.” Juma Almarashda said “The ministry will organize a competitive events amongst students allowing students an opportunities for work on the robots.” (Zakaria, 2017).

2.16 How robots help teachers and students, (Zakaria, 2017)?

1. Engaging with robotics will provide youngsters greater opportunity to express themselves and overcome challenging academic challenges.
2. Having robots teaching assistance will also educate pupils to speak the language of machines.
3. It will help children understand algorithms to speak with machines in the future.
4. A 3D camera surrounding the robot’s LED eyes will allow it to interpret the student’s emotions and attitude.
5. Also, it would help pupils to execute their original ideas.
6. It will benefit instructors in evaluating and grading students.

Webometrics site (Webometrics.info,2018), published a report of the top ranking universities in UAE, the best national universities in UAE are United Arab Emirates University, Masdar Institute of Science & Technology which is merged with Khalifa University of Science & Technology (Masdar.ac.ae, 2017) and University of Sharjah.

To cope with the future requirements and to achieve UAE vision, United Arab Emirates University will include new colleges & revamp all specializations in the university, typically the new specializations would be included are specializing colleges in space science with focusing on the Artificial Intelligent in all colleges, adding new applied specializations in Information Security, Programming and others, (Alhallawi, 2017).

Below is a simple comparison between the above named universities in this table as can see the percentage of total technical courses and special technical courses:

Table 2.1 Comparing between 3-Local Universities Based on New Future Requirements

University Name	**United Arab Emirates University (Cit.uaeu.ac.ae, 2018)**	**Khalifa University of Science & Technology (Ku.ac.ae, 2018)**	**University of Sharjah (Sharjah.ac.ae, 2018)**
Specialization	B.Sc. in Computer Engineering	B.Sc. in Computer Engineering	B.Sc. in Computer Engineering
Study Period	4-Years	4-Years	4-Years
Total Credits Required	144	137	132
Percentage of Total Technical Courses Offered %	55.7% (44 Technical Courses out of 79)	100% (69 Technical Courses)	86.5% (96 Technical Courses out of 111)
Special Technical Courses (AI, Machine Learning & Robotics)	None	AI and Machine Learning	Robotics

Above table describes the comparison between the named universities. I am not here to criticize any of these universities. On the contrary, this is only a difference related to the mentioned specialization.

I think UAEU must support the named specialization with at least one of the special technical courses to cope with future needs such as Khalifa University & University of Sharjah. Both UAEU & University of Sharjah have to reduce un-

necessary (un-technical) courses & to replace with advance or special technical courses such as Khalifa University.

2.16.1 Impact of Digitalization on Job-Seekers, Existing and Future Jobs in UAE

As technology grows more sophisticated, many occupations will be eliminated. Still, a million new opportunities will be created and made accessible to individuals with a high degree of competence. Programming, artificial intelligence, robotics engineering, learning machines, and other digital approaches will focus on new work opportunities.

According to Jim Yong Kim, President of the World Bank, "Over the next several years, 150 million people will lose their employment throughout the world, while 300 million younger people will be striving to find new ones." According to him, "by 2030, 182 million people will be targeted for seeking for a job that may not be available, particularly AI and automated systems jobs, which will erase low-professional occupations that may disappearing as a result of the economic uprising would become a reality," he added.

Many people may face major disappointments in the years ahead except if governments act now to address the issue. As the world becomes more digitally connected through to the World Wide Web, increasing aspirations by everyone around the world, many people may face major disappointments in the coming years unless governments act now to address the issue, (Baldwin, 2018).

As the globe grows increasingly digitally integrated via social and internet networks, growing ambitions by people worldwide, a large number of people may face considerable disappointments in the coming years except governments take immediate action to address the situation. (Baldwin, 2018).

In his words, "Fifty percent of all occupations will be abolished by automation in the near future." Sixty-five percent of all elementary children will work in occupations that do not already exist. In order to deliver training to workers, it is a must to replace the existing method with a more effective one" (Baldwin, 2018). As predicted by the British Council's Future Skills study, "More than 21 million new employment will be generated globally over the next decade as a consequence of automation and artificial intelligence." "While some traditional occupations may be

eliminated, firms and countries who move now to extend future talent pools and restructure their offices will prosper in the future." (Langton, 2018).

The private sector would not be the only one to suffer losses in this situation. According to a think group in the United Kingdom, a quarter of a million government positions might be eliminated by 2033, with robots taking their place. A distinct set of skills will be required for those positions as well. Following the findings of a recent survey by the Foundation of Young Australians, young people predicted that the amount of time they spent utilizing science and mathematics would increase by 77 percent. They would have 44 percent more time for serious thought (Langton, 2018).

As a worldwide commerce and logistics center, the United Arab Emirates may expect to witness a "direct and visible" influence on its marketplace due to the Fourth Industrial Revolution, which is now underway. Sectors likely to suffer the most significant number of job losses include telemarketing and real estate to accountancy and auditing, among others. According to the report, the banking industry in the United Arab Emirates has already lost many hundred positions to automation (Langton, 2018).

According to research conducted by Oxford University, 47 percent of existing employment might be replaced by robots over the next 20 years. The nature of the UAE economy, which is primarily reliant on overseas personnel, predicts that it will grow more varied and global in the future, which means that jobseekers will have more opportunities. Emirates can compete not just with native-born expatriates but also with highly skilled individuals who apply worldwide. A goal for the UAE will be diversification since the percentage of its GDP derived from oil is predicted to decline to 20 percent in 2020 and to nil over the following 50 years. (Langton, 2018).

The Khaleej Times reported that "it is expected that 1.9 million jobs in the UAE will be replaced to prepare for the future, resulting in a suffocating crisis in unemployment. The number of job-seekers will increase, and that 65 percent of youngsters who entered elementary school last year are expected to graduate without being able to find work in today's labor market." Additionally, due to government positions' steady nature, 80 percent of Emiratis residents choose to work in the government sector. While many occupations in the government sector are becoming automated, this will result in a reduction in the number of government employees" (Zakaria, 2018).

New needs are necessary for new future employment in all categories, emphasizing artificial intelligence, programming, robotics, learning machines, and

other technologies. Job seekers and current workers must improve their abilities in at least one of the themes mentioned above and any of the digital services such as IoT, Big-Data, Cloud, and others.

2.17 Seven Reasons for Increasing the Unemployment among UAE Citizens, (Jamal, 2016)

An academic paper determined a seven reason behind the unemployment among UAE Citizens. Only 11% is the unemployment percentage in UAE. The Deputy Director of the UAE University for Academic Affairs Dr. Mohammad Abdulla Albeily expecting that this rate will not change until 2020 between aged 15 and 20. These seven reasons are summarized by:

1. Global Economic Recession and its Nature Impact on Local Economics.
2. High Rates of Population Growth without creating New Job Opportunities.
3. No Suitable Updates with Education to Cope with Future Technological Development
4. Lack of Coordination between Education Outputs and Labor Market Needs.
5. The Policies of Importing Expatriate Workers by Opening the Doors for All without Limiting Controls of the Multiplicity of Polarization.
6. The Private Sector, Specifically the Semi-Government Sector has not Contributed Significantly to Absorbing the National Graduates.
7. The Weakness of the Contribution of the National Labor Force to Private Sector Jobs, Which doesn't Exceed 7%.

Also, this paper outlined five solutions that will contribute significantly to reduce the increase in unemployment rates in the coming period:

1. To Regulate and Organize the Recruitment of Labors to the State.
2. To Change the Direction of the Citizens to the Private Sector.
3. Encouraging Citizens for Entrepreneurship and Innovation and Investment in Small and Medium Business.
4. Narrowing the Gap between the Outputs of Higher Education and the Labor Market Requirements.
5. To Develop Laws and Regulations Contain Larger Proportions from Citizens in the Private Sector.

2.17.1 Impact of Digitalization on Employment in UAE

Digitalization regulates current employment dependent on new skills to accomplish new duties which may indicate that the present workers need to be retrained or replaced by those who have these abilities While other jobs redundant are redundant and very soon will disappear, digitalization leads to new jobs and new jobs will be matching with labor market demands so on.

The most important thing that the majority of job description will be revamped to match with new future requirements. This will play new role to determine the required skills for the existing and new jobs.

Digital competencies will be extremely popular in the employment market of the future like entrepreneurs and inventiveness. It is already impossible to estimate the effect of digitalization in terms of employment creation or destruction on conventional sectors and companies.

A CEPS research explains how the digitization of the industry, or the growth of new technologies as some experts call it, will have severe implications for job creation and destruction. However, there are a variety of viewpoints on the extent to which ICT and digitalization advances like as information analytics, artificial intelligence (AI), 3D printing, cloud computing, the internet of things (IoT), and robotics may induce change, replace current employment, and create new ones. Aside from automation, globalization, and economic advancements, as well as the changing preferences of customers and processes, labor demand and supply will be affected (EESC, 2017). (EESC, 2017).

Then modern tech has an uncertain influence on old goods and services. On the one hand, it is feasible to contribute to improved efficiency, which may imply that fewer workers would be required. On the other hand, increasing productivity will most likely lead to reduced costs and hence more demand. It is tricky to describe however significant both impacts would be as they might potential dissent amongst industries, regions, and over time. Furthermore, uncertainty about the influence of automation on job development is indicated in polls by technology experts, including a pew research center study that displays a huge gap in viewpoints on whether or not automation may produce or destroy employment (Smith & Anderson, 2014), (EESC, 2017). (EESC, 2017).

The ability to computerize tasks is often determined by whether the activity is regular or irregular, and whether it is manual or intellectual. Physical and cognitive everyday activities were particularly prone to mechanization in the past (Autor et al., 2003; Goos et al., 2009; Autor & Dorn, 2013). Furthermore, digitalization has the potential to alter these routine procedures. (Marcolin et al., 2016). (Marcolin et al., 2016). However, technological advances and ICT are also increasingly contributing to automating different operations that have historically been regarded as non-routine (Frey & Osborne, 2013). (Frey & Osborne, 2013). Automobile navigation, handwriting recognition, and translations, for example, have become commonplace and automated thanks to data analytics (Veres et al., 2011; Plötz & Fink, 2009). Workplace and administrative support, as well as transportation and logistics, will be revealed by automation (Frey & Osborne, 2016). Cognitive non-routine operations, on the other hand, will be mechanized. For example, the diagnosis of chronic illnesses and cancer therapy has mostly been automated, thanks to data analytics on massive amounts of medical information for benchmarking and trend identification (Cohn, 2013). (Source: Cohn, 2013). However, there are thousands of procedures that are extremely difficult to automate. In these activities, creativity and social skills are essential (management, industry, art, journalism, education, health, etc.), (EESC, 2017). (EESC, 2017).

Due to educational qualifications, preexisting inefficiencies of certain workers are the potential to be amplified by automation. More particular, workers with a lesser educational level have the absolute highest possibility of seeing their duties becoming automated. OECD (2016) suggests that nearly 400th of lesser-educated individuals have a significant danger that their work is likely to be automated, whilst only 5- 15% of employees with a tertiary degree suffer the same risk (Berger & Frey, 2016; Arntz, Gregory & Zierahn, 2016), (EESC, 2017). (EESC, 2017).

The ability to be automated doesn't really fundamentally indicate that the new approaches are going to be embraced, and automation really occurs. During the earlier industrial revolution, it took generations before the new technology was widely implemented. Hence, the influence on the labor market was obvious (WEF, 2016). (WEF, 2016). Whether and once the tasks can truly be automated relies on the following broad requirements (MGI, 2017), (EESC, 2017):

- The intensity of issue to automate the action, i.e. the capacity that is required to design, combine and modify the innovations so that they perform in a suitable

way. The time required to automate the process might likely become much shorter once machine learning develops.

- The expenses that are involved in creating and employing the technology required for automation. These prices for both hardware and software are projected to reduce with time, making the adoption of the technology more achievable. Moreover, developments in automation via self-learning robots may potentially lower the human resources required and so decrease the requisite time and investment.
- The cost and quality of workers are significant considerations in deciding whether robotics is attractive. Employment price varies across nations, vocations, and posts, the greater the labor costs, the more feasible the activities are going to be automated." "Moreover, technology might be changing the distribution of employees across revenue groups. Middle-income workers in producing or 14 administration could lose their positions due to automation and seek lower-wage jobs, squeeze out existing low-income staff, or try to acquire high-income jobs, making longer-term unemployment more probable.
- Economic advantages include reducing labor costs, including productivity, dependability, quality, and safety increases.
- Whether the automated behavior is authorized under the law and socially acceptable. It requires a while for expenditure to be switched to creating the needed technology, altering structure procedures and practices, and making consumers feel cozy with automated activities.

Research on the influence of digitalization on job markets evaluates the possible job loss mostly via automatization dependent on presently available technology. They do not yet take into account emerging innovations that need to be invented. Possibly extra crucial, they do not account for possible profits because of higher productivity, repatriation of operations antecedently outsourced to low-income nations, and the creation of current items and industries (EESC, 2017)

In addition, the International Federation of Robotics (IFR) predicts that within five years, robotization will create one million high-quality jobs (Frey & Osborne, 2016). 2016 (Frey and Osborne). Furthermore, each high-tech employee is expected to create an additional five employment in the broader economy (Moretti, 2010; Goos et al., 2015). Moretti (2010) and Goos et al. (2015) are two examples of this type of

research. However, the rate of new technology-related jobs appears to have slowed. For example, 8.2 percent of US people shifted to new jobs related to new technology in the 1980s, while only 4.4 percent transferred in the 1990s (Lin, 2011). Lin (2011) is one example of this type of work. In the 2000s, only around 0.5 percent of labor in the United States was shifted to industries that have an impact on the environment. (Berger & Frey, 2016), (EESC, 2017).

Jobs developed by new technology generally demand high skills. Frey & Osborne (2016) predict that only about half of all new positions demand high skills. These include positions akin to data analysts, cloud designers, and security analysts. European Centre for the development of vocational training (Cedefop) statistics for the past few years and its forecasts for trying to follow era suggest that professions that necessitate either up or down skills are growing in significance, while the mid-skilled occupations are nearly non-exclusively declining insignificance (see Figure 10: EESC, 2017). (see Figure 10: EESC, 2017). Hence, automation is likely going to cause a polarization of the job market.

In order to prevent an expertise gap among worker producers and consumers, learning and educational programs have to be obliged to focus on a number of technological, creative, and entrepreneurial talents sought by automation. Moreover, flexibility should be considered into perspective (EESC, 2017). (EESC, 2017).

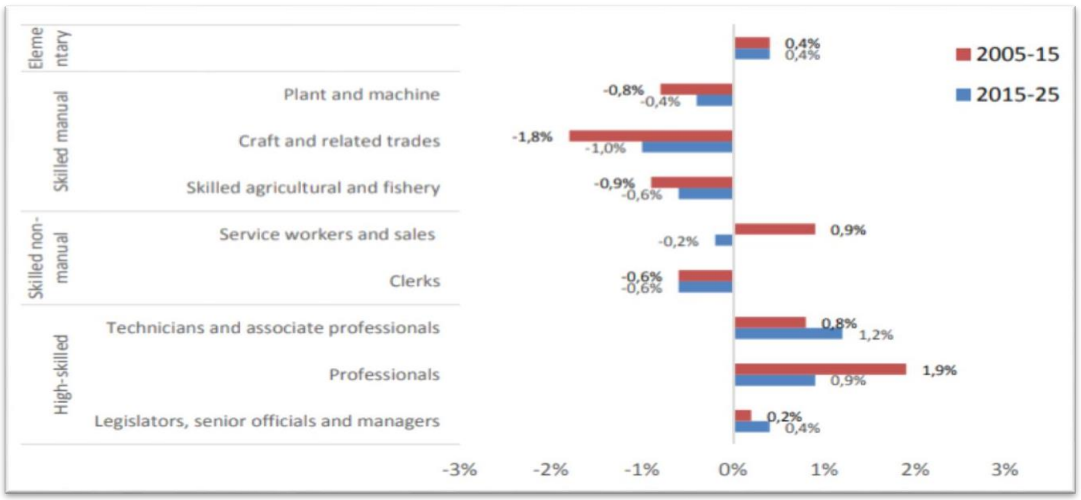


Figure 2.10 Developments in Shear of Occupations

Several technological advances such as 3D printing make it considerably more attractive to develop manufacturing nearer to home. Furthermore, automation is likely going to establish employment, a less major production element that incentivizes producers to put their manufacturing facilities closer to clients in nations with higher labor prices. This might be likely to benefit developed nations, seeing that various industrial facilities have been transferred to emerging countries in recent years (Sirkin et al., 2015), (EESC, 2017). (EESC, 2017).

Finally, even if digitization eliminates jobs on a better footing, this does not always indicate structural unemployment. As a result, the workforce is growing at a slower rate than in the past, and in some rich countries like Germany and Italy, it may even decline. To avoid a drop in capita gdp, efficiency should be improved. Based on the rate of adoption of current technologies and ICT, MGI (2015) estimated that automation might contribute between 0.5 and 1.1 percent to annual GDP per capita growth in the period up to 2065. Furthermore, if there is less rivalry for employment, the number of hours worked per worker may decrease, as has been the case in the past in a number of European countries. Labor markets could potentially fight the increased role of capital via value adjustments, since history has also proven (MGI, 2017), (EESC, 2017).

Things to consider from digitalization and the rise of the on-demand economy may possibly be substantial and influence different aspects of the organization of the workplace. In particular, they affect the time and locations wherever activities are completed, nevertheless also the sorts of jobs or the abilities necessary in the market to enable the shift towards digitalization.

Additionally, digitalization also significantly affects, and sometimes even alters, the interactions among employers and staff by developing new kinds of collective action, social discourse, or management patterns (EESC, 2017).

The digitalization will be more effecting on the labor ministries, to cope with the future requirements, labor ministries must change new roles regarding to the time, place and types of work. More flexibility must be applied on the next years to create new relations with all employees with their organizational of work. (Figure 11: EESC, 2017), clarify the relation between the flexibility and the work itself:

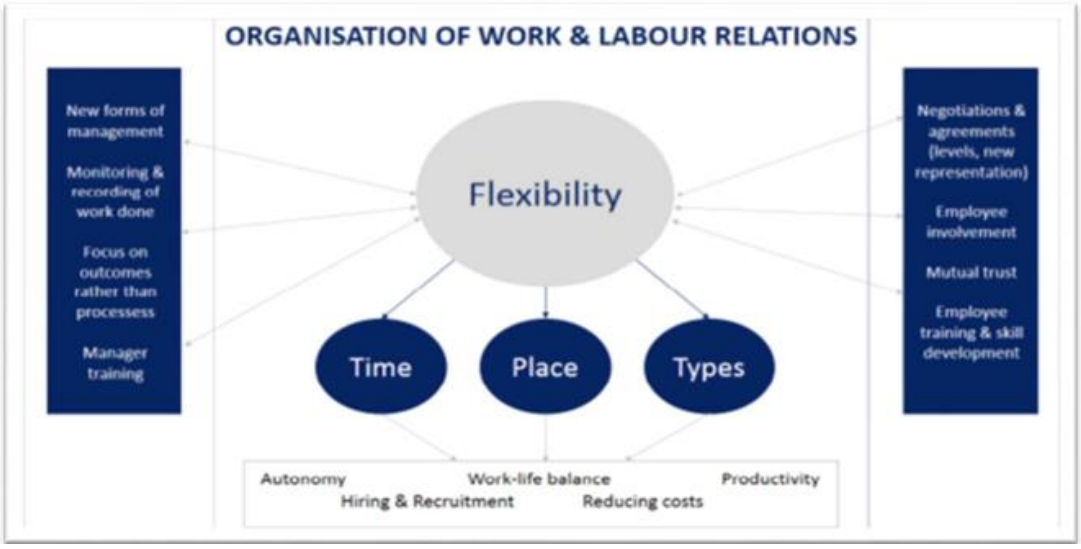


Figure 2.11 Framework on Impact of Digitalization on Labor

One of the major impact of digitalization on the organization of work is the flexibility which effecting on the interaction and communication between the workers and their organizations. Digitalization and technology lead the workers to deal with development of more flexibility ways of performing tasks.

The most visible results that can increase a flexibility in the organization is a place which it is very important to determine the working-place to the employees, which is not essentially for workers to work every day from the office while they can work from anyplace nearest their home or in the home itself (i.e. remotely). But this is depending on the tools that they and on the work types itself.

The second effect on the flexibility is the time which every workers have their own personal life and working time is effecting on the personal life. New jobs will more flexibility in time and place.

Other effect is regarding to the types of work which related to productivity itself and work can be done by less cost and quick action, this can be done by inserting only the digital technology like AI, robotics, and others.

HE Nasser bin Thani Al Hamli, Minister of Human Resources and Emiratization launched a new methodology to accelerate the emiratization until 2021 by creating job opportunities remotely for the people living in NE areas and to increase the percentage in the private sector till 5%, (Mohammad, 2018).

In UAE, MOHRE provided 1500 job opportunities for citizens looking for work remotely in northern areas, (Mohre.gov.ae, 2017).

Remotely Working is to practice the work by using a modern techniques and online, no need to go to the work to do the tasks. It can be done in the home, organization branches and other places, but to work remotely there is new skills and requirements for the worker to do their tasks remotely, (Mawdoo3.com, 2017):

• Required Skills for Remotely Working, (Mawdoo3.com, 2017):

1. Ability to plan in a proper way to ensure the completion of the work.
2. Managing the time.
3. Having a communication skill with managers and partners.
4. Accepting criticism from managers and implement their guidance.
5. Using new technologies to do their tasks.

• Requirements for Remotely Working, (Mawdoo3.com, 2017):

1. Developing ICT in the organizations.
2. Organizing the work remotely through the enactment of labor laws and regulations.
3. Focusing on education development and increasing the ability to work with new different techniques.
4. Building a new business culture for organizations and individuals, and raising awareness in the field of working remotely.
5. Take advantage of the experience of the organizations and international institution that follow the method of working remotely.

• Benefits of Remotely Working, (Mawdoo3.com, 2017):

1. Saving time and efforts.
2. Saving transportation cost.
3. Raising a productivity of workers so that the workers focusing on the results more than how they will do it.
4. Avoiding all non-motivational things which negatively affect employees, such as the direct relationship between the president and the subordinate in which a collision can occur.
5. To achieve the equilibrium between works, home works, family and society.
6. Complete freedom to select the work to be performed, in addition to select people to work with them without being restricted to certain persons.
7. Flexibility and doing tasks in best time for the workers.

8. Saving cost for the organization that need to establish offices for their employees.
9. Increase of the productivity by using new modern technologies.
10. Reduce the percentage of absence and sick leaves.
11. Reduce the percentage of unemployment.
12. To achieve the equilibrium in jobs between different geographic areas.
13. Giving the opportunity for the people with special needs to work.
14. Giving the opportunity for women to work in their areas.
15. Increase the economic and social development in the far areas.
16. Reduce traffic congestion especially at peak times.
17. Provide job opportunities for people in the far areas.
18. To achieve justice and equal opportunities for the workers between normal workers and remotely workers away from the discrimination on the basis of gender, nationality, age group or shape.

2.17.2 Impact of Digitalization on Future Jobs in UAE

Company for Economic Cooperation and Development (OECD) produced research and highlighted the jobs at danger of being substituted by automated technology or artificial intelligence (AI). The lowest-paid workers, cleaners, trash collectors, and assemblers all made the top ten list. There's a danger to salespeople, customer support representatives, and healthcare associates all at once. Certain employees in the food and beverage industry, farms, factories, courier and postal services, transportation, and enterprises that give services to structures and landscapes are among those who may be displaced in terms of industries (Maceda, 2014).

Below is the list of jobs that will be replaced by automation, (Maceda, 2014):

1. Assistants in the kitchen
2. Helpers and cleaners
3. Workers in the mining, construction, manufacturing, and transportation industries
4. Assemblers
5. Drivers and operators of mobile plants
6. Refuse collectors and other low-wage workers
7. Laborers in agriculture, forestry, and fishing

8. Plant and machine operators who work at a fixed location
9. Workers in food processing, woodworking, and textile manufacturing
10. Skilled forestry and fishing employees who are market-oriented
11. Personal service workers 11- Market-oriented skilled agriculture workers
12. Workers in the construction and allied trades
13. Business administration associate professionals
14. Workers in the electrical and electronic trades
15. Numerical and material recording clerks
16. Customer services clerks
17. General and keyboard clerks
18. Workers in the printing and handicraft industries
19. Health associate professionals
20. Information and communication technicians
21. Metal, machinery and related trades workers
22. Other clerical support workers
23. Protective services workers
24. Person sales force

• Most Important Sectors of the Future by 2030 Depending on Dubai Police Reports and Studies, (Media.emaratalyoum.com, 2018):

1-Hyperlink Transport Jobs provide about 12 major functions including:

A. Designer Stations
B. Traffic Analyzer
C.Collision Specialist
D.Architectural Stations
E.Operator Center Control

2-IoT Jobs:

A.Auditor and Evaluator of Quantity
B.Evaluating Data Contexts
C.Faulty Analyzer
D.Biological Waste Optimizer
E.Security Specialist

3-Future Jobs in Sport Sector:

A.Specialist Sports Simulator

B.Sports Rehabilitation Analyst

C.Designer and Architect of Genetic Modification

D.A psychologist for a Supernatural Child

E.Children 's Supernatural Lawyer

F.Designer Child Supernatural (One US Company Got the Patent of this Design)

4-Unmanned Aircraft Jobs:

A.Special Advisor in the Classification of UAVs

B.Designer and Engineer of UAVs

C.Improves UAV Traffic

5-Jobs in Water Sector and Collection the Water from Atmosphere (Fog-Nets):

A.Expert Impact Assessment

B.Water Systems Engineer

C.Supply Plan and Water Purification Monitor

6-Sensor Jobs:

A.Sensors Inventor

B.Data Transfer Optimizer

7-Jobs in World Leadership Center:

A.Global System Engineer

B.Data Integration Manager

C.A Scientist in Ethics, Philosophy and Privacy

D.Director of Containment of Fear and Dread

8-3D Printer Jobs :

A.Printing Tools Expert

B.3D Engineer

C.Cost Estimation

D.3D Thinker

E.3D Printer Ink Developer

F.Agent of Compensatory Devices for 3D Solid

9-Jobs in Cooperative Economy:

A.Accounting Consultant

B.Director of Cooperation Participation

C.Monitor Opportunities

D.Cooperative Economist

10 Self-Driver Vehicle Jobs:

A.Mechanical Traffic Engineer

B.Self –Driver Vehicle Designer

C.Operating System Engineer

D.Schematic of Traffic Control System

E.Delivery and Distributer Requests

Finally, below (Figure 12: Gallery.mailchimp.com, 2018) is the job market survey done in ME which explaining in percentage the new demands required for the future:

Figure 2.12 Q1 2018 ME Job Market Survey

2.18 Impact of Digitalization on Organization in UAE

Henry Mintzberg said it nicely: "Strategy comes first, then structure... and then the right foot comes after the left." As a result of digitization, every aspect of a company is affected, including organizational structures (Gpionline.com, 2015).

Digitalization is transforming how firms construct their strategies, but it must happen quicker, and organizations must be ready to adapt to new strategies swiftly. Focusing only on market prospects and understanding client needs is required.

Organizations must retrain their employees and concentrate on consumer engagement, fundamental principles, and connectivity.

However, digitization is not only affecting employment; it is also posing significant efficiency, long-term stability, and predictability concerns for huge organizations.

As a consequence of internal digitization, command-and-control and matrix organizational structures will rapidly give way to networked ones. Companies who understand the informal networks that drive them will have an advantage in this situation. These networks will allow them to swiftly adapt and develop (Gpionline.com, 2015).

Future companies will have to react fast to digital and re-adapt activities, including tasks, coordination, and supervision. Organizational objectives and vision must be the focus of management efforts. To make it simpler to regulate, huge corporations should split up into smaller ones (Gpionline.com, 2015).

Traditional management structures demonstrate that the company is broken down into units focused on planning and efficiency and that these units are controlled individually, with outcomes that are close and intensely competitive (Gpionline.com, 2015).

These stumbling blocks must be removed—Management-speak for creating cross-functional initiatives, developing supply chains, and integrating TCO systems and KPIs. In order to foster effective communication and cooperation, offices must be thoughtfully constructed (Gpionline.com, 2015).

The objective is for employees to think outside the box, considering the bigger picture, focusing on how the service should be delivered to customers under true measures and recognize their own vital to explain the mission and vision of organization for all.

Organizations have to focus on training and developing their employee skills to adapt with future, more and more projects are coming so they have to be ensured that all employees have the eligibility to handle the future works. Customers being smarter and they understood every, and each parts of new generation so the organizations should invest more in their employees not to turnover them.

Almost all company management want their companies to be more digital in some way. Over 80% of companies have a digital program in place, and 69% say they

must become considerably more digital in order to remain competitive (cebglobal.com, 2018).

This raises a few questions, though. In the perspective of some business leaders, the term "digital" simply means "invest in IT." Others will see it as a major shift in corporate practices (cebglobal.com, 2018).

For 44% of CEOs, digital spending aren't enhancing net profit margins, according to research. In general, executives believe that investments are too little and transformative enough to take advantage of the prospects presented by digital (cebglobal.com, 2018).

The most modern technology isn't as important as having the right operating systems for digitalization success. The influence of business skills, incentives, and operational models on digitalization success is 15 times greater than the impact of technological innovations (cebglobal.com, 2018).

Company executives may foster Digital-ready operational models to promote thriving digitization in their organizations. It's up to leaders to distinguish between distinct fast tracks to make management procedures simpler and encourage cooperation between their departments and the company. [Source: cebglobal.com, 2018]

Corporate executives must adhere to four important management imperatives (cebglobal.com, 2018).

1. Clarify your understanding of digital terminology.
2. Determine the digital business capabilities needed by the organization.
3. Find out what role your department has to perform in order to make digital business possible.
4. Analyze the role that digital plays in fulfilling your function's requirements.

The World Government Summit emerges as an important forum for defining the direction of governments everywhere. With an emphasis on how they will use data and technology to overcome universal issues confronting mankind, the Conference sets the standards each year for the next era of governments (Worldgovernmentsummit.org, 2017).

The World Government Summit is a meeting place for government officials, technologists, and innovators to share ideas. It also serves as a resource for politicians, corporate leaders, and members of civil society interested in human development (Worldgovernmentsummit.org, 2017).

With the stage set for future trends, issues, and possibilities confronting mankind, the Summit serves as a portal into the future for all attendees. Additionally, it serves as a platform for showcasing new ideas, best practices, and innovative solutions in order to stimulate future innovation (Worldgovernmentsummit.org, 2017).

The World Government Summit Organization initiatives that touch upon sectors and other people which will be the champions of the future. These initiatives are targeted on making positive competition to enhance and innovate emerging technologies, and also the awards that are targeted on showcasing extraordinary people from totally different sectors of government, (Worldgovernmentsummit.org, 2017).

The last session in WGS held on last February in Dubai by Sheikh bin Zayed, Emirate Minister of Foreign Affairs, was discussed about how can we make our education system serve future jobs? (Albayan.ae, 2018).

"Todays, standards are no longer a measure of our progress in the educational field and are not in line with the ambitions of the UAE. Today we are implementing the advanced educational systems that have brought the UAE people into the global competition. To develop this area and achieve these goals we need leaps beyond the traditional framework", said Sheikh bin Zayed, (Albayan.ae, 2018).

For the educational development, priorities for the development of secondary education will be as follows, (Albayan.ae, 2018):

1. Developing the School Management Method
2. Raising the Level of Teacher Qualification
3. Curriculum Development
4. Developing Methods of Education, Assessment and Testing
5. Reduce the Number of Students Per Class
6. Developing Classrooms, Laboratories and Teaching Aids

As per Sheikh bin Zayed, the methods of education and work will change and a lot of old skills will not be a useful and by a new automation systems a lot of deals, works, procedures and operations will not need for a human efforts and will see a traditional works like administrations and routine will be vanished and to be replaced by a new digitalization techniques, (Albayan.ae, 2018).

Also, it is needed to know the essential skills for the future jobs to focus on it, (Albayan.ae, 2018):

1. Mastering English Language or Any Foreign Language.
2. Skills Related to Civil Society (Societies Relationship).

3. Organizational and Administrative Skills.
4. Efficiency Increasing Skills.
5. AI and Programming Applications.
6. Critical Thinking.
7. Mastering Arabic Language.
8. Skills Related to Financial Science.
9. Emotional Intelligent.

Regarding to survey done by UAE Studies & Strategic Research, 73% preferred to work in Government and Military sectors which this percentage is very large comparing with the future requirements as shown in below Chart 1, (Albayan.ae, 2018).

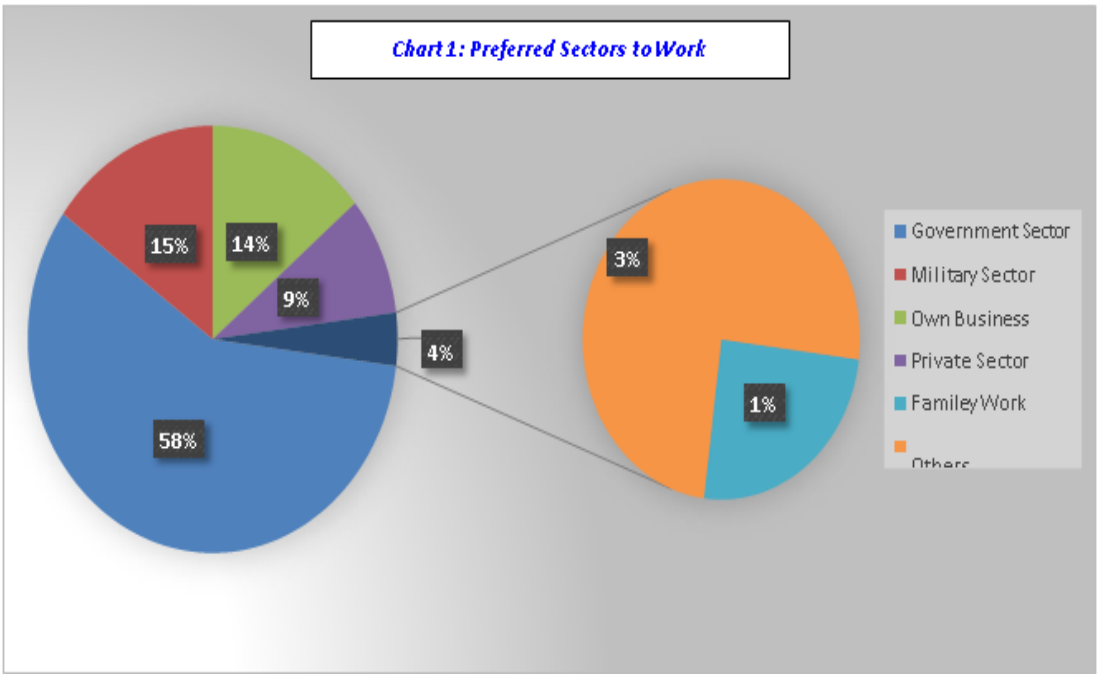


Chart 2.1 Preferred Sectors to Work

Also, in same survey noted that 39% preferred to work in Administrative departments, as shown in below Chart 2, (Albayan.ae, 2018).

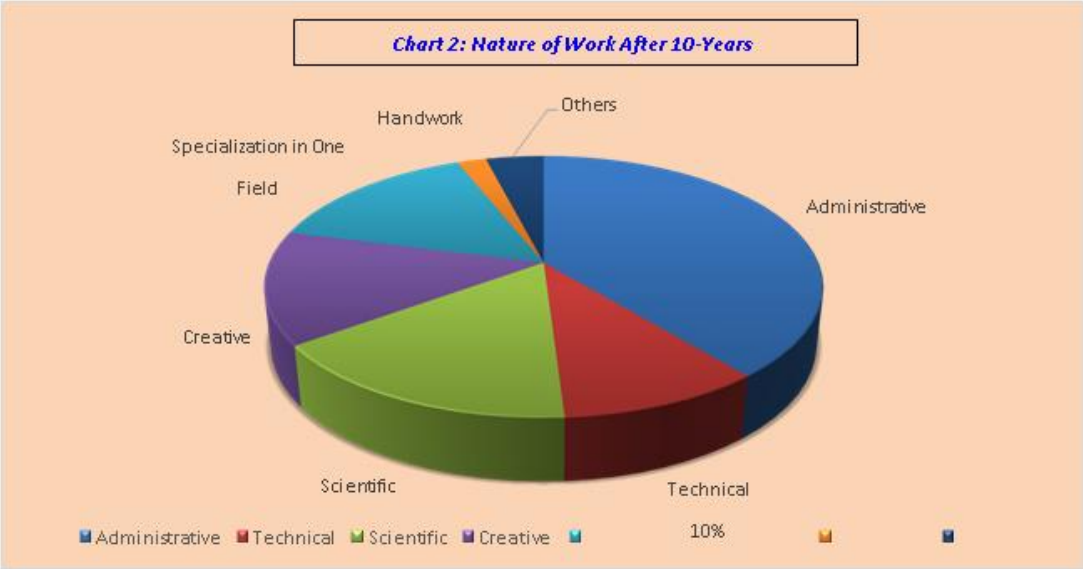


Chart 2.2 Nature of Work After 10-Years

Sheikh bin Zayed said: "The human capital is the major factor for the 4th industrial revolution in UAE". Where the country is currently ranked the first in the Arab world and forty-fifth globally in the human capital index, (Albayan.ae, 2018).

The government of Sheikh bin Rashid recently launched a strategy for the fourth industrial revolution which aims to make the country one of its world centers. He pointed out that the endeavor for accomplishing the goals set requires the state to re-consider the current educational system and qualify it to meet the requirements of the fourth industrial revolution. As, we aspire to be winners of Nobel Prizes in Science, we also aspire to win the Nobel Prize for Literature, (Albayan.ae, 2018).

Four Levels Presented by Sheikh bin Zayed to Solve the Problem of the Labor Market for Citizens & the Problem of Education Itself, (Albayan.ae, 2018):

Sheikh bin Zayed said that as a part of the effort to achieve these ambitious goals, four levels must be worked:

1-Educational Institutions where the state needs to create new educational model that constantly develops and adapts to changes in the labor market. This requires knowledge of the skills required in the future, adapting the educational system to prepare for them, working to exceed the current educational expenditure of the G7, and restricting the educational systems in the country, and the rehabilitation of the educational institutions for their cadres, and the development of curricula to include new skills. Topics such as arts, music and ethics sponsored by Sheikh bin Zayed

providing more flexible and compatible learning paths for each student, promoting international partnerships with specialized educational institution and with the private sector, on the most important variables.

2-His Highness pointed out that the second level should focus on educational techniques, explaining the need for experienced and experienced teachers, and that it is the responsibility of the government to invest in training and develop their skills, stressing that the teacher, who believes he does not need to learn and develop his personal skills, he/she is not to fit to be a teacher. His Highness also pointed out that the State has adopted the teacher's license project and made possession of the license a prerequisite for the teaching profession. His Highness also pointed out the need to work on collecting the educational process in the UAE between classroom teaching and virtual teaching, so the educational process can be developed. His Highness pointed out the need to compile and analyze the large and rapid data generated by the educational process to help the government to analyze the data of students and teachers, in understanding their abilities and strengths and weaknesses, allowing them to understand how to develop the educational process on a continuous basis, commensurate with the needs of the State and needs Students and their individual abilities. His Highness concluded the second level that artificial intelligence is no longer science fiction, so it should be used for time-consuming tasks such as marking, so teachers can interact more with students and develop themselves on a personal and professional level.

3-On the third level, Sheikh bin Zayed addressed the labor market, stressing that the university degree does not mean getting a job. Noting that some studies predict that 65% of children who attended primary school last year will work in professions that do not exist today and will be developed in the future, meaning that the government and the private sector to adopt the idea of lifelong learning, where human capital will be the only criterion for measuring success. Also, His Highness pointed to the need to strengthen the concept of vocational training for companies and convince them to allocate these necessary investments, which requires the government to be the regulator of the application of new standards in the labor market, ensure the continuation of the process of developing the skills of individuals wherever they are, More flexible work allows an individual to work in more than one job at the same time.

4-At the fourth and final level, Sheikh bin Zayed spoke about social change, stressing the need to celebrate and recognize the successful and seeking to acquire

science and knowledge to make a new culture of continuous learning. He also stressed the importance of empowering Emiratis and encouraging them to constantly seek new and innovative educational opportunities and professional. Also pointed out that encouraging recognition of failure is an advantage, stressing that leadership in business requires many attempts, in which a person is wrong and that is what we learned from Sheikh bin Rashid. Then His Highness concluded: “In the midst of all these major changes, we must preserve our UAE identity, especially in a new global labor market, and thus increase the importance of national values in our educational system”. “The government started the Education and HRs Council, for supporting the implementation of the comprehensive education vision,” Sheikh bin Zayed said. Last month, a survey of more than 1,200 citizens between the ages of 17 and 25 showed that less than 10 percent aspired to work in the private sector, and less than 14 percent were interested in starting their own business. While more than 70% prefer to join government work. Today we are at a crossroads, and therefore the Council has focused its priorities first on strengthening the process of early childhood education. We are currently studying a federal law that addresses the first six years of a child's life. We are also working on standardizing frameworks at the state level to evaluate and upgrade nurseries. And second, to develop public education and increase the competitiveness of state students globally. The institutions concerned are currently standardizing in order to achieve uniform academic outputs. The Council also began to honor schools whose students achieved the best results in the PISA tests. “Thirdly, we have launched a new national strategy for higher education to support the changes facing us in the country. This strategy will focus on providing students with the technical and practical skills required in the public and private sectors, and access to generations of professionals, professionals and researchers”. Fourthly, we will launch initiatives that encourage continuing education and raise the level of skills through advanced sciences through which we provide educational and training opportunities for individuals in their educational and vocational path. Especially since 39% of the sample of the questionnaire expect that the nature of their work after 10 years administrative work, and more than 55% believe they will continue to work in the same area and the same specialization throughout their career, which is not useful.

2.19 Activating a Partnership between Public & Government Sectors

Sheikh bin Zayed spoke during the session about the importance of cooperation between the public and private sectors, (Albayan.ae, 2018).

Also, said: We will do partnership with the private sector in building and developing curricula in universities in line with the requirements of the labor market, especially in increasing employment opportunities and focusing on job creation in the private sector. In 2016, 66% Practical in government agencies only, so the involvement of the private sector is more important than ever. “In addition, he said: “The time has come for the next leap. Many jobs may disappear in the future. Many concepts will change, but new jobs will emerge, and our choice of life will diversify. (Albayan.ae, 2018).

Finally, His Highness said: “The Fourth Industrial Revolution is a great opportunity for us in the UAE to prove that we are capable of making life, civilization, tolerance, happiness and hope, so I say with the assistance of Allah we will be its shareholders for the future. Beautiful for future generations ... the future of a dream by Zayed.” (Albayan.ae, 2018).

2.20 Outcomes of World Government Summit

1. Revamping the education and enhance all ways to make it remotely and easier.
2. Focusing on a new specializations related to the fourth industrial revolution in education.
3. Establishing the students to learn a programming, learning machines, artificial intelligent, space and Innovations to be able to compete with the most powerful countries in education and innovations.
4. Changing the undergraduate students view for working into private sector with the assistance of all foundations.
5. Launching a teacher license, which will be presented only to those who have a high level of teaching efficiency.
6. Presenting an advices to the students to refrain the studying in administrative and non-technical specialization which doesn’t have any useful in the future.

7. Achieving the dream of Sheikh bin Zayed, May Allah have Mercy on Him, by providing all citizens the best level education to achieve the centennial plan of Emirates future and reach beyond that.
8. Launching Dubai-10X which might be contributed to proceed the Dubai vision to be a future city by using a new work mechanisms simulates with future and contribute to the sustainability of Dubai competitiveness, (Dubaifuture.gov.ae, 2018), Sheikh bin Rashid said.

CHAPTER 3

3.DUBAI AND SUSTAINABILITY

Emirates has many strategies to implement it on the reality to achieve the miracles and this required a powerful country like Emirates caring to achieve the luxury, safety, and getting the first number globally in all fields and levels where Emirates leaders and their governments believe that all goals can be achieved by investments in human capital and sustainability in techniques, so the most important plans related to this research is, (Government.ae, 2017):

1-Education 2020 Strategy

2-Smart Dubai 2021

3-National Innovation Strategy

4-The probe Hope

5-Vision 2021

6-UN Agenda 2030

7-Dubai 3D Printing Strategy

8-UAE Strategy for Artificial Intelligence

9-National Advanced Sciences Agenda 2031

10-Dubai Autonomous Transportation Strategy

In this chapter, will display the relation between the Sustainability and the vision of Sheikh bin Rashid to make Dubai the best scientific interface and practical among the countries of the world, also to be the most intelligent cities in the world. First will speak about the sustainability briefly in general, then will present facts about living in Dubai and the next phase strategy of development and innovation whence Quality of

Life by Smart Applications and Modern Technologies, Innovations and E-Learning System, General Governance and Smart City Systems, the Initiatives of Sheikh bin Rashid's to teach programming, Artificial Intelligence, Learning Machine and Website Translation of Khan Academy, and finally will speak shortly about Dubai Police and Artificial Intelligence

3.1 Technology and Sustainability

There isn't a universally accepted definition of what it implies to be sustainable. On what it is and how to get there, people have a variety of ideas and perspectives to choose from. The following is generally accepted as the original notion of sustainable development:

In order to meet the current needs, we must continue to improve while also ensuring that future generations will have the capacity and chances to meet the needs and fulfill the preferences expressed now.

The following quotations (from Globalfootprints.org, 2009) will give you an understanding of what makes sustainable and inclusive development:

Transforming the situation by using the resources available and investing them wisely. Additionally, by using a newly developed technology, individuals will be able to fulfill their objectives and realize their goals today and in the future (The World Commission on Environment and Development).

Sustainability is a process that allows humans to better comprehend their capabilities and improve their quality of life while also protecting and beautifying the planet's natural resources (Forum for the Future).

Environmental protection and providing well-being for future generations need integrating economic and environmental politics, with the focus on how to improve and enhance quality of life rather than just income distribution (The Real World Coalition 1996, a definition based on the work of the World Commission on Environment and Development).

In the future, education will be the key to achieving sustainability because a healthy, sustainable environment attracts investors, has more social fairness, and has a tremendous economic impact to assure the well-being of current and future generations (Learning for a Sustainable Future - Teacher Centre).

3.1.1 Undesirable Side-Effects

The employment of innovation is intimately linked to sustainable development, as has been said. Recent technological advancements have had a variety of effects, both good and negative. Instead, the usage of technology has caused a number of problems, such as environmental ones. Aircraft move the United States quickly and securely from A to B, yet air travel is a key contribution to global climate problems. To illustrate this, Future generations will be unable to access many of the resources we use now, severely limiting our ability to progress (Oeaw.ac.at, 2018).

3.1.2 Technical Requirements of Sustainability

The link between innovation and sustainability, on the other hand, is complicated. The usage of modern technology has contributed to today's problems in certain ways, yet the need for greater sustainability is heavily reliant on new technological solutions. Sustainable societies can only function if they rely on sound technological infrastructure. These ought to be exceedingly dynamic, beneficial to health, and renewable, reusable, and socially inexpensive, for example (Oeaw.ac.at, 2018).

It's important in all of this that sustainability isn't "imposed" on a finished product after the fact. Instead, key sustainability requirements should be considered as early as possible throughout the development of new technologies (Oeaw.ac.at, 2018).

3.2 Dubai is a Paradigm

The best example can be addressed in this research is Dubai. Dubai under leadership of Sheikh bin Rashid become the most importantly city around the world. Dubai is world smart city due to digital transactional in all public services, e-solution and e-pay systems. The public living in Dubai are not facing any issues regarding to their transactional because it is easy to pay, easy to use and easy to track if needs. Only by different applications used by public, Dubai become the best destination to live. These applications is not only created for paying, giving solutions to them, but it is also used for digital learning or e-learning, tracking job application online and making online tests. In all fields Dubai is the best quality of life around the world.

The primary goal of Dubai's smart city project is to boost public "happiness" and improve quality of life. For the city, it is not only about being "the smartest"; it is about being "the happiest" location on planet. This big task necessitates tackling a wide range of issues in terms of organization, technology, culture, and policy (Salem, 2016).

It plans to use more modern digital tools for the city's long-term growth, growth, superior management, and public well-being. The government needed a lot of cooperation and agility to achieve this aim in the face of a rapidly approaching deadline. There also has to be a cultural change in how government functions and a cooperative governance practice infused for the organizations overseeing this urban transformation to be successful. Given prior experiences with big local and global digital changes, it's evident that this isn't a simple job (Salem, 2016).

In order to realize the city's ambition, smart Dubai will need to keep its entrepreneurial leadership style of the digital age, as well as its cooperative and networked government model. This new method of government ensures that future obstacles will be reduced and attempts to achieve the city's lofty objectives will be accelerated. Smart Dubai's long-term goal is to serve as an example for other regions in the Middle East that are in desperate need of progress in terms of both quality of life and governance. In the eyes of supporters of the smart Dubai plan, the city has recently evolved into a worldwide "pilot" that will likely have an influence on global development initiatives that affect almost four billion people (Salem, 2016).

It's already happening all around Dubai, with the use of 3D printing, drones, wearable tech, and other emerging technologies such as sophisticated analytics, robots, driverless cars, and virtual reality and artificial intelligence (AI). Private sector, academic, and governmental organizations are all contributing to the development of the future 5 of 70 town by carrying out cutting-edge experimental research. While this presents a number of opportunities, it also raises significant issues for society in terms of digital change. These issues call for creative and comprehensive solutions to generate public value systematically and to use the results to raise living standards and improve governance quality. A smart city project must work with authority across all municipal components, not just government, to broaden the influence of this rapid innovation on society (Salem, 2016).

3.2.1 Firstly: Quality of Life

In order to meet society's expectations for lifestyle, growth, and standard of living, Dubai has to constantly adapt new ideas since its society has one of the region's highest adoption rates for new technologies.

Aiming to mitigate growth issues while also improving public quality of life, smart Dubai is considered as an ostentatious long-term endeavor in its own right. To demonstrate this, look no further than the city's mission statement for its smart city journey: The goal of the Dubai smart town venture is to bring happiness to the people by embracing new era innovation and making Dubai the most dynamic city in the world in terms of seamlessness, safety and impact (Salem, 2016).

The standard of living, well-being, and health of the community of Dubai are part of what makes the city "Smart Dubai," as well as the literature that defines it and, most importantly, the way members of the organizations are involved in developing the smart city approach their thoughts. The primary goal of Dubai's smart city initiative, in other words, is to improve the quality of life and government. As a result, smart Dubai's strategy hinges on creating public value. For this reason, most new big government projects in Dubai are motivated by this idea of enhancing the pleasure of the public (Salem, 2016).

As part of Dubai's growth vision, the government has publicly established and carefully conveyed this goal. According to the official 2021 vision for Dubai, it's important to create an environment where people are "happy, creative & empowered" in a "all-encompassing and cohesive society" inside a "smart and sustainable city." There has been an important realignment of objectives in comparison to Dubai's previous 2015 strategic plan, which placed a high priority on rapid economic growth and development (Salem, 2016).

Due to its prior digitalization achievements and appreciation of the possibilities of using digital technology in this respect, Dubai chose to begin on its digital transformation path in an effort to enhance the general population's life quality and satisfaction. When seen from this perspective, digital technology is a well-being enabler. When it comes to smart cities, former smart Dubai Task Force chair and current director-general of Smart Dubai's office, Dr. Aisha bin Bishr, "digital is all about the people" (Salem, 2016).

Building on the above discussion, below (Figure 13: Salem, 2016), is clarified the major pillars of Dubai Plan 2021.

Figure 3.13 Key Pillars of Dubai Plan 2021(The Executive Council, 2014)

3.3 How to Improve Public Services for the Future, (Masson, 2014)?

3.3.1 Governments should focus on below top priorities to enhance the public services:

1-Make public service information available so that the general public may assess its efficacy.

2-Increased use of mobile and web media to provide services.

3-The government has to learn more about the needs and concerns of the people.

4-Easily offer services at a lower cost.

5-As a result, government must ensure that services are individualized for each individual who utilizes them.

6-Government and corporations, as well as nonprofits, must work together more closely.

7-Enhance the abilities of public servants.

8-Consolidate knowledge on what works and does not work properly.

9-Get people to participate in choosing how government services should be run.

10-Don't simply think about the next few years while making a plan; think about the long term.

11-Adaptively respond to changes, such as new technology adoption or growth in demand for a certain service.

3.3.2 Government have to address three priorities for public as showing in below table, (Masson, 2014):

Table 3.2 Government's Digital Principle for Citizen's & Public Top Priorities

Citizens' and Public Priority	Digital Principle for the Government
To Understand Better the Priorities of Citizens and Communities	E-Participation and Coproduction of Services
To Plan for the Long Term, not Just the Next Few Years	Define a Clear Digital Strategy
Provide Services in a More Cost-Effective Way	Delivering Better Public Services Optimizing the Available Financial Resources

The finest example of new technology in the digital future is Cloud Computing, which provides significant promise for the safe storing and sharing of administration and public information, therefore removing the demand for departments to build and operate their own IT infrastructure. Operating expenses may be kept to a minimum while front and back-office efficiency soar. The Dubai government must ensure that services are tailored to people's needs. To do so, it must use big data and analytics. For example, in revenue and taxes, strong analytics may assist in identifying pain spots so that tax fraud or evasion can be specified. In comparison to the commercial sector, government agencies are taking their time deploying advanced analytics due to privacy concerns, a lack of interoperability, and a lack of consensus on standards and a framework for cross-government collaboration. When individuals connect with government agencies providing public services, a survey found that 80% are interested in using cloud computing in the future (Masson, 2014).

3.3.3 Secondly: Governance Agility and Collaboration in the Digital Age

Digital governance necessitates new approaches to leadership and management. To decrease the danger of disruptive technological change, it is necessary to introduce digital governance mechanisms. As a result, a "dilemma" in administration technology transformation may be developed. The need for amendment and innovation is recognized in these digital transformation settings, yet this often leads to large disruptions and "casualties" in government. For the majority of big government digital reforms to work, changes must be made to the basic structure of government (Salem, 2016).

Smart Dubai has so far been effective in adopting this wiki governance pattern and implementing an efficient cooperative strategy to manage its smart city transition by acting entrepreneurially and utilizing soft measures in cross-government groups and committees (Salem, 2016).

The Smart Dubai team took the role as a booster and organizer, effectively leading from behind. There was less resentment to change because of this strategy. There was less chance of failure because of this approach, and there was also a cultural shift in the way government functions. Through this method, innovation and best practices from throughout government might be shared and learned (Salem, 2016).

This project was also effective because it brought all government agencies up to speed and gave them the authority to demand responsibility for the city's future vision.

They are not only carrying out the goals and frameworks of others. They'll put into action the strategies and goals they came up with together. This was critical in the early stages of envisioning a smart city, thinking, creating, planning and developing (Salem, 2016).

There is already a plan in place for the next phase of Dubai's growth to be smart. The implementation process will have to be accelerated and become more organized. Now that we're at the crux of the digital transformation process, we're running into a new roadblock: entrenched government institutions that are standing in the way of these programs' execution due to political ambitions and resource competitiveness. Another disruptive step was required to speed up implementation once agendas were aligned and a roadmap had been established collectively. Leaders needed to take decisive actions at this point (Salem, 2016).

Ultimately, Dubai's government promptly changed several long-standing government institutions to allow smart Dubai to take the lead in the next stage of development with a clear mandate and power (Salem, 2016).

As a result of the new architecture of a Dubai smart city headquarters at the heart of urban planning, Building the smart city's construction agency now has control over both government and citizens alike. Currently, the office structure only has one division, which is a smart government body. This is mirrored in the new team's thinking and structure. In the years to come, the ability to shift quickly will be critical in smart Dubai (Salem, 2016).

3.3.4 Thirdly: Innovation and E-Learning Systems

Innovation is thinking outside the box, making new ideas, or create simple method and process for a values of services which customers will pay for using it.

Sheikh bin Rashid was very interested in innovation which become now a topic taught in UAE schools this will contribute to the emergence of a new generation based on the idea of innovation and promotes the introduction of new ideas for design it and applying it on the reality.

3.4 Purpose of Encouraging Innovation, (Government.ae, 2018)

1-Putting in place a long-term strategy for investing in the UAE's human resources.

2-Distracting the economy from reliance on the oil industry.

3-Increasing the efficiency of the UAE on the world stage.

4-Setting up a business innovation culture and introducing new methods.

3.4.1 2015, a Year of Innovation, (Government.ae, 2018)

The Emirates Government authorized the recognition of 2015 as the Year of Innovation in November 2014 in an opportunity to make the Emirates a global innovation powerhouse. Because of this, all federal agencies were instructed to improve collaboration and alter their policies to foster new ideas.

3.4.2 UAE Innovation Week, (Government.ae, 2018)

When Sheikh bin Rashid, Ruler of Dubai, announced 2015 to be the Year of Innovation, the Emirates Innovation Week was started in August 2015.
The purpose of the event was to support the Emirates in establishing a pervasive innovation culture and to boost the country's standing as a worldwide innovation center.

3.4.3 UAE Innovation Month, (Government.ae, 2018)

Sheikh bin Rashid, the Ruler of Dubai, directed that 'Innovation Month' be recognized across the Emirates in honor of the achievement of Emirates Innovation Week in 2015, 2016, and 2017.

3.4.4 Dubai Future Accelerators, (Government.ae, 2018)

Crown Prince of Dubai and President of Dubai Executive Council Sheikh Hamdan bin Rashid announced the Dubai Future Accelerators program in 2016 to facilitate the rapid deployment of revolutionary technology. In order to support innovators and entrepreneurs, accelerators use programming and integrated systems.

3.4.5 In order to address seven significant 21st-century possibilities, the project will bring together leading worldwide companies and entrepreneurs, including:

1-3D Printing
2-Biotechnology
3-Genomics
4-New business models and best practices.
5-The application of cutting edge technologies like artificial intelligence and robotics

3.4.6 The Emirates Hackathon – Data for Happiness, (Government.ae, 2018)

In February 2018, the UAE Government conducted a countrywide Hackathon named "The UAE Hackathon – data for Happiness". During the Fourth Industrial Revolution, the UAE is focusing on artificial intelligence (AI) and smart city development. Every year, there will be a new hackathon since data is now one of the

biggest significant things to consider in the digital era and an integral part of the move to a knowledge-based economy.

Therefore, UAE smart administration created the National Innovation Strategy and alternative national plans that form part of the processes for constructing the Fourth Industrial Revolution Strategy for the long term.

These national trends are reflected in the UAE Hackathon, which has as its goal drawing attention to the great value of data and the resulting solutions to everyday problems in the economic, social, environmental, and scientific realms of human endeavor.

With data as a starting point, the Hackathon intended to create new solutions that improve the quality of life for everyone in the community. An additional goal of the event was to bring together many students from diverse backgrounds to build cutting-edge solutions based on the analysis of accessible data.

3.4.7 Several issues will be addressed at the UAE Hackathon, including

1-Education
2-Enhancement of lifestyle
3-Enhancement of social relations in the UAE community
4-Environment and climate change
5-Gender balance
6-Health and safety
7-Sustainable development (post-oil age)
8-Transportation and traffic congestion

3.4.8 Hackathon Artificial Intelligence – Highlights Innovative Prospects

Planning and cooperating with IBM company and Knowledge and Human Development Authority, Dubai Smart launched "Hackathon Artificial Intelligence" to highlight the vast creative opportunities offered by the 4th industrial revolution and how to use it to make Dubai the smartest and happiest city on the planet (Emaratalyoum.com, 2018).

Doctor Aisha bent Butti bin Bishr, Dubai smart's gdr, said: Through the Hackathon, our objective is to capitalize on AI's potential and play a significant role in the industrial intelligence of Dubai. We also want to encourage the youth sector to

innovate with this to take advantage of the important opportunities presented by the Fourth Industrial Revolution, and to face the resistance in critical areas such as education, transportation, and tourism by using AI techniques to provide the best solutions and experiences for customers and to promote the concept of happiness in society and its path towards sustainable development and to meet the objectives of the UAE Centennial in the process (Emaratalyoum.com, 2018).

3.4.9 E-Learning Systems

Students no longer have to be restricted to small four-wall rooms with only one instructor and a few dirty school desks. E-learning platforms are being used by an increasing number of UAE institutions in order to improve the educational experience for their students (Nasir, 2017).

Some Dubai-based schools have begun using virtual classrooms and other e-learning technologies. Online resources that enable pupils to complete assignments communicate with their peers and participate in educational debates. As a delivery and management tool for academic institutions, e-learning platforms have grown in popularity. It allows students to study more than just what is taught in the classroom, and it also prepares them for online interactions with their classmates and lecturers (Nasir, 2017).

Also, in 2002 Hamdan bin Mohammad Smart University have been launched as the first e-learning foundation in UAE to encourage the e-education and self-study. This is an example of a future education that will help student to study in flexibly and helping to develop the economic and society.

This kind of education is easy to implement and inexpensive, and e-learning plays an influential role in literacy in the Arab world.

3.4.10 Benefits of E-Learning Systems, (Nasir, 2017)

1-A higher knowledge retention rate

2-Consistent instructor presence

3-Freedom and flexibility

4-Quick communication

5-Reduction of carbon footprint

6-Self-assessment tools

7-Time and money saving

8-Unique testing methods

3.5 Fourthly: Initiatives of Sheikh d bin Rashid's for Skills Development for the Future Requirements

The best example of e-learning is "106 Arab Coders" initiative that's related to Sheikh bin Rashid's global initiatives as the largest programming project that aims to train a million Arab young people on programming and technology and to keep abreast of the rapid development of computer science and software to enable Arab youth to equip them with technological future tools and build their capacities. Skills and guidance to serve the future needs and contribute to the development of the digital economy, which will form the economy of the future, (Albayan.ae, 2017).

To empower the Arab youth in new modern technology, 106 Arab Coders initiative lunched to support the youth and to educate a million of Arab youth on programming, this initiative is targeting all ambitions Arab youth, Sheikh Rashid said, (Albayan.ae, 2017).

Sheikh bin Rashid said: Programming will open up millions of job possibilities to the youth without leaving their international locations and begin their own groups at the net. Programming will drive to the global economic system, (Albayan.ae, 2017).

Also, Sheikh bin Rashid added: Our new challenge is related to our universal enterprises to make opportunities within the area, to build a new future for the Arab Youths of the place and to resolve the unemployment quandary in MEs. Programming is the future tools ... It is a source of strength for peoples... Billion companies today is based on programming... The world economy depends on the programmers... We will train a million young Arab on programming. (Albayan.ae, 2017).

Objectives, (Albayan.ae, 2017):

1-The "Million Arab Programmers" initiative, managed by Dubai Foundation for the Future, aims to empower millions of Arab youth in the region by providing them with jobs in the modern technology sector, training them, improving their skills, enriching their knowledge, developing their abilities and building their expertise in the fields of advanced science. Mastering the language of programming and excellence in

order to be ready to deal efficiently with all the requirements of the future digital economy.

2-The initiative of "106 Arab Coders" reflects the revitalization of Sheikh bin Rashid to revive the Arab civilization and improve the reality of the region and move from the circle of despair to the horizons of work and stimulate innovation and make positive change and instill hope among young Arabs who make up the largest proportion in our young societies and invest their energies and exploitation Talent and channeling their abilities and pave the way for them to build their communities on solid knowledge bases to ensure that they can achieve progress and leadership in global competitive environments.

Finally, the best message to the youth for encourage them to develop their skills, educate their self to cope with the future is the Message of Sheikh bin Rashid:
My message to the Arab youth is to take initiative, do not waste time and miss-opportunities. This is the time for scientific discoveries, (Albayan.ae, 2017).

3.6 Fifthly: Dubai Police and Artificial Intelligence Technology

In accordance with the UAE's strategy for artificial intelligence, Dubai Police Chief General Abdullah Al-Marri has implemented the Strategic Plan for Artificial Intelligence in Dubai Police 2018-2021, the first big task inside the UAE 2071 Centennial initiated by Sheikh Mohammed bin Rashid, Ruler of Dubai, in accordance with the Dubai 2021 Plan, the Strategic Plan for Artificial Intelligence in Dubai Police 2018-2021 has been adopted by (Emaratalyoum.com, 2017).

The Director of the Directorate General of Artificial Intelligence, Brigadier Khalid Nasser Al- Razzouqi, said that "the strategy for artificial intelligence was planned to develop all intelligent systems into systems that predict the needs of customers based on artificial intelligence methods in all police fields, security forecasting of crime and traffic accidents, Techniques and tools of artificial intelligence, serving the internal and external audiences of Dubai Police, as well as the balanced use of AI tools and human cadres" (Emaratalyoum.com, 2017).

According to the strategic plan for artificial intelligence 2018-2021, the UAE Centennial objectives are to adjust and enforce growth projects and programs to attain the prospect, depending on artificial intelligence in the provider and analysis of the data by 100 percent by 2031, and boost the effectiveness of government, as well as to

be the first UAE in the world to engage artificial intelligence in various important areas, among other things (Emaratalyoum.com, 2017).

He explained that "the strategic objectives to improve service centers for customers with Dubai Police, which will be supported by artificial intelligence systems, as an intelligent system predicts the transactions that the client wants to obtain when reviewing service centers, as well as the proliferation of intelligent police stations in many areas and centers walk in and drive through in the emirate, in order to facilitate access to various members of the community, and to promote centers of various kinds of robotics, autopilot and systems integrated with artificial intelligence techniques" (Emaratalyoum.com, 2017).

Forensic science, police investigations, and road security and safety will all be improved as part of this strategy, according to the official. This includes incorporating artificial intelligence methods into criminal work by forecasting offenses and criminal investigations intelligently. Using artificial intelligence techniques, as well as the use of AI systems in crisis and disaster management, such as the crowd and crisis management system, an intelligent system that studies and analyzes crowds and reports directly to the decision maker (Emaratalyoum.com, 2017).

Al-Razouqi said that the strategic plan also seeks to speed up and accurately respond to the clients in different ways and languages, and analyze the evidence of the reality enhanced through virtual applications, And enhance the competences of the police staff in the use of artificial intelligence techniques and methods to achieve the direction of leadership and support the strategy of Emirates Artificial Intelligence, as this technique will be the first in ME area, and looking for development and organize tools of artificial intelligence technology to be an integral part of the governmental business in the State, In the face of rapid changes and achieve a specific expansion in the universal enhancement for all ranges, through the construction of a complete and complete digital system that addresses the challenges first-hand, and provides practical solutions and rapid, quality and efficiency consistent with the Centennial of UAE 2071, To be the best UAE in the world in all fields, (Emaratalyoum.com, 2017).

CHAPTER 4

4.THESIS ANALYSIS & CONCLUSIONS

Depending on previous topics that presented in detail and the research questions which was displayed in chapter one without mentioned any details. These questions will be analyzed based on the interviews conducted with [UAE Etisalat Corporation (Etisalat), Ministry of Human Resources & Emiratisation (MOHRE), Telecommunications Regulatory Authority (TRA), Ministry of Economy (MOE), Ministry of Infrastructure & Development (MOID), and Ministry of Health (MOH)].

Will use a comparison process by charts between all named corporations for each question with brief conclusion to justify the analysis:

Just, note that below charts clarify the corporation opinion or action that will be taken at a later stage depending on the situations that will be faced probably. Below scale means:

0: No or Not agree with it

10: Yes or agree with it

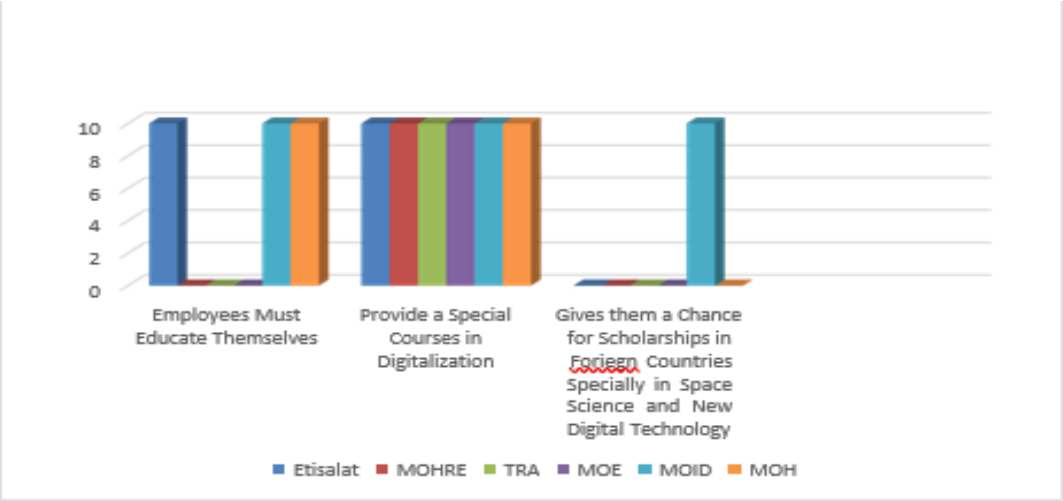


Chart 4.3 Does the organization have a clear plan to retain its employees, especially the excellence once, to invest and train them to adopt with the future requirements? This chart clarify that 100% of all corporations agreed to provide a special courses in digitalization but 50% of them said that employees must educate themselves to cope with future requirements, while MOID said "that we can give the employee an opportunity to get a scholarship in foreign countries in space and digitalization specializations".

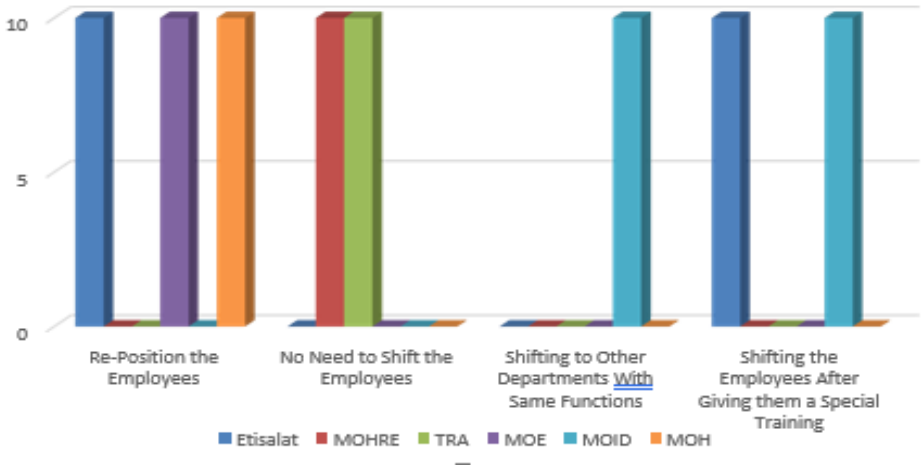


Chart 4.4 For the People who doesn't work in technical department or doesn't have any technical certification like, HR, Account Manager, Sales Manager, Processing, Customer Service (call center) or any non-technical jobs, what is your recommendation for them?

For future requirements, the jobs will be minimized specially in government sector as most of jobs will be automated, in this case some changes should be done in government sector in case they do not want to lose the employees, and they have to transfer the employees to other departments with same functions as said by MOID or giving them a special training in digitalization courses then shift them to other departments specialized in new digital technology as said by Etisalat & MOID. 50% said that we will re-locate the employees to other department in line with the future. Only MOHRE & TRA said that "no need to shift the employees as they have a good experience in their functions".

Chart 4.5 What is the new requirements should the job seekers have when they want to apply for any new vacancy in your organization?

Vice President of HR-Business Partner in Etisalat said that "the job seekers need to have at least one digital technique skill to join Etisalat regardless of what is their specialization". To join MOID, the job seekers have to succeed in the tests and interviews done by the corporation. Also, 50% said that the job seeker have to focus on a future technical skills to join. On the other hand, all corporations agreed that the best job seekers will be picked regardless of their specializations.

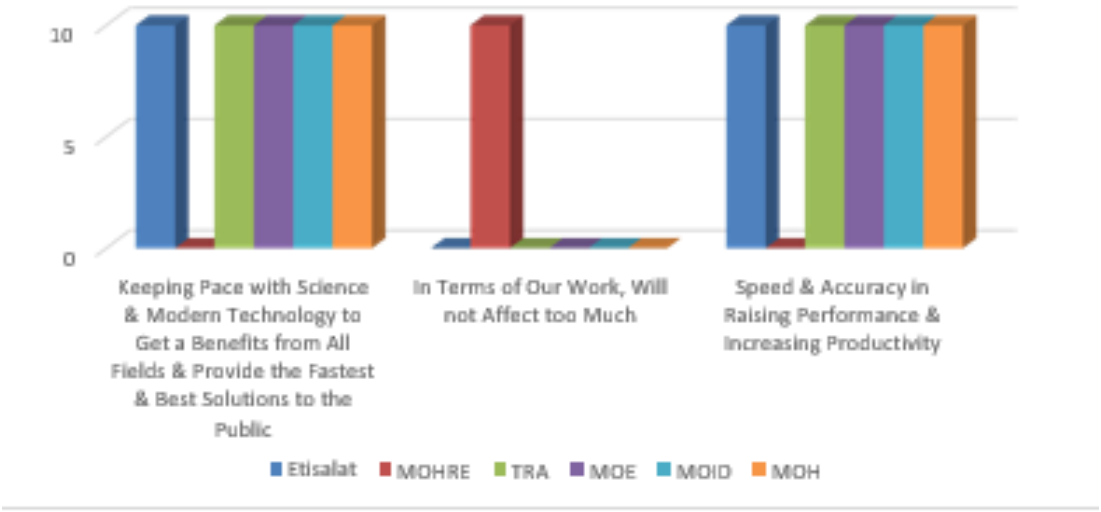


Chart 4.6 What is the positive impact of the digitalization on your organization?

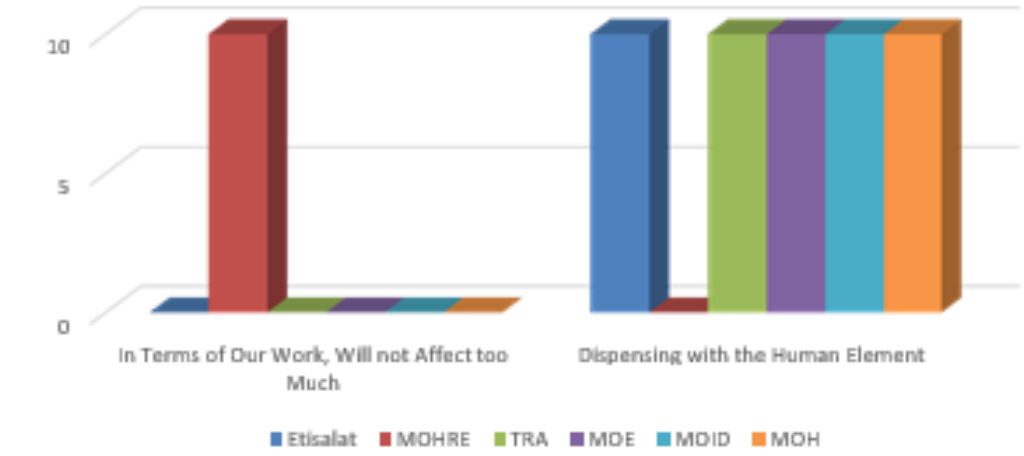


Chart 4.7 What is the negative impact of the digitalization on your organization?

The positive impact of digitalization on the corporations will effect on the speed, accuracy, performance and productivity. Also, keeping pace with science and modern technologies to get a benefits from all fields plus to provide a fast and the best solutions to the public. Companies, except MOHRE, have said that "not too much impact will be impacting our work, when discussing the negative effects of employment loss. That's what the businesses have claimed.

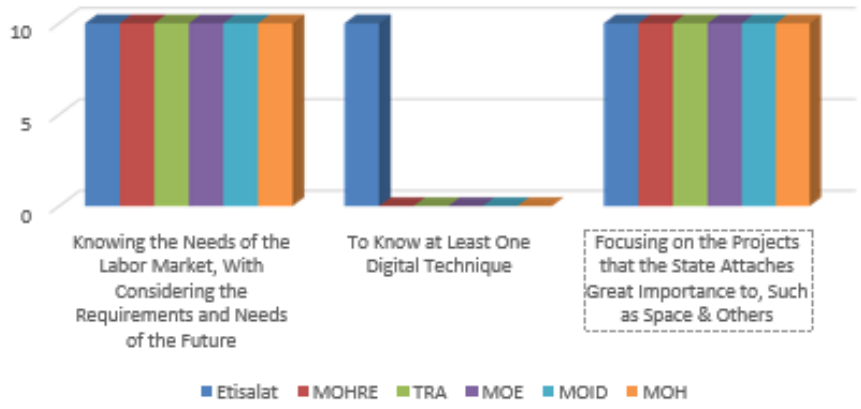


Chart 4.8 What is your recommendations for the high school students/undergraduate in UAE whence selecting the specialization & taking new technical courses/skills

Both Vice President of HR-Business Partner and Acting Director of Digital Channel Development & Delivery in Etisalat said that "the undergraduate students must know at least one digital technique skill regardless of their specialization and to focus on the future projects which is highlighted by UAE Government". In addition of that, all corporations agreed that, the students in high secondary school must know the needs of the labor market, and the future requirements and to focus on the space & digital projects highlighted by UAE government also to avoid the stagnant specializations.

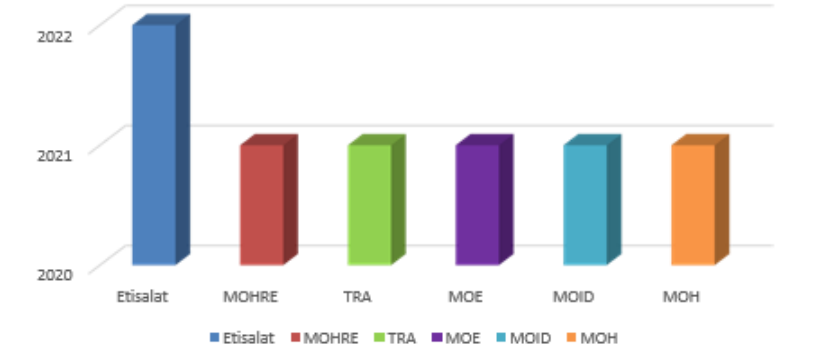


Chart 4.9 When your organization will be fully digitalized?

Vice President of HR-Business Partner in Etisalat said that “Etisalat will be fully digitalized by 2022” which will provide the best digital solutions for Etisalat’s customers and improve the efficiency & performance of employees by providing them a special courses in modern digital technologies to make Etisalat services a very high quality valued. While, the UAE ministries and authorities will be fully digitalized by 2021 depending on UAE Vision 2021.

4.1 Conclusions

Below is some conclusions based on the interviews was conducted with above named corporations:

1. Etisalat, MOID and MOH, recommend that existing employees must educate themselves to cope with future needs & requirements.
2. MOID will give an opportunity to the employees to get a scholarships in space science and new digital techniques in foreign countries.
3. Etisalat, MOE and MOH, will re-locate the employees to other department as most of the existing functions will be automated. While MOID will shift the employees after giving them a special training or to other departments have the same existing functions as also agreed by Etisalat. On the other hand, MOHRE and TRA don’t have any plan to shift the employees.
4. Job seekers need to success in the test and interview to join MOID.
5. If the job seekers have high technical skills, they have a good opportunity to join Etisalat, MOE and MOH as per them.
6. Efficiency, precision, productivity, and profitability will all improve as a result of digitization. To make matters better for customers and the general public, the beneficial effects of digitization will keep science and technology development moving forward. Except for MOHRE, where no influence will be felt on their work, the negative effects will be limited to those on the human element, which will be dispensed as a result of job losses.
7. The aforementioned companies will provide digitalization-specific training to their staff, and they will choose the most qualified candidates for open positions.

8. Several companies advocate that university students and high school students concentrate on the UAE government's future initiatives while also learning about the labor market's current and upcoming requirements.
9. Both Vice President of HR-Business Partner and Acting Director of Digital Channel Development & Delivery in Etisalat recommend the students to know at least one digital technique skill regardless of their specialization.
10. Vice President of HR-Business Partner in Etisalat recommends the job seekers to have at least one digital technique skill if they want to join Etisalat World.
11. 2022 is the target year for the transformation of Etisalat into a fully digitalization network, while 2021 is the year of fully digitalization in UAE ministries and authorities.

CHAPTER 5

5.SUGGESTED SOLUTIONS & RECOMMENDATIONS

The final part will display in this thesis is suggested solutions and recommendations that could be useful for high school students and universities in order to choose the best and correct way to adapt to the future. As well as job seekers have to know the needs and requirements of the future and the current employees have to know the needs of the future as the current functions will disappear soon. So, they must educate themselves and work hard. Also. In addition of that these suggestions could be useful to some existing institutions and companies and universities in UAE.
As we know that 1.9 million jobs will be vanished in UAE in the next coming years, the following suggestions are recommended:

5.1 General Recommendations

1. Developing innovation in secondary schools. To pass the secondary level, each student must work to create at least one project.
2. The universities have to open a new specializations like AI, Advance Programming, Learning Machine and others to adapt with the future.
3. Technical universities & institutes have to minimize un-technical courses and focusing always on the new technical courses.
4. If they want to evolve with the times and graduate from college, all students must take at minimum one digital course, such as Cloud Computing, Big-Data, or Block-Chain.
5. A minimum of one digital skill is required for employment.
6. To stay relevant in the future, present workers must further their education.

7. Companies in the United Arab Emirates are required by law to provide their staff with specialized training in order to prevent employee turnover.
8. MOHRE must compel businesses to come up with new employment specifications for the future. In order to teach its personnel in ministries and authorities with specialized digital courses, the UAE government needs to collaborate with high-tech companies.

5.2 Special Recommendations and Solutions for the Organizations

To keep their company growing, organizations must spend more on digitization. Digitalization's impact on a company will have an impact on both the occupations that are automated and the people who work in them. In order to prevent any complications throughout this transformative period, companies must offer specific practices.

5.3 How the organizations will adapt their departments to the digitalization technique or what is the expecting results of digitalization benefits?

A.Digitalization for IT Leaders

To success in digital transformation, IT leaders have to change below features to cope with future:

1-Products have to be organized under projects by IT.

2-IT should be involved in business sector to cope with future.

3-Developing the operation and quick implementation at scale.

4-Focus on customer requirements design.

5-Developing applications for easy building such as 3D printer.

6-IT must launch smart cloud technology at scale.

7-New strategy applied over governance.

8-New strategy applied for data over ownership.

9-Establish coping skills and mindset.

B.Digital Transformation Strategy

It is necessary for enterprises to pursue a transformation strategy that leads to a digital navigator in order to push the digital endeavor forward. Navigating in the digital age involves:

1-Instead of focusing on an individual technology, consider market shifts.

2-The concept for digital compression testing company.

3-Looking for digital portfolio gaps.

C.Digitalization for Sales & Customer Services Support

Customers need to customize the plans or packages that required to their organization, so sales has to change the platform agreement with customers' orders:

1-Give the customers access to the appropriate portal to request/delete orders by themselves and to track their orders also.

2-Let, customers have an opportunity to check all new services available on the portal.

3-Let, customers make online meeting with sales that responsible of the product shown on the portal & solve any issues facing the customer online not onsite.

4-Organizations need to create "Robot Assistance" as a "Mobile Application" to respond on the customers' inquiries, and to guide them to the right-way, and assist clients' to get an appropriate services.

5-Digitalization will save time, costs & increasing the confidence between providers & customers.

D.Digitalization for Engineering

What digitalization can do for engineering department?

1-Shorter projects & assigned times.

2-Less agenda downtime.

3-Higher software quality for pure and hassle free production.

4-Directorate and guide the employees easier and faster by giving them a training on a virtual mode.

5-Great saving on costs, times, and higher productivity.

E.Digitalization for HR Leaders

As new jobs emerging and existing jobs changing, each company needs to revamp its recruiting strategy:

1-Recruiters must promote for their brand attributes to attract the job seekers.

2-Recruiters have to focus more on addressing candidates' career goals not too much focusing on their sales pitch.

3-Recruiters have to know how the quality hires and top talent can be selected with providing them a special benefits.

4-Recruiters must look for what is truly to get the job done instead of focusing on skills and experience.

5-Recruiters must look for an acquiring talent job seekers and focusing on the jobs that represented the digitalization such as Cognitive Implementation Engineer, Software Development Engineer, Front End Developer' Applications/Middleware Administrator, Cognitive Solutions Engineer, Automation Engineer, Unix Systems Engineer, UX Designer, UI Manager, UI Designer, Systems Architect/ Cloud Engineer.

F.Digitalization for Procurement

Four major challenges faced procurement organization but could be improved if the organization used automation and digital techniques:

1-Visibility.

2-Quick implementation.

3-Extend commitment.

4-Average saving rate.

G.Digitalization for Marketing

Marketing department must apply the customer-driven-method which concerns into digital dealing. They have to enhance their digital efforts by:

1-Hiring digital domestic as a marketing talent.

2-Using with lots of digital access points such as social media, mobile, search, etc…

3-Working with new partners and invest more in digital techniques such as Big-Data, Cloud Computing and analytics.

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ÖZGEÇMİŞ

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