Original Research Article

3 Innovative Human Resource Practices: An Absolute Necessity for Industry 4.0 (A Select Study of Saudi Arabia ICT Sector in Age of Opportunities)

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Abstract

A recent study says that organizations must change their human resource (HR) policies in order to adapt to Industry 4.0. This study focuses on the link between Industry 4.0 and three important HR practices: training and development, job design, and performance appraisal. All of these things have a direct effect on motivation in the workplace. It's a new way to look at the most innovative management techniques that encourage a culture of continuous improvement at work so that the company can keep up with industry 4.0 improvements and incorporate them. Human resources (HR) departments need to be proactive about using these new technologies and staying up to date on the skills they need. Employee training and development is a term for educational activities within a company that are meant to improve employees' knowledge and skills, as well as to teach them how to do certain tasks better. The content, responsibilities, goals, and relationships that are needed to meet the expectations of the role are all set by the job design. A well-designed job can encourage good behavior and give employees a solid foundation for success. It can also evaluate performance, which is an important part of keeping people motivated at work. HR's new job is to get employees more involved by making sure they have the best benefits, trusting their teams, working together, and being able to grow personally. All of these things build a strong case for a successful retention strategy. The study shows how important it is to use cutting-edge strategies for managing human resources at work.

Keywords: Human resource practices, training and development, job design, performance evaluation, employee participation, organizational development, and motivation at work that is new and improved.

INTRODUCTION

Companies know that the promise of Industry 4.0 is to make work faster, smarter, and more sustainable. The hard part is keeping that promise. Henrik von Scheel, a management thinker and the "father of Industry 4.0," says that for Industry 4.0 to be successful, you need to think about value, not technology, people, not tools, and set clear goals from the start. In a large, open office in Western Australia, a group of engineers look at a 3D image of a nickel and cobalt mine on a screen. It is an exact digital copy of what it looks like in real life, so problems can be fixed before they become life-threatening. Since the beginning of the 21st century, this is what the 4th Industrial Revolution looks like. Its power to change things comes from the way it combines advanced production and operations techniques with digital technologies to make connected businesses that use data to drive smart actions in the real world.

"It's the most significant structural shift in the previous two centuries and a half — a transformation of scale, scope, and complexity unprecedented in human history," adds von Scheel.

Utilizing recently developed technologies, such as robotics and artificial intelligence (AI), quantum computing, additive manufacturing, and the Internet of Things, smart and connected technologies are being integrated into businesses, assets, and even people in the case of wearable devices. This is done in order to take advantage of newly available capabilities (IoT). However, according to von Scheel, technology is

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the means and not the end for businesses that wish to take full use of the potential offered by Industry 4.0.

According to him, "all of these technologies ultimately have one function only," and that purpose is to produce value.

When the digital, physical, and virtual worlds are brought together, it not only generates prospects for development and productivity that are unmatched, but it also reframes the competitive landscape with innovative goods and service models. According to von Scheel, the capabilities of Industry 4.0 will allow production systems to become up to 35% faster and 30% more efficient. This will enable "mass customisation," which is the ability to make individualised products at a speed and on a scale that was never previously feasible.

To put it another way, the benefits of Industry 4.0 are multidirectional, meaning that they stretch out to the final consumer as well as deeply into production operations and all along the value chain.

According to von Scheel, "It's about producing the next generation of operational excellence" by utilizing intelligent automation, connectivity, and operational alignment, hence altering the design, manufacture, and maintenance of goods and industrial systems. What will emerge as results of all of this are ecosystems that are interconnected? Already, we are able to witness that. And businesses who capitalize on these opportunities will have a distinct advantage over their competitors.

METHODS AND MATERIALS
Data gathered from secondary sources:
The Growth of Information and Communications Technology and Its Effect on the Availability of Workers in Saudi Arabia

Spending on information and communication technologies (ICT) has been growing at a rapid pace in Saudi Arabia as a result of the increasing acceptance of these technologies by a growing number of individuals as well as companies. In 2014, the Saudi information and communications technology market reached a value of more than 111.79 billion Saudi riyals, solidifying the status of the Kingdom as the region's largest spender on ICT.

1. The spending of individuals accounts for more than half of the Kingdom's total investment in information and communications technology, and the expansion of this market segment is primarily being driven by an increased demand for mobile and portable devices such as smart phones and tablet computers.
2. The CITC's ICT Report on Mobility in Saudi Arabia revealed that an extremely high percentage (82%) of mobile users in the Kingdom had access to either smart phones or tablet computers. This information was provided by the CITC.
3. The Kingdom of Saudi Arabia presently has nearly 8 million people using Facebook, over 1 million people using LinkedIn, over 5 million people using Twitter, and over 90 million people viewing videos on YouTube each day.
4. The demand for mobile and portable devices is increasing as a result of the explosive development in the usage of applications and social media, as well as the requirement for constant access to communication networks and applications. Both the governmental and commercial sectors in Saudi Arabia are significantly expanding the amount of money they are spending on information and communications technology. Over the course of the previous few years, there has been a considerable increase in the amount of money spent on computing devices, business networks, server and storage systems, and application software.

These days, there is an ever-increasing need for services that are associated with the planning, installation, and upkeep of these systems. The volume of enterprise data has increased at a rate that has never been seen before as a direct result of the explosion in the number of devices, systems, and applications. These reasons, along with the requirement for more communication and collaboration, have contributed to an increase in the demand for enterprise telecommunication services, as well as for connection and bandwidth.

This rise in spending on information and communications technology will lead to the creation of new positions, which, in turn, will require a sizable local labour force in order to be filled.

The Repercussions of a Scarcity of Skills

It is possible for a lack of skills to result in decreased efficiency as well as increased expenses, which can in turn erode competitiveness. More than forty percent of the companies that were polled by CITC agreed that a lack of information and communications technology (ICT) skills in Saudi Arabia has a significant impact on ICT operations, and forty-four percent of those companies said that a lack of ICT skills has a significant bearing on the operations and performance of wider organizations.

The lack of available talent will make it difficult for businesses and industries that rely heavily on information and communications technology to expand.

Building a foundation for long-term success in the information and communications technology sector requires the existence of a solid national pool of

talented ICT experts. In Saudi Arabia, there is a shortage of skilled ICT experts, which hinders both local telecommunications operators and IT providers from growing their operations, as well as foreign ICT businesses from establishing a presence there. Because there is not a local workforce in the field of information and communications technology that is large enough to meet the demand, there will be growing pressure to bring in people from other countries.

A Look at the Factors That Influence the Demand for Local Jobs

An Initiative to Recruit Saudi Citizens to Work in the Information and Communications Technology Sector

Expats make up a significant portion of the workforce in the information and communications technology sector in the Kingdom. It is anticipated that the implementation of Nitaqat legislation will convince firms to hire a greater number of Saudi citizens. It's possible that further raising the share of Saudi nationals working in the information and communications technology sector will take some time because it requires:

- Training a number of workers who are currently working in other fields, and facilitating their movement into ICT jobs;
- Training cadres who are unemployed on the necessary skills for entry into the ICT sector.
- Increasing the number of Saudi students who major in information and communications technology (ICT) specialties.

In the meantime, however, the shortage could result in difficulty and delays in hiring, as well as possibly some short-term salary inflation as businesses compete with one another to bring on board the best and most suitable Saudi local ICT workers. In addition, the shortage could result in some salary inflation. On the other hand, it is anticipated that in the long run, the three projects that were described above would result in the creation of a Saudi local ICT workforce that is even larger and more capable, and will eventually minimize the consequences of salary inflation.

Higher education institutions, such as universities and training institutes, play an essential part in the process of equipping persons with the necessary skills and expanding the size of the workforce in the information and communications technology sector. These educational establishments in Saudi Arabia are, on occasion, subjected to criticism on the grounds that their programmes do not adequately address the requirements of the relevant industries, and that as a consequence, their graduates are not adequately prepared for employment. This critique of institutions of higher education continues to be prevalent in the majority of countries. In addition, there is a school of thought that maintains that the quality of the information and communications technology (ICT)

education offered at the universities ranked lower on the hierarchy is, on average, inferior than that offered at the premier institutions. It is essential to have the understanding that educational institutions cannot, on their own, completely solve the shortages of skills in the labour market. It will be to the mutual benefit of the Kingdom's higher educational institutions and its businesses to collaborate closely with one another in order to train and develop skilled workers in the workforce.

The Government of Saudi Arabia's Emphasis on Skill Development

The National Communications and Information Technology Plan (NCITP), which was released by the Ministry of Communications and Information Technology, acknowledges the difficulty of acquiring sufficient information and communication technology (ICT) skills (MCIT). "prepare the Kingdom's manpower for information and communications technology jobs by ensuring proper utilisation of information and communications technology at all levels of education and training, and through the provision of qualified, trained human capabilities in various information and communications technology disciplines," is one of the stated goals of the NCITP.

Nationality

Saudi nationals make up about half of the total workforce in the information and communications technology sector. However, the majority of Saudi Arabia's information and communications technology specialists work for large companies (those with 250 or more people), with the Saudi government being the country's top employer. The percentage of Saudi citizens working for small and medium-sized enterprises (SMBs) is significantly lower than average.

Employment Tenure

In Saudi Arabia, full-time employees make up the bulk (82%) of the country's information and communications technology (ICT) workforce. The other employees are either outsourced8 or on contract. In comparison to when CITC carried out its previous skills evaluation in 2009, outsourcing of information and communications technology expertise is now an increasingly frequent practice among Saudi enterprises. Many of the companies that were contacted for this article have recently decided to outsource some or all of their operational and/or maintenance responsibilities, while continuing to house their internal information and communications technology (ICT) teams in charge of their most important and important functions.

Perspectives on the Labor Market

According to the data provided by the Saudi Central Department of Statistics and Information (CDSI), the entire size of Saudi Arabia's economically active population is around 11.29 million people.

It is estimated that there are currently roughly 165,000 people working in the field of information and communications technology in Saudi Arabia. This accounts for close to 1.5% of the entire economically active population. Over the course of the next three years, the size of the workforce in the information and communications technology industry is anticipated to expand at a compound annual growth rate (CAGR) of 9%, reaching roughly 213,000 ICT professionals in 2017. In the future years, rapid rise in spending on information and communications technology in Saudi Arabia will result in the creation of a significant number of new jobs.

The three most popular specializations are ICT support and helpdesk executive, systems engineer (including computer networking engineer), and software developer. ICT support and helpdesk occupations are expected to experience a larger rate of job growth over the next few years in comparison to jobs in other specialized fields. There is a subgroup of employment opportunities that are anticipated to have comparatively higher demand while also being substantially more challenging to locate and employ candidates for. Among them, the most attention must be paid to the development of specialisations such as software application developer, software applications manager, consultant, and design engineer, in addition to ongoing efforts to monitor the demand for other specialised positions as well.

In a similar vein, a certain group of talents is anticipated to have comparatively higher demand, in addition to relatively greater difficulty in both finding and hiring qualified candidates. It is necessary to place a greater emphasis on the development of skills related to cloud infrastructure, software development, security, mobility, information and communications technology strategy, information technology administration, and helpdesk and support.

The necessity of conducting the research

The fact that people's skills are rendered outdated by digitization has an effect on the value of human capital (Rana & Sharma, 2019). Industry 4.0 faces the challenge of high unemployment, despite the possibility that it will open the door to the creation of new work prospects (Naudé, 2019). Since there is no way to stop the implementation, it is critical that HR professionals keep up with the latest developments in their sector in order to keep their organizations informed about the change (Lusarczyk, 2018). It is essential to figure out how human resources professionals can play a role in driving solutions for the HR discipline as Industry 4.0 gets off the ground. As a direct outcome of industry 4.0, managers of human resources are tasked with the responsibility of regulating the HR practices of their companies, which will be influenced by cutting-edge technology and

technical instruments. (Jesuthasan, 2017). As a result of technological disruption, low-skilled employment that include mundane tasks may be taken over by robots and automation instead of humans. (Naudé, 2019) Jobs A growth in technological competence will not only result in an increase in unemployment, but it will also affect the nature of work and the workforce as a result of underlying technical trends that drive job automation. These trends are driven by computerization and other forms of job automation (Rana & Sharma, 2019; Shava & Hofisi, 2017). The lives of employees, in addition to their work, are included in human resources. It is essential to have an understanding of the ways in which industry 4.0 will influence not only people and the occupations they hold but also the very nature of HR duties and the activities that are associated with them. It is essential to do an analysis of the function that HR specialists will play in this upheaval. As a result, the objective of this study is to ascertain how aspects connected with the fourth industrial revolution will have an effect on the function of HR specialists.

DISCUSSION
Best and most cutting-edge HR practices

The past several years have seen a number of shifts in HR practices, but employees are also undergoing change, seeking for firms that offer a better work-life balance as well as a greater sense of fulfilment.

As a consequence of this, the employee retention rate of any HR department that is reluctant to make changes to either the work environment or the policies of the company is likely to be low. One that strikes a balance between productivity and employee pleasure is the kind of workplace that you want to establish, and the best cloud HR software can aid you in defining the kind of workplace that you want to build. Human resource management experts are aware of the changing dynamic environment. Take a look at the following list for more information on the organization's creative HR techniques for boosting employee enthusiasm in the workplace.

1. Training and Improvement
a. Counseling for mental health

In our nation, there is still a stigma attached to having conversations about one's mental health. A person's poor self-esteem can be caused by a number of factors, including bullying, discrimination, and stress at work. One of its severe effects could occasionally take the shape of a distressed worker taking their own life. Everyone in India now has the legal right to be protected from any form of abuse, regardless of whether it is verbal, physical, or emotional, as a result of the passage of the Mental Health Care Act in 2017 and its subsequent entry into force in May of 2018. The HR department believes that every worker should have the right to work in an appropriate manner and should be

protected from being subjected to behavior that is humiliating or cruel.

b. Virtual team activities

Cloud-based human resources departments are becoming more and more active in a wide array of online pursuits. The employees have the opportunity to have a more in-depth comprehension of their fellow workers. In addition to being used for holding meetings and conducting interviews, cloud-based payroll software is also being utilized in the process of settling internal problems.

c. Up skilling and training programmes

The process of enhancing the knowledge and abilities of an employee by providing them with further training is known as up skilling. It's possible that the HR department will determine that it will be more cost-effective to train current employees so that they can add greater value to the firm rather than hire a new employee. They will be able to stay current thanks to this training, which will also give them more flexibility in their career.

2. Job Design
a. Customizing job structure

Which of these would be more advantageous for your company? Which method of assigning a worker to a job or a person to a job is more efficient? The most recent trend in human resources management provides employers with the option to adjust job responsibilities in accordance with an employee's level of expertise and experience. Even persons with extraordinary abilities are able to work to the best of their ability because to this.

b. Culture of progress in the workplace

A progressive company places a high importance on innovation at work, as well as flexibility, equal opportunity, and the incorporation of fresh concepts. It is inevitable that it will flourish and achieve even higher levels of success and advancement. This innovative approach to HR shows employees that they are valued by the company and recognizes their successes.

c. The ease with which Remote working

The flexibility to work from home or another remote place is one of the factors that has increased interest in the profession. Work performance is perhaps the most important factor to consider, and if an employee is hampered by their commute, they will never be able to put out their best effort for the company. When an employee works from home, they are subject to fewer interruptions and have less anxiety about having to commute. They now have the ability to be happier and more productive.

3. Performance appraisal
a. Recognition from peers by peers

One of the most forward-thinking human resources techniques is called peer-to-peer recognition. It is the act of recognizing the capabilities and potential of another worker in the company. It's amazing how much motivation you can get from a simple compliment from a colleague. By fostering a stronger sense of community among employees, this strategy helps boost both morale and self-esteem.

b. Leadership based on ethics

The days are long gone when managers were notorious for their poisonous behavior and for abusing the authority that they had. Now that the trend has changed, the manager's perspective has also shifted. Under the new HRM, bosses have taken on the role of leaders, and they now urge employees to communicate openly with one another. They are driven by their values and handle concerns in a respectful and fair manner. This kind of ethical leadership will continue to flourish, which will ensure that the organization will have a better percentage of success overall.

c. Accepting innovation and adapting to the new standards of automation

Trying to run a business using the same methods that have always been used is no longer competitive. HR is adapting to new business practices as the trend in the business world shifts. At the moment, it places an emphasis on creative concepts that make use of various forms of technology. Utilizing the best cloud-based payroll and human resources software is a wonderful illustration of automation in action.

d. Contracts of employment and legal responsibilities

Many smaller enterprises in this country take the written employment contract as less of a serious matter than it should be. One of the primary reasons for this is because India's current labour standards are not being successfully enforced, and this is one of the key factors. In spite of this, the cloud-based payroll and HR department has made this a normal operation for the purpose of developing a pleasant working connection with employees.

The modern HR department requires all employee contracts to be written down and adhered to. This document outlines all of the rules, policies, and processes governing pay, time off, and attendance. In the event that the employee's interests and those of the company are in conflict with one another, the conditions of the employment contract would take precedence.

e. Improved Management of One's Talents

The author makes the following forecasts for the future of talent management: "more effectively making use of the skills, talents, and educational and training systems of the people. "People will be more

empowered in their professions," and HR professionals will be obliged "to be more cognizant of what the next person's talents are," as a result of the opportunity to work remotely ".

CONCLUSION

The key to success in HR innovation is accurately predicting future needs and determining the most effective ways to meet those needs in the here and now. It has many facets, never stops evolving, is always moving forward, and is receptive to new concepts at all times.

When all of these components are present in your training solution, you will have the ideal combination of features to answer the expectations of the modern employees' learning model, which is not a simple undertaking by any stretch of the imagination. As a corporate trainer, there are many factors to take into consideration; however, the end result of an efficient learning experience that results in a greater return on your training investment and the benefits it will bring to your business are well worth the investment in the correct solution.

This article explains how firms may leverage their personnel and ensure their success and survival in this period of rapid technological development by following the guidelines outlined in this article. The upper management team needs to get themselves ready for the newly reimagined HR function that has come about as a result of innovative HR practices. This study has enough information to pique the interest of professional managers, researchers, and students who are interested in organizational behavior, workplace circumstances, and human resource management.

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