

Future work: a qualitative review

CM SCHULTZ

Department of People Management and Development
Tshwane University of Technology

schultzcm@tut.ac.za

Abstract

Setting the stage for future work leaves us with great uncertainty but preparing for future work is still inevitable. New demands and challenges such as automation, digitisation and millennials are some of the major considerations in this preparation. Reactive silo function of HR cannot be tolerated anymore. The purpose of this article is to investigate future work in developed and developing countries as well as to obtain recommendations for top and line managers as well as Human Resource (HR) managers to prepare for future work.

A qualitative research method was used to gather and analyse the information. The major themes that related to future work were leadership, innovation, technology, foresight, collaboration, engagement, people management, HR leadership and relationship management. The implication of these findings is that the time to prepare for future work is now. The unique contribution of this research lies in the fact that the study was conducted from the perspectives of futurists and not from management, HR or the employees. It was brought to the front that the contribution to the body of knowledge is on how developed countries, managers and HR managers should be comprehensive in preparing for the future of work.

Key phrases

developing countries; developed countries; future management; future HR management

1. INTRODUCTION

Futuring is the practice of strategic foresight (Hames 2016:88). Velthuis (2014:2) states that futuring is all about imagining the future.

All futures activities, from forecasts to visioning, causal layered analysis to the Millennium Project, have a direct impact on the present: they can change peoples' perceptions, make

them aware of dangers and opportunities ahead, motivate them to do specific things, force them to invent or innovate (Sardar 2009:184).

What really matters is the influence futures studies has now. Automation, digital platforms, and other innovations are changing the fundamental nature of work. Understanding these shifts could help policymakers, business leaders and workers move forward. The twin forces of technological change and globalisation are reshaping the global economy in multiple and important ways (Chandy 2016:6). Hames (2016:92) is of the opinion that foresight must shift from its obsession with technology and uncomplicated issues to encompass a broader mix of “higher-altitude” observations about the purpose of humanity, the provisioning of resources to accommodate the needs of an escalating global population, and design criteria for social change.

2. PROBLEM INVESTIGATED

Foresight can no longer simply be about the future. It must pull information from past and future states. In this way, the field of strategic foresight itself can be expanded, becoming genuinely transformative and therefore strategically more significant (Hames 2016:92). In each country, success in the future workplace – for both employers and employees – will depend on the ability of a country, managers and human resource (HR) managers to harness and embrace rapid acceleration of technology and change. There is a big difference between developed countries and developing countries, as developed countries are self-contained and flourishing while developing countries are aspiring to become developed countries.

Preparing for future work is not only necessary; it is inevitable (IBM 2016:12). The opportunity exists for the HR discipline to step out of a reactive mind-set and reinvent itself to own all people-related processes to accommodate the future workplace (Schultz & Van der Walt 2015:161). The questions then arise what future work entails in developed and developing countries as well as how managers as well as HR managers should prepare for future work.

3. RESEARCH OBJECTIVE

The purpose of this research was to provide a qualitative review of future work. The three-fold objectives of the study on which this article reports were, *firstly*, to investigate future

work in developed and developing countries; *secondly*, to investigate recommendations for top and line managers to prepare for future work; and *lastly*, to investigate recommendations for HR managers to prepare for future work.

4. LITERATURE REVIEW

An overview of the most prominent literature on the research construct is provided.

4.1 The future of developed and developing countries

Countries with low industrialisation and a low human development index are termed developing countries. Surbhi (2015:Internet) mentions that developed countries provide a free, healthy and secure atmosphere in which to live whereas developing countries lack these. Developed countries are also known as 'advanced countries' or 'First World countries', as they are self-sufficient nations. Australia, Canada, France, Germany, Italy, Japan, Norway, Sweden, Switzerland, United States are examples of developed countries (Surbhi 2015:Internet; United Nations Secretariat 2014:146).

Surbhi (2015:Internet) also mentions that countries that are going through the initial levels of industrial development along with low per capita income are known as 'developing countries' and these countries come under the category of 'Third World countries' or 'lower-developed countries'. China, Colombia, India, Kenya, Pakistan, Sri Lanka, Thailand, Turkey and South Africa are examples of developing countries (Surbhi 2015:Internet; United Nations Secretariat 2014:146).

The resulting combination of high public expectations and low income-producing capacity is and will be a major challenge for developing economies everywhere (Rodrik 2015:Internet). "Automation implies both deskilling and the need for new skills. For many developing countries, nurturing basic skills remains the most urgent priority" (Chandy 2016:27). Developing-country governments have an important role to play in creating an environment for economic growth. Auguste, Manyika and Remes (2011:34) suggest that infrastructure and local services should be increased by applying clear ground rules.

To improve learning outcomes and prepare students for the world of work, countries must develop a system to determine current learning levels and future learning aims (Chandy 2016:28). Annunziata (2015:5) is of the opinion that "the accelerating pace of digital-

industrial innovation can help developing economies leapfrog existing technologies and more quickly gain competitiveness in the global marketplace”.

4.2 Future management

It is predicted that, sometime in the near future, machine intelligence will surpass human intelligence, a point in time known as “the singularity” (Chandy 2016:22). Rhisiart, Störmer and Daheim (2016:in press) mention that it is essential to understand the role of the ‘foresight frontman’ (a high-profile and esteemed individual) who is able to engage audiences widely. According to Annunziata (2015:1), at General Electric, the new wave of industrial innovation is called “the Future of Work” and is driven by three interrelated and mutually reinforcing trends:

‘The Industrial Internet’, which merges big data, cloud-based analytics with industrial machinery, resulting in greater efficiency.

‘Advanced Manufacturing’, which weaves design, product engineering, manufacturing, supply chain, distribution, and servicing together into one cohesive intelligent system, delivering speed and flexibility at lower costs.

‘The Global Brain’, which is the collective intelligence of human beings across the globe, digital communication, crowdsourcing, open collaboration, and a fast pace of innovation.

4.3 Future HR management

Chandy (2016:10) states that “by linking workers and firms to the information they need, digital job matching platforms can both help markets clear more quickly and induce dynamic responses, including in the content of education programs and in the investment decisions of firms and workers”. According to Boudreau (2015:46), the operating models of HR must “reflect structures that are networks not just hierarchies, work that is made up of globally sourced projects not just jobs, workers who are engaged as free agents not just regular employees, total rewards that are individualised and segmented not just consistently applied to all, and constant agility not just episodic change”.

HR managers should be able to prepare staff to gain the necessary skills for future work. The Institute for the Future (2011:8–12) suggests sense-making, new literacy and virtual collaboration as some of the important skills for the future workforce. Weng (2015:421)

mentions that skills, such as adaptive thinking, social intelligence and cross-cultural competence, are necessary to succeed in the future work. According to Buckingham and Coffman (2005:84), in a Gallup study, three categories of talent were identified: striving (why a person is motivated), thinking (how a person makes decisions) and relating (whom a person trusts or ignores and with whom he or she builds relationships).

5. RESEARCH METHODOLOGY

A qualitative research methodology was used in this research. Flick (2009:472) describes qualitative research as research that is interested in analysing the personal meaning or the social construction of issues, events or practices through the collecting of non-standardised data and the analysis of text and images rather than numbers and statistics.

5.1 Research design

An exploratory research approach was followed in line with Burns and Grove (2001:374), who describe the purpose of exploratory research as gaining new insights, discovering new ideas and increasing knowledge of the phenomenon. According to Polit, Beck and Hungler (2001:19), explorative research is undertaken when a new area is being explored or when little is known about an area of interest.

The presence of a basic system of ontology, epistemology and axiology with which researchers approach their research is widely accepted (Guba & Lincoln 1994:105; Creswell 1998:74–77; Patton 2002:266). Ontology is the social world, which is patterned and predictable, or the social world, which is continually being constructed through human interactions and rituals, while epistemology is the basic assumptions about what we can know about reality, and about the relationship between knowledge and reality (Nieuwenhuis 2014:4).

From an ontological point of view this research was conducted within the constructivist research paradigm. Constructivists believe, “knowledge and truth are constructed by people and do not exist outside the human mind” (Duffy & Jonassen 1991:9). Bloomberg and Volpe (2008:9) and Lapan, Quartaroli and Riemer (2012:113) concur and argue that the central assumption of constructivism is that reality is socially constructed in that individuals develop subjective meanings of their own personal experience, and that this gives way to various meanings conveyed in the social, cultural and historical context in which their lives are

embedded. Reeves and Hedberg (2003:32) note that within epistemology, the interpretive paradigm is concerned with understanding the world as it is from the subjective experiences of individuals.

This research adopted a constructive interpretive approach, which comprised the specific field experiences, perceptions, views and evidence as well as the multiple realities of experts in labour relations in the public service with regard to the required competencies to be successful in the field that is presented here. Ihuah, Kakula and Eaton (2014:946) mention that axiology questions on the roles values play in research choices, as well as more emphasis on the value judgement capability of a researcher.

5.2 Research participants

An invitation to participate in the study reported here was placed on the website of the Association of Professional Futurists (APF). Futurists who were members of said association indicated their interest and were included in the study (i.e. purposive sampling). Snowball sampling was used to supplement the sample (Babbie 2010:105) and resulted in the participants representing several futurist associations.

The snowball sampling method resulted in participant referrals, which increased the diversity of the sampling. As a qualitative approach with non-random sampling was employed, generalisation is not possible. The data is however presented with rich descriptions to allow for transferability. The inclusion criteria for respondents were as follows: university degree and a minimum of one year's experience as a futurist. Saturation of data was reached after the 30th respondent.

The biographical information of the respondents was as follows. The respondents indicated that 14 of them lived in a first world country, 13 were from South Africa and three from a developing country. It was reported that five of the respondents had 1–5 years' experience as a futurist, eight had 6–10 years, three had 11–15 years, five had 16–20 years, two had 21–25 years, one had 26–30 years, three had 31 years and three were unknown. There were 12 respondents with a PhD qualification, 12 with a master's degree, 2 with an honours degree, three with a B degree and one was not known. Lastly, 15 members were affiliated with the APF, six with the World Future Society, six with the Millennium Project, two with the World Futures Studies Federation and two with the Institute for Future Studies.

5.3 Measuring instrument

The futurists provided their views of the future of work by completing the following three open-ended questions:

How do you think the future of work differs between developed and developing countries?

Which recommendations would you suggest to assist top management and line managers to prepare for the future world of work?

Which recommendations would you suggest to assist human resource managers/people managers to prepare for the future world of work?

5.4 Trustworthiness of the data

Bless, Higson-Smith and Sithole (2013:236) state that trustworthiness involves the following elements: credibility, dependability, confirmability and transferability. Credibility was established through peer debriefing and member checks (Lincoln & Guba 1985:301–316). The study used a transparent account of the ATLAS.ti data analysis program, together with a systematic, comprehensive and exhaustive audit trail of the analysis of data, to ensure that the research process followed was logical, traceable and clearly documented to ensure dependability (Sinkovics & Alfoldi 2012:14).

Zhang and Wildemuth (2009:314) state that confirmability is determined by checking the internal consistency of the research product. In the present research, this was done by checking the data, the findings, the interpretations and the recommendations. Transferability was provided by obtaining data sets and descriptions that are rich enough so that other researchers will be able to make judgements about the findings and transferability in different settings or contexts as suggested by Elo, Kaarianinen, Kanste, Polkki, Utriainen and Kyngas (2014:2).

5.5 Data analysis

Tesch's (1990:142–145) method of qualitative content data analysis (1990:142–145) was applied in this study to analyse the data collected by way of the open-ended questions about future work. Data was coded and categorised and themes were developed. Deductive coding derived from relevant theory was used. During data analysis, other themes and

categories surfaced from the data and inductive coding was therefore also used. ATLAS.ti (Version 7.0) was used for data analysis in this study.

6. FINDINGS

The findings are presented according to the three-fold objectives of this study, namely to investigate future of work in developed and developing countries, to make recommendations for top and line managers, and lastly, to make recommendations for HR managers.

6.1 The future of work in developed and developing countries

To address the first purpose of this study, namely to investigate future work in developed and developing countries, the following themes were identified, as reflected in the quotes in Table 1. All quotes are provided verbatim and unedited.

TABLE 1: Themes and verbatim: future of work in developed and developing countries

Theme	Verbatim
Leadership	<p>‘Selected under developed countries, whose leaders are more foresight oriented and more democratic in their policies and approaches to economic and social development are likely to benefit from the broader global trends as early adopters of technology.’ (Participant 2)</p> <p>‘Leadership training and experience as well as a commitment to releasing the ingenuity of every person is basic to moving from developing to developed.’ (Participant 15)</p> <p>‘how national leaders and planners in less developed countries will have to think about the effect of various technological innovations, particularly in countries in which manual labor in support of developed worlds has been a mainstay.’ (Participant 24)</p>
Innovation and technology	<p>‘The developed countries will remain on the forefront of innovation and advancement around which the future of work will take shape. In this regard, the developed countries will lead on the future of work while the developing countries will play the support role, i.e. they will not play a significant role in determining the direction and nature of the future of work and will tend to follow the innovation and advancement of the developed countries.’ (Participant 4)</p> <p>‘Developed countries use more artificial intelligence and automation;</p>

Theme	Verbatim
	<p>developing countries are still building the underlying infrastructure.’ (Participant 5)</p> <p>‘Developing countries will benefit from “leapfrogging” as new concepts and technologies appear. Many countries could not supply telephone service to residents, simply because they did not have the infrastructure – poles, lines, terminals, etc. Cell phones leapfrogged over the old technology as the poles and lines were replaced by cell towers.’ (Participant 8)</p>
Education	<p>‘As the dividing line will lie in education, developing countries might benefit from digital learning, online libraries and innovative formats and validation of courses and degrees, to deliver a highly skilled, extremely mobile protagonists to the global market of talents.’ (Participant 13)</p> <p>‘the level of education and capacity building will be a major determinant on how people work in developing countries thus creating a difference.’ (Participant 18)</p> <p>‘community colleges and universities will have a big role in promoting entrepreneurship and innovation both of which have the potential to create jobs.’ (Participant 11)</p>

Source: Author’s own developed table

It is clear from the extractions above that leaders should be trained to understand foresight and technology. The rich data above indicates that developed countries are at the forefront when it comes to innovation and technology but that the discrepancy will become less in the future. Education seems to be the dividing line between developed and developing countries. Entrepreneurs should be developed and promoted by tertiary institutions.

6.2 Preparation for future work of top and line managers

To address the second purpose of the study, namely to investigate the recommendations for top and line managers to prepare for future work, the following themes were identified, as reflected in Table 2. All quotes are provided verbatim and unedited.

TABLE 2: Themes and verbatim: preparation for future work of top and line managers

Theme	Verbatim
Foresight and future-fit	<p>Use foresight as a key part of strategy to lead or be prepared for new/changing market opportunities and disruptions in traditional value chains (related to future of work changes).’ (Participant 1)</p> <p>Firstly, management on all levels should have a thorough understanding of their transactional environment, i.e. the environment in which their specific business operates and over which they have some form of control. Secondly, they also need to develop a comprehensive understanding of the contextual environment over which they have no control, i.e. the STEEP [social, technological, economical, environmental and political] areas and its possible impact on their transactional environment. They, therefore, need to have a holistic approach with regard to creating knowledge of the complete environment.’ (Participant 4)</p> <p>‘They need to become future-fit. More focussed on what is ahead than behind, and learning the skills of thinking like a futurist and dealing with disruptive change.’ (Participant 25)</p> <p>‘Triple-bottom line approach will become more important.’ (Participant 3)</p>
Technology	<p>‘understand technology and use technology and communication for the company instead of restricting it.’ (Participant 16)</p> <p>‘Study artificial intelligence and prepare humans for smart creative work.’ (Participant 5)</p> <p>‘Prepare for a technological transformation. Become laboratories where people and innovate, make mistakes, learn and become invigorated as they try new and novel ways to add value.’ (Participant 7)</p> <p>‘In large bureaucracies struggling or seeking to stay relevant in arenas being transformed by new technologies, I would advise ensuring that the structures, processes, policies of the organization are aligned with our best knowledge about how to produce efficient, productive, innovative institutions – breaking down silos, encouraging and rewarding innovation at all levels, responding to new values about job satisfaction.’ (Participant 24)</p>
Creativity	<p>‘Become creative. A great deal of HR appears to be the application of old methods to technology without the benefit of creative thinking.’ (Participant 8)</p> <p>‘Work—as creative labor, and as economic activity, can be construed in many ways, and we should perhaps be open to reconstructing the</p>

Theme	Verbatim
	relationships between work, the provision of public services and human rights, and economic activity as the foundations of economies evolve.' (Participant 24)
Collaboration and engagement	<p>'Top management could close partnerships with academies and technical institutes, stimulating young talent to emerge within frameworks of corporate operational excellence. At the same time, critical thinking universities should be privately supported but left totally free from any applied KPI [key performance indicator], in order to generate new visions and alternative models.' (Participant 13)</p> <p>'Listen to the voices of all people, including staff, community, and employees. Encourage idea sharing, individual achievement, and teamwork. Recognize each person for the positive, constructive work they do and ideas they generate. What we recognize can contribute to a self-fulfilling prophesy for the future of an organization or industry.' (Participant 15)</p> <p>'With the future world of work moving to a more collaborative way of getting things done, top managers and line managers should prepare for this eventuality. What does it take to collaborate: transparency, integrity, humility and creativity to name a few. Thus the focus of these managers should be on these soft skills.' (Participant 21)</p>
People management	<p>'Be flexible to direct "gig employees" [labour market that is characterised by the prevalence of short-term contracts or freelance work as opposed to permanent jobs] and "Hollywood model" [a project that is identified and a team is assembled to complete the task and then disbands]. (Participant 11)</p> <p>'they should hire critical thinkers and ensure that they have the right social intelligence and emotional intelligence to play well with others.' (Participant 10)</p> <p>'Retention and knowledge transfer are keys to success. As far as possible, inform the workers about changes coming up. Be transparent.' (Participant 22)</p>
Management competencies	<p>Among keys to sustainability are adaptability and resilience. Simply defending the status quo is nothing more than a ticket to obsolescence.' (Participant 15)</p> <p>'Understand new values and life style ... Be open and inclusive instead of command and control.' (Participant 16)</p> <p>'Obtain better insight into the fields of Complex Adaptive Systems, agility, resilience, self-organisation, emergence, enabling constraints and Holocracy [a complete self-organising system].' (Participant 20)</p>

Source: Author's own developed table

The futurists mention that triple-bottom line approach consisting of social, environmental and financial issues are the three parts that exist in life to evaluate performance in a broader perspective. Managers must use foresight techniques, such as scenario planning and scanning the environment by using the STEEP technique to prepare themselves for future work.

From the above quotes, it is evident that managers must embrace and understand technology, such as artificial intelligence and automation, in order to be prepared for future work. Top and line managers must also encourage innovation. Managers must become creative in such a way that they will be able to rethink HR as well as other areas in the future workplace. Most of the futurists mentioned collaboration and engagement. This was an indication that line and top managers need to be involved actively with all stakeholders in order to prepare for future work.

The fact that people management is a theme shows that managers need to be the stewards of the employees and not shift this responsibility to the HR manager. Resilience, agility, adaptability, self-organisation, systems thinking such as complex adaptive systems, holocracy, being open and inclusive, are essential future management competencies.

6.3 Preparation for future work of HR managers

To address the third purpose of this study, namely to investigate the recommendations for HR managers to prepare for future work the following themes were identified, as reflected in the quotes in Table 3 below.

TABLE 3: Themes and verbatim: preparation for future work of HR managers

Theme	Verbatim
HR competencies	<p>Communicate, communicate, communicate. That includes both keeping people informed and constantly listening to and responding to their ideas and their needs.' (Participant 15)</p> <p>'Human Resources managers need to become more business literate, they need to understand the "core" of the business.' (Participant 3)</p> <p>'Learn to anticipate, and be flexible.' (Participant 26)</p>

Theme	Verbatim
HR practices	<p>'They need to actively seek out diversity – not from a BEE [black economic empowerment] scorecard type of view, but specifically looking for multiple – and even conflicting – worldviews.' (Participant 25)</p> <p>'Human resources should continually develop a talent pool and this pool should extend far beyond regional boundaries. Talent is much more likely to travel now than in the past, and incentives are often more than merely financial.' (Participant 23)</p> <p>'Move away from mindsets mired in linear physics and focus on mindsets founded in Complex Adaptive Systems.' (Participant 20)</p>
HR leadership	<p>'These are the folks who can really lead the future of work. HR needs to stop feeling sorry for itself and act like the thought leaders and change agents that it truly is. HR needs to step up!' (Participant 12)</p> <p>'Human resource managers and those who work in human resource department plus those involved in the process: Should model the leadership styles and behaviors that will create a climate and culture in which ideas will flourish.' (Participant 15)</p> <p>'Strong narratives about purpose and mission help people and communities weather transitions. Developing and sustaining strategic narratives that help members of a working community – a firm, a sector, a department, have a strong sense of purpose and participation in an unfolding story is an important role for HR.' (Participant 24)</p>
Preparing staff	<p>'train people in design thinking.' (Participant 21)</p> <p>'Begin understanding what kinds of old and new/future skills will be needed in changing work/labour/economic futures.' (Participant 1)</p> <p>'Help all employees become strategic thinkers so they can help their organisation respond quickly enough to respond to the opportunities that come their way so their company can stay profitable.' (Participant 14)</p>
Detecting changes	<p>'Secondly, they should regularly review the scanned information received to determine the speed, scope and significance of change regarding the future of work as it relates to their specific business environment. Depending on their analysis, they should make the necessary adjustments to their business model so that they are well prepared for possible change and to develop a competitive advantage over rivals.' (Participant 4)</p> <p>'They need to conduct horizon scanning exercises so as to monitor and detect changes in their industries, the changing needs of their</p>

Theme	Verbatim
	customers, suppliers, distributors and the regulatory environment both locally and globally.' (Participant 2)
Rethinking HR	<p>'A great deal of their portfolio will be automated or will be eliminated in the simplification induced by digitalization. Hence, it is important to define what the unique contribution of the function is. This might vary from company to company, and be outsourced in the form of training, consulting and other forms of specific packaging of knowledge, skills and the facilitation of processes.' (Participant 13)</p> <p>'HR Professionals need to look at the people side of this equation and make sure that they are hiring the right people to support organizational growth, e.g. they cannot afford to hire anyone without computer skills.' (Participant 9)</p>
Relationship management	<p>'While the workplace and job groups were usually dominated by certain age-groups with certain levels of experience, the current workplace has a demographic mix of different generations working together. Management of this multi-generational workforce is crucial for a harmonious environment.' (Participant 22)</p> <p>'Whereas earlier, formal employment was mainly male dominated, the current environment has seen an increased feminisation of work. These women have to balance between formal work and the care economy (domestic work). Managers therefore are finding themselves having to allow greater work life balance.' (Participant 27)</p>

Source: Author's own developed table

From the above quotes it is clear that business literacy, communication, anticipation, flexibility and responding to needs as well as ideas are essential future HR competencies. It is evident that HR practices for future work are seeking out diversity, pay more attention to talent pools, understand complex adaptive systems, develop sophisticated people evaluation measures, and focus on well-being and social welfare of employees.

The futurists undoubtedly indicated that the HR manager must lead the future of work by creating an idea-sharing culture, having a strong sense of purpose, understanding what drives people and developing a strong feedback culture. The HR manager must prepare staff for future work by focussing on design thinking, strategic thinking and any other future skills. The HR manager must be able to detect changes in the environment by using techniques such as environment/horizon scanning to identify trends. The fact that the HR

manager must rethink HR is clear, and this can be done by embracing technology to determine how value can be added to future work instead of facing outsourcing. The HR manager must also be an example when it comes to relationship management because a pleasant atmosphere must be created for future work.

7. DISCUSSION

The three-fold purpose of the study on which this article reports, was firstly to investigate the future of work in developed and developing countries; secondly, to investigate recommendations for top and line managers to prepare for future work; and lastly, to investigate recommendations for HR managers to prepare for future work. In addressing the first purpose of the study, leadership, innovation and technology were at the forefront. Perhaps most important is the current shortage of skills and the relatively weak state of education systems in a number of developing economies that should be urgently addressed in order to create the pipeline of skills required by new technologies. Annunziata (2015:6) also found that digital innovations could help address this problem, as it can increase learning opportunities even in the face of limited school infrastructures and a limited number of teachers. Automation is likely to replace jobs even faster in developing countries (Chandy 2016:15).

Several themes featured in exploring the second purpose of preparing top and line managers for future work. These managers must have foresight and be future-fit. Sardar (2009:179) concurs that foresight implies action in the present, in the light of anticipated future states of affairs. All the futurists mentioned technology, which was a major theme, and creativity also featured. "Computerization will also create jobs, and highly skilled workers will be needed to work alongside technology.

In other words, it is likely that some jobs disappear and others will be created as a result of the same technological revolution" (Chandy 2016:24). This correlates with the findings of the present study. The theme collaboration and engagement agree with the findings by Schmidt, Becker and Bradley (2015:346–365) in that developing and engaging the workforce are essential in the future world of work. Managers need to manage people, as reflected in the study of Schultz and Van der Walt (2015:8) as well. Managers must also possess certain management competencies, such as adaptability, resilience and understanding systems such as complex adaptive systems and holocracy.

The third purpose of this study was to make recommendations to HR managers to prepare for future work. The HR manager should be an expert at manipulating big data, understanding and modelling trends, and knowing how to code to adjust algorithms. He or she should also be able to design work to combine technology, automation and human contributions optimally (Boudreau 2015:51). This was in agreement with the findings of this study, in that the HR manager should be technology-driven and able to handle big data.

HR practices and HR leadership must be future-orientated in order to prepare staff and detect changes. Rethinking by HR is essential, as was also found in the study by Schultz and Van der Walt (2015:160). HR must have extremely good relationship management skills. Gallup, in collaboration with Microsoft Partners in Learning and the Pearson Foundation developed a 21st-century skills index: collaboration, knowledge construction, skilled communication, global awareness, real-world problem solving, and technology used in learning (Moore 2016:234). These findings are in agreement with the findings of the present study.

9. MANAGERIAL IMPLICATIONS

Technology plays a critical role in the success of future workplaces. While new technologies can help bypass infrastructure gaps in developing countries, reaping their full long-term benefits will require a substantial investment in basic infrastructure, notably power, transportation and digital communications. Technology will lead to a reduction in some jobs but it will also create and provide new opportunities.

Organisations need to build a broader local workforce, including at managerial level, to contribute to the growth of a local middle class that is needed to put economic development on a sustainable basis. This requires an effort on the part of companies in terms of on-the-job training and skill transfers, and probably a higher level of engagement in helping the growth of the local education system in a way that is aligned to a future demand for skills (Annunziata 2015:7). “Whether the rise of the machines is an existential threat to mankind or not, there is a more mundane issue: Robots are currently being used to automate production” (Chandy 2016:22).

As the demand for new skills increases, the challenge will be to anticipate what those skills might be, and for some the answer is science, technology, engineering and mathematics (STEM) skills (Chandy 2016:26). The onset of a new industrial revolution will bring

tremendous benefits. Annunziata (2015:5) suggests, “companies will need to be especially sensitive to the priorities of governments that in developing economies are trying to address different basic priorities with limited resources: creating jobs, improving health care, and access to power and clean water”. There needs to be a close dialogue so that governments and companies could address these challenges in partnerships.

Businesses must also be alert to the changing environment and adapt their workforce planning and development strategies to ensure alignment with future skill requirements. Strategic HR professionals might reconsider traditional methods for identifying critical skills as well as selecting and developing talent. Considering the disruptions likely to reshape the future will enhance the ability of businesses to ensure organisational talent has renewed and continuously renews the skills necessary for the sustainability of business goals. A workforce strategy for sustaining business goals should be one of the most critical outcomes of HR professionals and should involve collaborating with universities to address lifelong learning and skill requirements (Institute for the Future 2011).

To be successful in the next decade and beyond, individuals will need to demonstrate foresight in navigating a rapidly shifting landscape of organisational forms and skill requirements. They will be called upon continually to reassess the skills they need, and to put together the right resources to develop and update these quickly. Another implication is the need for greater government and industry policy development and leadership to prepare for future work.

People management will need to become more strategic and data-driven in the light of the increasingly diverse and flexible workforce of the future. HR must be consulted in business planning and it must drive strategy at board level, which will require more power and tools to do so. HR will no longer exist for its own sake. HR will evolve to become the enabler of organisational current and future goals. It is therefore essential for HR to appoint the right people in the right roles with the right managers to drive employee engagement (Buckingham & Coffman 2005:274).

10. RECOMMENDATIONS

For developing countries, the following recommendations are suggested as per identified theme:

- **Leadership:** Visioning the future by the facilitation of group future visioning workshops and futurist think-tank seminars as well as future thinking workshops that should be designed to build future thinking capabilities, and expertise are recommended to government and organisations. Organisations will need to be especially sensitive to the priorities of governments in developing economies that are trying to address different basic priorities with limited resources: creating jobs, improving health care and access to electricity and clean water.
- **Innovation and technology:** Lifelong learning and a greater commitment by organisations to provide ongoing on-the-job training to help workers keep pace with new technologies are essential.
- **Education:** Engagement between the education system and industry must be constant to align supply and demand for skills.

Recommendations for line managers and top managers to prepare for future work as per identified theme:

- **Foresight and future-fit:** Management should engage in future thinking with imaginative ways of analysing the external environment.
- **Technology:** Managers must familiarise themselves with automation and robotics.
- **Creativity:** Management should engage in future thinking with imaginative ways of analysing the external environment
- **Collaboration and engagement:** Management should encourage all stakeholders to work together so that right conditions and precautions be put in place to make the transition to future work as smooth as possible. Management must accelerate the pace at which the benefits can increase to the largest number of people.
- **People management:** All managers must encourage employees to be lifelong learners. This will require better and different ways to communicate, collaborate and network.
- **Management competencies:** Lifelong learning and greater investment in obtaining competencies for future work.

The following recommendations are suggested for HR managers to prepare for future work as per identified theme:

- **HR competencies:** Invest in future skills training and ongoing learning.
- **HR practices:** Use crowdsourced talent because these contract employees or freelancers free companies from a financial burden when there is not enough work to support a full staff.
- **HR leadership:** Prepare leaders for a diverse workforce.
- **Preparing staff:** More and greater investment in creating the skills for future work should be encouraged.
- **Detecting changes:** Use environmental scanning for example to detect changes so that the organisation can prepare accordingly.
- **Rethinking HR:** HR represents people and should be proactive instead of reactive silo functioning.
- **Relationship management:** Prioritise the needs of millennial talent and develop the engaging skills of HR managers.

Future research ideas are to determine which forces are shaping the future most rapidly. Future best work practices and strategies should also be explored in order to prepare organisations to embrace future work. Lastly, the changing regional economy could be investigated in South Africa in order for government and organisations to prepare for the future world of work.

11. CONCLUSION

The future cannot be predicted but alternative futures can be forecasted and preferred futures can be envisioned and then invented. South Africa is a developing country and line managers, top managers as well as HR managers should address the challenges of future work in order to gain a competitive advantage in the ever-shifting marketplace. The demographics of employees, employee expectations, values, attitudes and styles of working are continually changing. Conventional management models must be replaced with leadership approaches adapted to the future employee. Organisations must also rethink HR, their organisational design, empower–employee relationships and investigate what they

need to do to remain competitive in a fast-changing world. Done well, the future of work offers the opportunity to provide the most engaging and motivating environment. Through a thorough qualitative open-ended questionnaire investigation it was brought to the front that the contribution to the body of knowledge is on how developed countries, managers and HR managers should be comprehensive in preparing for the future of work. New demands and challenges such as automation, digitisation and millennials are some of the major considerations in this preparation. Reactive silo function of HR cannot be tolerated anymore.

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