

Fourth Industrial Revolution - Beyond Competencies

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Introduction

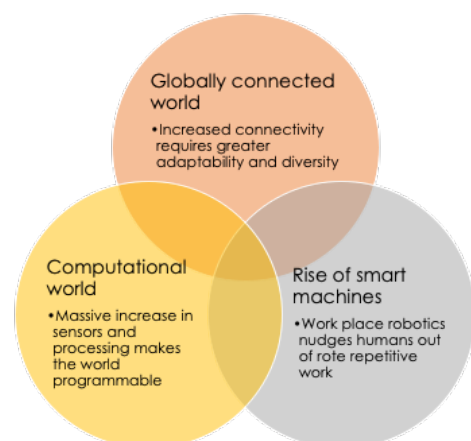
The Fourth industrial Revolution (4th IR) is not a new or recent event, but one that has silently taken shape, and has become more “visible” to us as the movement towards digitalisation, machine learning and artificial intelligence accelerated in the past decade or so. As these changes become more visible, we are faced with having to envision new versions of ourselves, and how our future lives and work will be organised. Now that our consciousness has been raised, can we begin to grapple with some of the possibilities and challenges that are being brought about by these new technologies, and the potential unintended social consequences that these bring. Never before have people been forced to blend and balance such escalating demands on their work and private lives (Evans, 2019).

Much of the conversation seems to revolve around the future employment and employability of people as we are confronted with a world where the meaning and value of work begins to shift. The rapid integration of technology into our lives is raising concerns that some jobs, particularly those that do not require specialised skills, will be eradicated or replaced by emergent technologies. It has recently been estimated that as many as 47% of jobs in the United States are at risk of being replaced by technologies. There is clearly some truth in the comment made by Lyndon B Johnson that the “basic fact is that technology eliminates jobs, not work” (Maxnuk, 2019).

While the notion of ‘work’ in the new world of work may be redefined, learning and self-development remains a lifelong process that enhances employability. Not surprisingly, as concerns about employment (and employability) have escalated, the need to identify and understand the competencies that will be required to succeed in the future has intensified.

“New” Competencies

The drivers of change in the new world of work as depicted in the diagram, are massive increases in computational ability and the rise of smart machines in an increasingly globally connected world that requires ever increasing levels of adaptability and diversity.



Similar to the 3rd Industrial Revolution, the 4th Industrial Revolution represents an exponential growth in the impact of technology on both people and businesses. Within this context businesses are being disrupted as are individuals. There is a shift not only in the type of talent that is required, but also in the kind of skills and competence that will be needed in the 21st century. It is suggested that by 2020, The 4th Industrial Revolution will bring us advanced robotics and autonomous transport, artificial intelligence and machine learning, advanced materials, biotechnology and genomics, but also a change in importance in up to one third of skills that are today deemed as important (World Economic Forum,2016).

So what skills and competence will be required in this technologically disrupted world of work?

According to a World Economic Forum report, *The Future of Jobs* (WEF, 2016), these are the ten skills people will need for the Fourth Industrial Revolution:

1. Complex Problem Solving	6. Judgement and Decision Making
2. Critical Thinking	7. Emotional Intelligence
3. Creativity	8. Service Orientation
4. People Management	9. Negotiation
5. Coordinating with Others	10. Cognitive Flexibility

A slightly different perspective is offered by Chauke (2018) who suggests that the skills that will be required for the digital revolution age are, among others, cognitive abilities, systems skills; complex problem-solving skills; content skills; process skills; social skills; resource management skills; technical skills and physical skills. Given the rapid pace of change, changing business models require near simultaneous change in current and future employment skills-sets.

Leadership Impact

It is also expected that most of the drivers of technological change will impact on the future work and jobs within the next five years, thereby suggesting some urgency in responding to the challenges of 4th Industrial Revolution at the level of leadership. Some of the leadership competencies required for the 4th IR may include:

1. Emotional Quotient (EQ)
2. Digital Quotient (DQ)
3. Agility and Adaptability Quotient (AAQ)
4. Socio-cultural Quotient (SCQ)
5. Creativity and innovative Quotient (CIQ) (Mdluli & Makhube, 2017)

As is evident from these lists, leadership such envisioned also include a notion of “self-leadership” and not just leadership of others. Social skills such as collaboration skills, are also expected to be in higher demand in future than purely technical or operational skills.

Given the rate and pace of change, and the fact that new skill sets need to be developed very rapidly, almost simultaneously as these changes occur, the tangible impact of many of these disruptions on the adequacy of employees' and leaders' existing competences and skill sets is already being experienced in a wide range of jobs and industries today.

Beyond Competencies

A focus on competence and competencies is not new. Pat McLagan who is well known in the training and human resource development community, began her work on competency models in the 1980's (McLagan, 1980). Since then, numerous researchers, authors and practitioners have over the past thirty years or so contributed significantly to the development and refinement of competency models, and their application in enterprises as well as within education, training and development.

During this period, and not surprisingly, terminology has changed, and evolved. While terms are often used interchangeably, thereby suggesting no difference between these. it is important to recognise some distinctions in relation to understanding and applying these terms to the context of the 4th IR. If we assume that the 4th Industrial Revolution represents a real bifurcation point in the way society thinks and acts, it may also be useful to consider how we assign meaning to these terms in our conversations about the 4th IR.

In this context and for the purpose of this article the meanings that are associated with these terms are:

- Competencies – these are elements of knowledge and skill that is acquired through formal and informal education, training and development;
- Skill – this is the demonstrated behavior or action (the application of competencies) to achieve a specific goal or objective;
- Competence – is developed by the real-life application of competencies so that through experience a person masters the skill(s) to the point where they become “second nature”, often described as “unconscious competence”; and
- Capabilities – these are the foundation on which competence is built and are usually not “trainable” in the traditional sense of the word, although they can be enhanced. These may include cognitive abilities, personality, values, motives and interests.

When applying these descriptors to the lists of competencies and skills discussed, an interesting picture emerges.

Assuming that the clustering of capabilities and competencies / skills are broadly accurately reflected, at least two key questions then arise:

- Competencies take time to develop, and yet we also recognise that knowledge that is acquired just as rapidly becomes redundant. How then do we allow for rapid competency development and redevelopment? and
- If capabilities are not “trainable” in the traditional sense, but also form the foundation for competence development, how do we enhance these?

COMPETENCIES	<ul style="list-style-type: none"> Content skills Coordinating with others Digital skills Problem-solving People management Process skills Resource management skills Technical skills Negotiation skills Socio-cultural
CAPABILITIES	<ul style="list-style-type: none"> Agility and adaptability Cognitive ability Cognitive flexibility Complexity thinking Creativity Critical thinking Emotional intelligence Judgement and decision making Service orientation Social collaboration Systems understanding

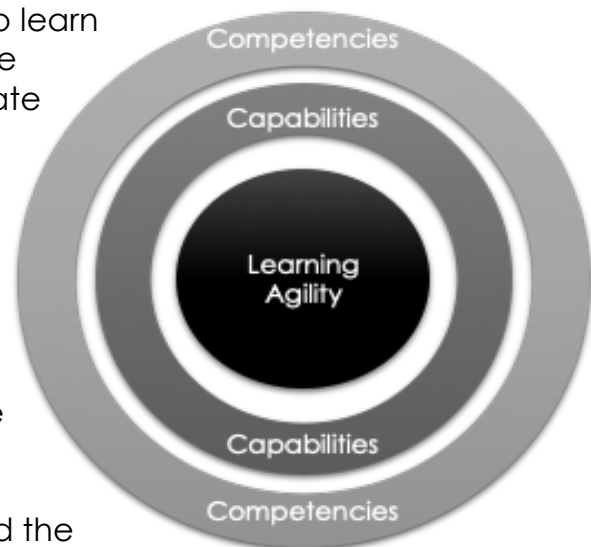
As discussed, skills sets now have to be developed in a rapid manner as an almost near instantaneous response to changes that emerge. Given that skills are the application of competencies, and that competencies require time and knowledge to develop, it is evident that a competence-based approach may no longer be sufficient in the context of 4th IR. Instead we may need to look beyond competencies to capability frameworks.

Learning Agility

During previous technological disruptions it took many years to establish and develop the large-scale education and training systems required develop major new skill sets in response to changed business and market needs. Previously reskilling the workforce appears to have been the strategy of choice for most industries in times of disruptive change. However, this is not an option given the upcoming pace and scale of disruption brought about by the Fourth Industrial Revolution (WEF, 2016).

What may instead be required is a focus on agile learning. Learning agility may be described as “the willingness and ability to learn from experience, and subsequently apply that learning to perform successfully under new or first-time conditions” (Lombardo & Eichinger, 2000). While learning and development opportunities may create and support learning agility, they do not agile learners make.

Agile learners are those that are able to learn from experience, apply their knowledge and skills to new situations, are passionate about continuous learning – and therefore contribute significantly to organisational performance. As suggested by Lombardo & Eichinger (2000) learning agility incorporates aspects such as mental agility, people agility, change agility and results agility. Learning agility also seems to be related to three personal characteristics, namely resilience to instability, increased self-awareness and the ability to respond to complexity. Viewed from this perspective, agile learning may be a critical capability for responding to the disruptive challenges of the 4th Industrial Revolution. Instead of a concern with specific competencies -that are dynamic and fleeting in nature- the focus should rather fall on agile learning as the core capability for developing relevant capabilities in response to the human challenges posed by the Fourth Industrial Revolution.



Final Thoughts

Hopefully this short article will encourage the reader to think differently about making sure that we remain relevant in terms of our demonstrated ability to add positive meaning and value through what we do in times of disruptive change. While the 4th IR may pose many challenges, thinking differently about how we respond to these challenges can assist us to find new solutions to how we can deal with disruptive change on a personal and business level.

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