ANNUAL GENERAL MEETING

EMBRACING THE FOURTH INDUSTRIAL REVOLUTION

12 April 2019
Randfontein Golf Club

Keynote Speaker
Amos Mphephu, Change Management Lead

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Agenda

HR and Change Management in the 4th Industrial Revolution (IR)

Session 1: Strategic Overview
  • What is the 4th IR
  • How does this relate to mining and HR
  • Learning and skills required in the 4th IR

Tea Break

Session 2: Org. Change Management in the 4th IR
  Why Organizational Change Management
  OCM Concepts
  Examples
  Application
Session 1: Latest Trends – The “Now Factor”
What is the Fourth Industrial Revolution?
**Mining**

**Employees Skills**
- Innovative, dynamic and problem solvers
- Life-long learning,
- enabled to leverage off technologies for high performance

**Human Resources Function**
- HR Partners with business to consult and advise on Human Capital Optimisation
- Leverage off technologies to obtain market and employee intelligence

- Basic skills (technical and Physical
- Increase pace of work
- Increased Stress levels as change increases

- Basic skills (technical and Physical
- Slow pace
- Limited Stress

- Manual paper driven HR transactional (leave and pay)
Challenging Mining Environment—Global Trends & Local Factors

Global trends

- **Clean energy scale-up** impacts demand for commodities, e.g., coal and platinum
- **Changing investor profile** favours new commodity mix
- **China’s changing economic focus** impacts demand for, e.g., iron ore
- **Technology advances about to scale**—can SA mining keep up?

Local factors

- **High volatility exposure**—both currency and commodity mix
- **Declining productivity**—while all other regions are improving
- **Risky cost position**—42% of SA mining revenue and 47% of jobs in bottom quartile of global cost-competitiveness

SHIFT HAPPENS: Global disruptions are changing the face of the mining industry

Digital initiatives could drive significant improvements across all types of South African Mines

<table>
<thead>
<tr>
<th>How digital can improve operations</th>
<th>Examples of impact cases applicable to South African Mines</th>
<th>Relevant for (mining method):</th>
<th>Potential impact on margin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase worker safety and productivity</td>
<td>Drone technology can shorten surveying time, improve accuracy and enable access to restricted areas</td>
<td>Underground: Conv, Mech, Open cost, Plant</td>
<td>13</td>
</tr>
<tr>
<td>Improve performance management and help workers to do their job better</td>
<td>Connected mobile and AR devices (e.g., smart helmets) can improve maintenance productivity and performance management by providing real-time access to guides/work plans</td>
<td>Underground: Conv, Mechanized, Open cost, Plant</td>
<td>12</td>
</tr>
<tr>
<td>Improve equipment maintenance and reduce costs</td>
<td>Internet of Things (sensors) can better monitor equipment condition to reduce maintenance demand and consumable cost</td>
<td>Underground: Conv, Mechanized, Open cost, Plant</td>
<td>15</td>
</tr>
</tbody>
</table>

A. Enable frontline with technology

B. Data-driven decision making

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1 Cov = conventional; UG = underground; Plant = processing plant
2 Augmented Reality
3 Advanced Analytics
Example : Advances in Mining Industry – 4IR
On quadrant, rate where your company is?
Place a sticker note on your selection with a company name?

<table>
<thead>
<tr>
<th>1&lt;sup&gt;st&lt;/sup&gt; Industrial Revolution</th>
<th>2&lt;sup&gt;nd&lt;/sup&gt; Industrial Revolution</th>
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The BIG HR Question

How do these changes impact HR?
Video McKinsey – The Digital Future of Work, What Skills are Needed
Summary – Skills Needed

1. Learn to Learn (Lifelong learning)
2. Develop core skills (hard & soft digital skills)
3. Agility (Self preparedness)
4. Human Machine Interface (Working closely with machines)
5. Analytical Skills
6. Creative Skills
7. Flexibility – Say yes to any opportunity
8. Try new things, new talents
The Digital Talent Gap
Are Companies Doing Enough?
The digital talent gap is widening

Every second organization we surveyed acknowledged that the digital gap is widening. Moreover, over half (54%) of the organizations agreed that the digital talent gap is hampering their digital transformation programs and that their organization has lost competitive advantage because of a shortage of digital talent (see Figure 1).

Figure 1. More than half of organizations still face a shortage of digital talent and say it affects their competitiveness

<table>
<thead>
<tr>
<th>Percentage of Organizations that acknowledge the shortage of digital talent</th>
</tr>
</thead>
<tbody>
<tr>
<td>My organization faces a gap in soft digital skills (lacks qualified individuals in soft digital skills)</td>
</tr>
<tr>
<td>The digital talent gap in my organization has been widening over the past couple of years</td>
</tr>
<tr>
<td>My organization faces a gap in hard digital skills (lacks qualified individuals in hard digital skills)</td>
</tr>
</tbody>
</table>

<table>
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<tr>
<th>Percentage of Organizations that acknowledge the impact of the digital talent gap</th>
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<tr>
<td>The digital talent gap is hampering our digital transformation programs</td>
</tr>
<tr>
<td>My organization has lost competitive advantage owing to a shortage of digital talent</td>
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Top digital roles in the next 2–3 years

We asked employers which digital roles will be more prominent in the near future. As highlighted in Figure 5, security and data roles top the list.

Figure 5. Top 10 digital roles of the next 2–3 years

1. Information security/Privacy consultant
2. Chief digital officer/Chief digital information officer
3. Data architect
4. Digital project manager
5. Data engineer
6. Chief customer officer
7. Personal web manager
8. Chief internet of things officer
9. Data scientist
10. Chief analytics officer/Chief data officer

Demand for hard digital skills still outpaces supply

As Figure 1 shows, more than half of organizations face a talent gap in hard digital skills. The two skills in most demand, cybersecurity and cloud computing, are also those with the greatest talent gap (see Figure 4).

Figure 4. A stark gap exists between organizations’ requirements and employee proficiency for hard digital skills

<table>
<thead>
<tr>
<th>Skill</th>
<th>Employer: Demand for this digital skill</th>
<th>Employee: Proficiency-level of skill</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cybersecurity</td>
<td>43%</td>
<td>68%</td>
</tr>
<tr>
<td>Cloud computing</td>
<td>42%</td>
<td>65%</td>
</tr>
<tr>
<td>Analytics</td>
<td>51%</td>
<td>64%</td>
</tr>
<tr>
<td>Web development</td>
<td>39%</td>
<td>64%</td>
</tr>
<tr>
<td>Mobile application design and development</td>
<td>38%</td>
<td>62%</td>
</tr>
<tr>
<td>Data science</td>
<td>45%</td>
<td>62%</td>
</tr>
<tr>
<td>Big data</td>
<td>41%</td>
<td>61%</td>
</tr>
<tr>
<td>Master data management</td>
<td>42%</td>
<td>61%</td>
</tr>
<tr>
<td>Innovation strategy</td>
<td>40%</td>
<td>61%</td>
</tr>
<tr>
<td>User interface design</td>
<td>39%</td>
<td>60%</td>
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Sources: Capgemini Research Institute survey, June–July 2017; N=501 employers; N=753 employees; ranked by employer demand.
I think that the world is focused very heavily on hard skills like computer science, data science, and artificial intelligence. Let us be clear those skills are very important. However, the combination of hard skills and power skills, like communications, critical thinking, and teamwork, is most vital. These skills are required in every job and are critical for professional success across all industries.

Anant Agarwal, Founder and CEO of eDX, a massive open online course (MOOC) provider
How ready are you?
Break Time!
Session 2 : Change Management – Preparing HR to enable business in embracing the Fourth Industrial Revolution
Why organisational change management?

Adapted from Kubler Ross – Change Curve
CEOs said that their ability to adapt to change will be a key source of competitive advantage.

PWC survey of 1150 CEOs
Greater Org Agility = Better Performance = Improved Competitive Advantage

From the PMI® 2012 Pulse of the Profession™ In-Depth Report: Organizational Agility
Agility  [uh-jil-i-tee]

the power of moving quickly and easily;
imbleness

Random House Dictionary
The Prosci ADKAR® Model

The Prosci ADKAR® Model is a goal-oriented change management model that guides individual and organizational change. Created by Prosci founder Jeff Hiatt, ADKAR is an acronym that represents the five tangible and concrete outcomes that people need to achieve for lasting change: awareness, desire, knowledge, ability and reinforcement.

By outlining the goals and outcomes of successful change, the ADKAR Model is an effective tool for planning change management activities, equipping your leaders facilitating change, and supporting your employees throughout the change.
## How to ADKAR – Drone example

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<thead>
<tr>
<th>Building Blocks</th>
<th>Outcomes</th>
<th>Drone</th>
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| **Type of Change (What the Change is all about)** | • Brief description of the change | • The business has decided to introduce drones to conduct safety inspection & monitor stope stability underground during mining activities.  
• The change will help us in preventing miners entering unsafe workplaces. In addition, will be having access to stope accurate real time data to improve they way we mine. |
| **Awareness** | • List the reasons why that change is happening | • To introduce technology in managing our workplaces  
• To proactively manage unwanted risks  
• To effectively monitor stope stability when mining  
• To increase life of mine |
| **Desire** | • List the factors or consequences (good and bad) that create a desire for this change | • Reduction on safety risk exposure  
• Accurate reporting of ore reserves  
• Less dependency on survey to provide accurate data  
• Introduction of new skills  
• Job insecurity (BAD)  
• Union resistance (fear of being monitored) – BAD  
• Lack of drone flying skills - BAD |
| **Knowledge** | • List the skills and knowledge needed to support the change, including a clear picture of what the change looks like | • Drone Flying training  
• System Training  
• Operating Procedure Training  
• Data Analysis  
• IT Support Training |
| **Ability** | • List abilities required to perform and apply the skills learned | • Operating Procedure  
• Drone vs Stope dimensions  
• Underground Conditions  
• Management discretion  
• Maintenance & Support  
• Critical Spares |
| **Reinforcement** | • List the reinforcements that will help to retain the change or make the change stick | • Sharing successes  
• Recognising adopters  
• Embed in a business process |
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How to ADKAR – Exercise

• Divide yourself into groups, according to a company you belong
• Identify current or previous change project with a high level of resistance or potential resistance in your organisation
• Apply ADKAR
• Prepare a presentation in a flip chart – 5 mins
• Present to the audience – 5 mins
Agility is a journey

Where you want to get

Where you are today
We can partner with you in this journey

Change Capability Services
• Build individual change competencies
• Apply change management on initiatives
• Embed organizational change agility

Upcoming : Digital Skills Services
• Newly established NPO, 3Bridges
• Rollout of Digital Skills Labs at communities & schools (to formulate partnerships with other NGO’s; Corporates & Mining companies)
• Focus on soft & hard digital skills

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obrigado
Dank U
Merci
mahalo
Köszí
спасибо
Grazie
Thank you
mauruuru
Takk
Gracias
Dziękuję
Děkuji
danke
Kiitos