



MANDELA MINING PRECINCT
MINDS FOR MINES

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**INVITATION TO ATTEND A WORKSHOP ON SKILLS FOR FUTURE MANAGERS
IN THE MINING AND MINERALS SECTOR (MMS)
09H00-15H00, 5 DECEMBER 2018**

Mandela Mining Precinct, Cnr Carlo and Rustenburg Roads, Auckland Park

PURPOSE OF THE WORKSHOP

- to understand stakeholder's perspectives on the gap between current and future management skills, in terms of competency and behaviours in the MMS
- to encourage stakeholder inputs to inform the future research process and agenda

OUTLINE OF THE WORKSHOP

| Topic |
|--|
| WELCOME TEA & REGISTRATION |
| Articulating Mining 4.0 inputs and outcomes |
| The drivers needed under Mining 4.0 |
| TEA |
| Mapping managerial & other activities that will generate Mining 4.0 outcomes |
| LUNCH |
| Scoping the managerial & other skills needed for the activities identified |
| Identifying the priority managerial skills gaps in "as is" and "to be" |
| Way Forward |

WHO SHOULD ATTEND?

- Executives and senior Human Resource managers in the mining and minerals sector, including industry and Original Equipment Manufacturers
- Executives and senior training managers in the mining and minerals sector
- Government and regulatory senior managers involved in skills development in the mining and minerals sector
- Executives and senior Union members involved in skills development in the mining and minerals sector
- Tertiary Education representatives in Mining, Engineering, Business, Sociology, Industrial Psychology

RSVP

Refiloe Maponya, rmaponya@mincosa.org.za, 011 358 0000, **by 30 November** for catering purposes. Please see attached some background to the SAMERDI initiative and the SATCAP programme, as well as references to further reading that may be of interest.

**THOUGHT STARTER FOR THE WORKSHOP ON SKILLS FOR FUTURE
MANAGERS IN MINING AND MINERALS
5 DECEMBER 2018, MANDELA MINING PRECINCT**

BACKGROUND

The World Economic Forum (WEF) reports that emotional intelligence will be one of the top skills required by everyone to function in business under Industry 4.0¹ (see Figure 1 below). Emotional intelligence, creativity and leadership have long been paired as crucial to business success. Relating specifically to safety, hiring practices will need to focus less on skills and experience, and more on agility, continuous learning, interpersonal communication, and proactive problem-solving skills².

| in 2020 | in 2015 |
|---------------------------------|---------------------------------|
| 1. Complex Problem Solving | 1. Complex Problem Solving |
| 2. Critical Thinking | 2. Coordinating with Others |
| 3. Creativity | 3. People Management |
| 4. People Management | 4. Critical Thinking |
| 5. Coordinating with Others | 5. Negotiation |
| 6. Emotional Intelligence | 6. Quality Control |
| 7. Judgment and Decision Making | 7. Service Orientation |
| 8. Service Orientation | 8. Judgment and Decision Making |
| 9. Negotiation | 9. Active Listening |
| 10. Cognitive Flexibility | 10. Creativity |

Figure 1: Change in Top Ten Skills for Industry 4.0⁴

In a recent report, The McKinsey Global Institute found that by 2030, the change in hours worked in terms of social and emotional skills will increase 26%, and that for technological skills will increase a significant 60%³.

Looking specifically at the Mining and Minerals Sector (MMS), the WEF also predicts that the balance between human and machine task augmentation for communication and interacting will shift 5% towards machines in 2022, compared to 2018⁴.

Finally, WEF reported that the biggest barrier to adoption of new technologies in the mining and minerals sector relates to skills gaps, and local labour markets⁴. How does this picture fit with mining management of the future?

SATCAP AND SAMERDI

The Successful Application of Technology Centred Around People (SATCAP) is a research programme under the South African Mining Extraction Research, Development & Innovation (SAMERDI) strategy, housed at the Mandela Mining Precinct (MMP). Two research projects in the SATCAP 2018/19 period focus on skills development and the potential for job creation and localisation in the sector.

¹ World Economic Forum (2018). *The 10 skills you need to thrive in the Fourth Industrial Revolution*. World Economic Forum, Geneva. Retrieved on 8 November 2018, from <https://www.weforum.org/agenda/2016/01/the-10-skills-you-need-to-thrive-in-the-fourth-industrial-revolution/>

² Erker, S. (2018). *4 Ways to Transform Your People Strategy for Industry 4.0*. EHS Today. Accessed 8 November 2018, at <https://www.ehstoday.com/safety-leadership/4-ways-transform-your-people-strategy-industry-40>

³ McKinsey Global Institute (2018). *Skill Shift, Automation and the Future of The Workforce*. McKinsey & Company, Brussels. Retrieved on 8 November 2018, from <https://www.mckinsey.com/~media/McKinsey/Featured%20Insights/Future%20of%20Organizations/Skill%20shift%20Automation%20and%20the%20future%20of%20the%20workforce/MGI-Skill-Shift-Automation-and-future-of-the-workforce-May-2018.ashx>

⁴ World Economic Forum (2018). *The Future of Jobs Report 2018*. World Economic Forum, Geneva. Retrieved on 8 November 2018, from http://www3.weforum.org/docs/WEF_Future_of_Jobs_2018.pdf

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Planned for the 2019/20 research programme is a study into the managerial skills requirements for the future of mining, and the consequent skills gap that will need attention. The way that people are managed will fundamentally change as we engage with technology, and as technology development drives how we communicate and interact.

ADDITIONAL BACKGROUND FOR THE WORKSHOP

For more information about SAMERDI and SATCAP, as well as further resources for background about skills and jobs topics related to Industry 4.0, please see the hyperlinked documents below:

- [Minerals Council South Africa: People-Centred Modernisation in Mining Position Paper](#)
- [Ten Skills You Need to Thrive in the Fourth Industrial Revolution \(4IR\) \(video clip\)](#)
- [World Economic Forum: The Future of Jobs Report 2018](#)
- [How to be a Leader in the Fourth Industrial Revolution](#)