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Skills for Mining Labour Productivity Improvement.: President's Corner: Skills for Mining Labour Productivity Improvement.

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Skills for Mining Labour Productivity Improvement



It is amazing how quickly time passes by – just nine articles ago, I invited you to join me in reading my thoughts as you enjoyed your cup of coffee and to keep company with me for some more coffee chats. In this article, which is my penultimate one as President of the SAIMM, I would like to share with you my recent engagement with the Chamber of Mines of South Africa.

On 23 May 2017 I delivered a Keynote Address at the Chamber of Mines pre-AGM dinner. The focus of the address was the role of the mining industry in Higher Education Institutions (HEIs) during these challenging times in the HEI landscape, and how HEIs should be addressing the mining industry's skills needs. As a point of departure, my address touched on productivity as a theme on which both the mining industry and HEIs should be having robust discussion. I therefore would like to share with you my thoughts on this subject.

Productivity is a very relevant and important discussion point for the mining industry. It is so, given that our industry has been experiencing declining productivity in the past decade, although equipment efficiencies have been increasing. For example, according to a McKinsey study released in 2015, US mining labour productivity had declined nearly 30% since 2007, while other production sectors such as motor vehicle manufacturing had improved their productivity by nearly 180% over the same period. The same report also indicated that mining labour productivity in two other major mining countries, Australia and South Africa, had declined since 2007 by about 50% and 35%, respectively. In contrast, original equipment manufacturers (OEMs) have been reporting increased equipment efficiencies. For example, Atlas Copco reported an approximate 50% increase in the efficiency of their drilling equipment between 2000 and 2005. Why is it that the mining industry's labour productivity is regressing, yet equipment efficiencies are improving? As professionals in the mining industry, should we not be thinking seriously about the urgency and different ways of improving productivity?

It is not 'rocket science' that by increasing productivity it becomes possible to improve profitability. If profitability increases, companies are able to do the things they would like to do and those that government, labour unions, and communities expect or require them to do. Given the importance of increasing productivity, how can we get productivity on the right path given that, as an industry, we seem not to be adequately exploiting improved equipment efficiencies? Two of the papers in this edition of the Journal touch on this important aspect by relating production, productivity, and technology (including technology maps, as described in one of the papers). These ideas extend to mechanization and modernization as alluded to in the two papers.

The mismatch between productivity and equipment efficiency stems from a lack of the unique skills that are required to convert the improved equipment efficiencies into increased productivity. It is people with the right skills set that can correct the mismatch, because mining production systems cannot drive themselves. Even autonomous mining production systems require people – mines cannot operate themselves, processes cannot operate themselves, and the production system is not self-maintaining without human intervention. The designing, planning, and operation of a mining production system as a *system* requires the incorporation of systems engineering approaches. It also requires a mind-set change away from traditional approaches of designing, planning, and operating mining production systems in 'silos'. Whether or not one is of the view that 'mechanization' or 'modernization' is the panacea for the productivity challenges that our mining industry faces, it is imperative to incorporate systems engineering throughout the mining process. In order to incorporate systems engineering or systems thinking, four high-end skills are required. These are a high intelligence quotient (IQ) required for problem-solving, emotional quotient (EQ) required for managing relationships, creative quotient (CQ) required for innovation using multidisciplinary knowledge, and adaptive quotient (AQ) required for embracing change. A high IQ is required because the mining operating environment is becoming increasingly complex. A high EQ is needed because the ever-increasing stakeholder demands on the mining industry require good relationship skills, negotiating capability, and management and leadership skills, to mention but a few. A high CQ is required for a systems engineering mind-set in order to accomplish work in multi-disciplinary teams. A high AQ is required because the only constant in our industry is change, which requires us to adapt to address existing and new challenges. I am convinced that as the SAIMM, we will remain relevant into the future by ensuring that our programmes and conferences address the key skills that are required to improve mining labour productivity.

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