

Propelling Africa's growth through digital industrialisation

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Industrial companies need to reconsider their organisational strategies in a digital context so as to avoid becoming irrelevant.

Jeff Immelt, Chief Executive Officer of General Electric, said the company has had to reconfigure itself as a digital organisation in preparation for the expected widespread growth of the industrial internet and its effect on traditional industrial assets.

Addressing a forum at the Gordon Institute of Business Science, Immelt explained that industrial companies crave productivity, and the next wave is to be found in the digital space: "We have to start now. There is no avoiding it, we must be ready for change," he said.

Generating efficiencies through the industrial internet

The industrial internet, or the digitisation of industrial assets such as aircraft and locomotives, incorporates machine learning and big data technology to encourage productivity and efficiency, improve supply chain management and enhance quality control.

Immelt estimates the industrial internet as a \$100 billion market, equal in size to enterprise IT and consumer IT, which is only "in its beginning phases". The industrial internet affords opportunities for machine-generated data and ways to model that data which haven't been done before, he explained.

The building blocks of the industrial internet include:

- Controls on industrial assets such as aircraft and locomotives that are able to generate data. This in turn can be modelled to address fuel performance, mechanical deterioration, emissions and other parameters in real time.
- An operating platform, such as GE's Industrial Cloud-Based Platform Predix, which connects industrial equipment, analyses data and delivers real-time insights.
- Through the use of the generated data, an outcomes map can be modelled to promote efficiencies, resulting in reduced downtime, improved fuel efficiency and the optimisation of the fleet. This, Immelt explained, is the resultant information that can make assets and the enterprise work better.

"These small changes are able to drive outcomes through industrial collaboration, developing applications in aviation, locomotives and power. Industrial adoption of the technology is happening at a rapid pace," Immelt added.

The industrial internet in Africa

Addressing the forum, Immelt announced GE's plan to partner with rail and ports operator Transnet to apply industrial internet technology to the digitisation of Africa's transport sector.

Siyabonga Gama, Group Chief Executive of Transnet, explained that digitisation is very important to the group: "We are becoming digitally obsessed as we grow into Africa, and we must build new capabilities or fall by the wayside."

Gama said Transnet is hoping to unlock Africa's digital potential through the partnership and use GE's digital knowledge to revitalise the broader transport sector across the continent. The group aims to move transport freight closer to an on-demand model.

The efficiency gains offered by the industrial internet have specific application for Africa, where a lack of infrastructure creates constraint: "It is impossible to diversify the economies of Africa without better infrastructure, but efficiencies can utilise the same assets to do more. We have to take the existing assets and make them work harder," Immelt said.

Using technology can enable fuel savings, as well as enhanced scheduling. While these are not incredibly sophisticated gains, they could amount to billions of dollars in savings.

Immelt explained digitisation offers the opportunity to build better trade zones instantaneously. However, this is not possible without the support of good public policy, he added.

Gama agreed that regional integration across the African continent could unlock opportunities and drive trade as the world entered a phase of anti-globalisation and protectionism. However, trade and monetary policy consistency, as well as political stability and continuity, were all critical to unlock investment.

The creation of a free trade area across the entire continent is essential to Africa's prosperity, Gama said. High-level discussions to promote interconnectedness and facilitate trade flows across borders were ongoing: "Accelerating trade and encouraging partnership, collaboration and skills sharing, Africa has the ability to leapfrog its development," he said.

Skills development

Immelt, who previously headed up the President's Council on Jobs and Competitiveness for the Obama administration, said skills training would be fundamental to harnessing the full potential of the new industrial technologies and for job creation in Africa.

"South Africa needs a software community and needs to attract people who are comfortable bridging the gap between software and hard assets such as locomotives." Such skills would define job creation in the future. If the country can do this, "South Africa has a real chance to be the incubator of these skills and to lead the way on the continent," Immelt concluded.

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