

# Computational design tools streamlining workflows, disrupting old ways of working

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The global digital economy is estimated to be worth at least three trillion dollars today. It is clear, as with all other exponential technology, that the leading countries are the ones who had early awareness, made the strategic choices and increased participation levels.



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Historical, systemic inequality has resulted in a continent where digital transformation is lagging the rest of the world, leaving Africa to play catch-up. The continent experiences this divide in many ways, from basic access to internet services to outdated technology, systems work practices and the continued reliance on manual labour.

International standards, best practices and technological advancements are largely seen as First World, and therefore not applicable to Africa. As a result, many businesses built on older generation business models, steeped in archaic technology and heavy manual labour, have become uncompetitive and unattractive in the international market, and are simply being disrupted as a result.

Make no mistake, the digital revolution and associated disruptive technology has arrived at Africa's shores and is awaiting our collective proactive action. The 2019 IMD (Institute for Management Development) World Digital Competitiveness Ranking pegs South Africa at number 48 out of a total 63 evaluated countries. It includes no other African country.

## The divide is real

Digital knowledge, technology and future readiness are factors to consider during this evaluation and, as we can see, the divide is real. Developing countries have long-conceived national digital strategies, aligned policies and implemented tactical plans to reap the benefits of the digital economy.

In our engineering business, we are seeing the positive effects of computational design tools that streamline our workflows and disrupt old ways of working. On the other hand, we are also becoming aware of the pitfalls of generative design tools and coding applications that require an advanced level of audit measure to be put into place to ensure the algorithms are safe to use in the real world. Cyber security is also a top priority for us now as we move our design operations fully into the

cloud.

## Using cloud technology to generate local value

We are in danger of a two-speed world, one in which the lack of digital transformation in Africa will result in increased inequalities. Digital technology is exponentially scalable as a result of cloud technology. The last time I checked, Africa does not own any cloud technology. Africa is essentially a consumer of cloud technology, resulting in an imbalance of economic value. How can we use cloud technology in a smarter way to generate local value and participate better in this value chain? This is one question, among others, for our policy leaders to grapple with.

Our ten- to 20-year future-planning digital scenarios at Zutari are gradually revealing the extent of disruption and rapid change that we are all facing. Our analysis in the technology fields of reality capture, BIM, visualisation, digital twins, geospatial, the internet of things and data science are revealing interesting choices in workforce skillsets that require careful analysis and planning.

Our company has people with many skills to meet the digital challenges of a future Africa, and we have a relentless focus on this. Lastly, and most importantly, we certainly believe that the industry in which we operate is open for digital disruption. We have a strategic digital focus to mitigate the possible impact and take advantage of the opportunities presented.

## ABOUT THE AUTHOR

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