



DIGITAL TRANSFORMATION IN KENYAN MANUFACTURING AND JOB CREATION

Event report

Georgia Cooke
December 2018

On the 28th November 2018, the Supporting Economic Transformation (SET) programme at the ODI, in partnership with the Kenya Association of Manufacturers (KAM), hosted a workshop to launch a new report, *[‘How to grow manufacturing and create jobs in a digital economy: 10 policy priorities for Kenya’](#)*, to explore the challenges facing government and manufacturing firms and discuss how both public and private action can help Kenyan manufacturing to thrive in an increasingly digitalised global economy.

Alongside senior representatives of ODI and KAM, including CEO Phyllis Wakiaga, the event was attended by representatives from the Kenyan government, private manufacturing firms, donors and civil society organisations, including Stephen Odua, Director of Private Sector Development at the Ministry for Industry, Trade and Cooperatives; Elizabeth Mueni Kimuli, Youth and Social Affairs Director for the Executive Office of the Presidency; Ian Mills, Head of Sustainable Development at DFID Kenya; Anne Gitonga, Senior Policy Analyst from the Kenya Institute for Public Policy Research (KIPPRA); and Professor Gituro Wainain, University of Nairobi.



SUMMARY

- In the African context, Kenya is a leader in digitalisation in terms of both access to and use of digital technologies including robotics, artificial intelligence and cloud computing. However, there is a significant digital divide within the country in both access to and use of this technology, and compared with manufacturing firms in more developed countries, Kenyan firms are set to benefit less from the technology they do use.
- With ambitious goals set out in the manufacturing ‘pillar’ of President Kenyatta’s Big Four agenda and manufacturing’s share of Kenya’s GDP in decline over the last decade, much needs to be done to seize the opportunity offered by the digital economy to ensure Kenyan manufacturing does not fall further behind.
- At this workshop, the SET programme at ODI, in partnership with KAM, launched a 10-point policy framework featuring recommendations for government and the private sector to support Kenya’s manufacturing sector to thrive and continue to drive job creation in the digital economy. The framework is divided into policies that will:
 - i. Improve digital capabilities
 - ii. Foster competitiveness
 - iii. Manage digital change in an inclusive way.
- Government representatives in attendance emphasised the importance of digital technology and digital-readiness in their thinking around the implementation of the Big Four agenda, and the Ministry of Industry, Trade and Cooperatives announced their new Industry and Entrepreneurship project.
- Key issues raised by other speakers and attendees included the importance of effective, cross-regional protection for intellectual property (IP) to encourage innovation, the need to address bottlenecks at points of entry with technological solutions to speed-up value chains, and the need to provide better and more support to small and medium enterprises (SMEs) through accelerator and incubator programmes to allow them better access to finance, digital technology and upskilling opportunities.
- Both KAM and government figures from the Executive Office of the Presidency and the Ministry of Industry, Trade and Cooperatives confirmed intentions to seek to take forward the recommendations in the report in their policymaking and plans.

OPENING PRESENTATIONS

PHYLLIS WAKIAGA, CEO, KENYA ASSOCIATION OF MANUFACTURERS (KAM)

Ms Wakiaga opened by offering special thanks to those in attendance from the Executive Office of the Presidency, the Ministry of Industry, DFID Kenya and finally to ODI, KAM’s partners for the project.

Technology is transforming Kenya’s economy and shaping its society. Machine learning, artificial intelligence and robots are increasingly shaping policy- and decision-making. Investors are looking for us to respond; they want to know where to invest and how. Technology also has a role in global value chains (GVCs), as it is being used to improve data sharing, the rating of export products and delivery in the market.

A 2012 McKinsey report showed that the manufacturing sector is putting more emphasis on innovation, productivity and trade, not just on growth and employment. According to the World Economic Forum (WEF), the following are some of the recent trends in the use of technology in manufacturing:

- Companies are creating and testing solutions in the virtual world before they need to be manufactured in the real world.
- 3D printing is allowing for the creation of products from start to finish using just a single machine.
- Cloud computing is helping communication between machines and also helping companies analyse and extract information.

- Robots can be incorporated into the manufacturing process and managed by humans – they are not necessarily a replacement for humans in the production process.

There is a fear that while we are trying to create jobs, increased levels of digitalisation and automation will lead to job losses. However, in 2018, WEF argued that there is a need for a greater understanding of the potential of technology to create new, high-quality jobs.

In order for Kenya to fully realise its potential, all sectors must embrace digital technology. We must also invest in innovation, support SMEs to ensure they adapt to new technology and scale-up, and promote skills development, as skills and talent are the top drivers of the manufacturing sector.

STEPHEN ODUWA, DIRECTOR OF PRIVATE SECTOR DEVELOPMENT, MINISTRY OF INDUSTRY, TRADE AND COOPERATIVES

Stephen Oduwa began by stating his pleasure at being able to attend the launch of the ODI and KAM report, and to present the actions the government are undertaking on the agenda of digitalisation in manufacturing.

I am glad to see IBM here – much of what we’ve been able to do thus far to improve Kenya’s Ease of Doing Business rating has been based on their research. It is through this work that we are now able to launch a new initiative: the Kenyan Industry and Entrepreneurship project. This project’s objectives are (i) to strengthen the innovation ecosystem and (ii) to strengthen links to small and medium enterprises (SMEs) to support them to upgrade their operations.

Why focus on the innovation ecosystem? We all know that research and development (R&D) is a costly affair, making it difficult for firms, particularly SMEs, to find budget for it. To support the innovators already out there, we want to strengthen incubator programmes that will provide, amongst other things, greater access to industry. We want to use the innovations we already have to improve our productivity and competitiveness. This report launching today has certainly come at the right time, just as we are about to launch our project.



Left: Stephen Oduwa, Ministry of Industry; right: Phyllis Wakiaga, KAM.

The Industry and Entrepreneurship project will also focus on providing more open data, such as on trade, so that business has the information at its disposal to make informed decisions. Kenya is currently bidding to host the next global Open Data Conference – this report should help us make our case.

The Ministry of Industry looks forward to receiving the recommendations in the report, and we hope to further incorporate them in our new project.

IAN MILLS, HEAD OF SUSTAINABLE DEVELOPMENT, DFID KENYA

This is an exciting moment to take evidence and influence policy on digitalisation in manufacturing. Kenya has already shown what concerted efforts between the government and the private sector can achieve in terms of digitalisation. This report is very timely, and will go some way to allay fears about loss of jobs as a result of digitalisation.

The UK government is very proud of its partnership with Kenya – past successes include the original investment in M-Pesa, through which half of Kenya's GDP now runs. The UK hopes to continue this partnership and invest in new technology in the future.

DR DIRK WILLEM TE VELDE, DIRECTOR OF THE SET PROGRAMME AND PRINCIPAL RESEARCH FELLOW, ODI

We, the Supporting Economic Transformation (SET) programme at ODI, are very fortunate to be able to work on this agenda in collaboration with KAM, with whom we have worked for some years now.

While there is economic growth in Kenya, there is also a hint of deindustrialisation, as the percentage of manufacturing in the country's GDP is declining in real terms. There are opportunities emerging, such as in [rising wages in China](#) which may lead to investment of Chinese manufacturing in sub-Saharan African (SSA) countries such as Kenya, but there are also challenges. The SET programme, for instance, recently launched a piece of [analysis on Kenya-UK trade and investment relations](#) that highlighted how Kenya is losing market share in some of its key export products – this should be a wake-up call.

We are delighted to see how far up the agenda manufacturing has come in the last year, and that it forms part of the President's 'Big Four' agenda. We are also very pleased to hear about the government's new Industry and Entrepreneurship project, as announced by Stephen Odua. However, there is still work to be done to put digitalisation and the Fourth Industrial Revolution on the agenda – it is noticeably not mentioned in the Sustainable Development Goals for instance, despite how crucial it is for the future of development.

Employment is a key issue addressed in this report launching today, both direct and indirect effects. Kenya must not stand still for a moment; there is a risk that the greater level of digitalisation in other countries will actually take production and thus jobs from developing countries, as [SET research](#) shows there is an inflection point where robots will become cheaper than labour in the not-too-distant future.

In this context, these 10 policy priorities being launched today should spur broad dialogue about how manufacturing companies, and the government, can best prepare for the digital economy.

PANEL PRESENTATIONS AND DISCUSSION

DR KARISHMA BANGA, SENIOR RESEARCH OFFICER, ODI

Dr Banga opened by introducing the SET programme and KAM 10-point agenda on how to grow manufacturing and create jobs in the digital economy. The recommendations therein are based on analysis, including [previous work by ODI and KAM](#), and on interviews with firms and other players.

Research by the SET programme this year (2018) shows that manufacturing in SSA is facing a two-pronged problem: (i) lower levels of digitalisation, and (ii) a decreased impact of that digitalisation on productivity and growth in the sector. There is a digital divide within developing economies in both access to and use of the internet. And while the inflexion point at which robots will become more economical than human labour is further away for developing than developed countries, the impact of reshoring (and a reduction in offshoring) by developed economies may hit developing countries sooner.

Our research found that there are four key ways firms in Kenya are reacting to the availability and impact of new technologies:

1. Efficiency gains in production (such as at Megh Industries)
2. Integration in global and regional production networks and value chains (FunKidz)
3. Increasing competitiveness and re-skilling (Panesar Interiors)
4. Creation of new jobs for new tasks based on technology (New Wide Garments).

Digital technologies are not only affecting manufacturing production but are increasingly re-ordering the entire value chain. Take, for instance, the case of furniture manufacturing value chains; firms can use computer software for product design and development, computer-aided manufacturing for cutting and carving of wood with exact specifications, and e-commerce platforms for both procurement of materials as well as sales. Government support along each stage of the value chain is also crucial – for example, policies incentivising research and development, supporting the financing of investments made by firms in digital manufacturing as well as policies around data which can help in leveraging e-commerce. Digital technology can affect manufacturing production directly or indirectly through increasing the efficiency and viability of policy options, for instance in the online registration of businesses and digitalised customs.

We lay out a framework for private sector and government covering 10 policy priorities divided into three categories: **building digital capabilities** (soft infrastructure, not just hard), **improving competitiveness** and **managing digital change in an inclusive way**.

A. Building digital capabilities

1. Improving access and affordability of ICT services through digital-infrastructure sharing.
2. Developing a legal framework for data infrastructure.
3. Developing a well-enforced national innovation policy to encourage innovation and protect intellectual property (IP) rights.
4. Supporting a manufacturing ecosystem of start-ups and technology hubs.
5. Use regional and continental approaches, such as the African Continental Free Trade Agreement (AfCFTA) to leverage the benefits of digitalisation.

B. Fostering competitiveness

6. Reducing the cost of financing capital, including through development finance institutions.
7. Improving access to and affordability of electricity.
8. Improve transport infrastructure, postal competence and trade logistics.

C. Managing digital change in an inclusive way

9. Targeting skills development in the workforce.
10. Focusing on problem-driven governance to create a digitally enabling environment.

CIIRU WAWERU WAITHAKA, CEO, FUNKIDZ

There is potential for technology to rapidly solve some of Kenya's problems – such as hygiene, with the quicker production of items Kenya currently doesn't manufacture, such as taps, toilets and sinks. Digital technology will not reduce jobs; we need to look to develop industries with available technology. At FunKidz, a children's furniture manufacturer, we are using new technology to scale-up tasks such as printing designs onto wood. FunKidz's printer has been a game-changer in the business, and certainly worth the work and cost. Use of this, as well as computer-assisted design,

means we are able to aim to compete globally – not as ‘the IKEA of Africa’ as some have coined us, but as the FunKidz of the world!

FunKidz also works to promote skills learning, with a programme to teach children technological skills. There needs to be more focus on the arts at school too, as this builds crucial skills for manufacturing. If you cannot design, you cannot manufacture.



Ciiru Waweru Waithaka, CEO, FunKidz.

PHYLLIS WAKIAGA, CEO, KAM

There are a number of key issues to focus on.

Firstly, e-commerce. This is such an important issue, and one where simple solutions can easily be found. Many Kenyan firms do not currently have usable websites that enable e-commerce. Data is also not easily accessible online. The Trade Portal in development is a start – but the quality of many of the sites listed on it is not sufficient to drive sales.

Another key issue is IP, and the extent to which it is protected. In a number of cases, companies' innovations are being copied without the proper protection. This is a regional issue and not just a Kenyan one, as Kenyan products are being copied elsewhere in the East African Community (EAC), such as Burundi, and there is no IP rights harmonisation to allow this to be dealt with.

Trade logistics is another issue commonly brought to KAM by member organisations, and one at the top of my list to address. Currently, Kenya faces massive bottlenecks at points of entry, and technology can be part of the solution to improve this. How can we simplify processes and make our value chains more efficient? If we can't do this, we will see increasing levels of onshoring by developing countries, and Kenya will lose out. Speaking to investors, it is clear that even if labour costs are low, if the systems around them are not seamless then the entire process is uncompetitive. In most cases, investors would prefer to accept higher labour costs in order to save costs along the value chain.

Finally, there is opportunity to be seized in the negotiations of trade agreements such as AfCFTA. It is crucial that Kenya incorporate these key issues of e-commerce and IP in these negotiations.

KAM's policy team is working hard on these issues already, but we must continue to keep the digital angle at the core of all the work we are doing.

Q&A AND GENERAL DISCUSSION

A question and answer session for panellists and a wider discussion with attendees followed presentations. A selection of questions and comments have been provided here, without attribution to individuals.

- Academic institutions need to be providing e-learning opportunities to upskill the workforce in digital-friendly skills.
- There is not only a digital divide amongst manufacturing firms – there is a divide between enforcement agencies in terms of the quality of data they are able to provide to customers.
- Strengthening IP rights is important, but more knowledge is required in this area – not all ideas or innovations are IP-protectable.
- Linkages between demand for and supply of skills need to be improved. In many cases, firms using advanced machines cannot find qualified engineers within Kenya to fix them when needed, and have to fly in engineers from abroad.
- Policymakers and manufacturers should seek lessons from those in other sectors such as timber production, fisheries, and so on – these sectors are ahead of manufacturing in the use of digital technology.
- Small and medium enterprises (SMEs) (making up 60% of KAM’s membership) must be supported with more and better incubator and accelerator programmes that facilitate their access to finance for technological upgrading and upskilling of workers.
- Where it is proving a challenge to sell the idea of investment in new digital technology to firm owners and board members, it must be framed as a sales- and productivity-increasing exercise.



From l-r: Karishma Banga, report lead author, Phyllis Wakiaga, KAM, and Ian Mills, DFID.

CLOSING REMARKS

ELIZABETH MUENI KIMULI, EXECUTIVE OFFICE OF THE PRESIDENCY

The recommendations in this report are very clearly laid out, and the Office of the Presidency will be looking into how to anchor them in our plans for the relevant sectors.

To drive improvements in digitalisation, the government needs to (i) implement policies and (ii) enforce laws. A key part of the Big Four agenda is in ensuring the laws we implement are actually enforced in reality.

On the issue of trade logistics, maintenance, and not just the building of new infrastructure, is crucial. On technical and vocational educational training (TVET), over the past year, the government has made real progress; it has partnered with a number of private sector players and some foundations to implement a TVET programme to increase access that will be launched sometime next year.

SMEs may feel that they cannot afford to go digital, where in reality they cannot afford *not* to go digital. If small firms continue to only produce and utilise standard equipment, they will struggle to benefit from all the programmes being implemented by the government on housing and manufacturing under the Big Four agenda.

DIRK WILLEM TE VELDE, DIRECTOR, SET PROGRAMME

There are a number of key takeaways from this excellent discussion and presentations:

- The government is already doing a fair bit, but more focus needs to be on implementation rather than the creation of new legislation.
- The encouragement and protection of innovation will be absolutely crucial, and in that, the strengthening of IP rights across the EAC should be a priority.
- SMEs, which are the focus of other ongoing work by the SET programme in partnership with the Executive Office of the Presidency and the Ministry of Industry, must be supported to access technology and upskill their staff.

Overall, it is clear that Kenya cannot stand still, or it risks losing out; both the public and private sectors must get to work immediately and think creatively about solutions.

JOB WANJOHI, HEAD OF POLICY, KAM

Key priorities for KAM going forward will be the issues of systems upgrading, the drive to bring the cost of capital down, and improve trade logistics that are slowing down value chains. Efficiency through digitalisation is the key to address Kenya's ongoing competitiveness problem.

Thank you to all those from government who have made the time to attend and contribute today, to the KAM research team, and to ODI for their support.

SET is an applied research and advisory programme at the ODI, funded by DFID. The programme's reports, dialogue sessions and events cover four dimensions of a country's experience in economic transformation: (i) what is happening? (ii) why is it happening? (iii) what should be done? and (iv) how to make it happen. For more information, visit set.odi.org.

Photo credits (all): KAM. All rights reserved.