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Urbanisation in a digital world: The importance of cities

Tags: Economic Growth, Programme Design, Digital, Urban, Infrastructure



Figure 1: Singapore. Courtesy of Chenisyuan, Wikipedia Commons

Urbanisation in a digital world

In early 2017 the UK's Department for International Development's ICED programme convened a roundtable of UK government departments, investors, NGOs, urban development practitioners and private sector technology and infrastructure services providers. The session explored whether the 'Smart Cities' paradigm had relevance for developing country cities, and how the opportunity posed by new digital solutions should be considered in development country policy and programming. The session concluded that whilst the 'Smart cities' paradigm was often not sufficiently adapted to developing country contexts, that developing country cities around the world are already adopting 'smart city' or digital solutions. At times enabling a leapfrogging of technologies. Most critically the group concluded that developing countries cannot view the digital transition as a luxury, but as a necessity if cities and nations wish to be a part of the new global economy. The thinking from the roundtable and from subsequent desk and field research has been published in the ICED white paper 'Urbanisation in a Digital World'. This paper summarises the critical arguments behind the paper, and is key reading for advisors considering programming in urban settings.

For further information readers should consult the full report available on the ICED website, or connect with the ICED programme team to access programme design support.

Why is the fourth industrial revolution, and the opportunity for the digital dividend particularly critical for cities?

Cities are at the front lines of private sector innovation, new market creation, service delivery, and citizen engagement. Cities are where demand-led solutions that utilise new digital and frontier technology building blocks have the greatest potential to improve productivity, services infrastructure and enable new markets. This paper therefore sets out the three key arguments for why governments and donors should pay particular attention to ensuring policies and programmes promote digital technologies as key tools for inclusive developing in urban areas.

Cities as loci of productivity

Cities generate 80% of global GDP. When cities function effectively, a doubling in population results in an 11% increase in productivity.¹ However, when cities are unable to effectively manage growth, deterioration in urban services results in increased costs and poor business and living environments, locking businesses and citizens into low-productivity, low-opportunity cycles. Digital and frontier technology solutions can help cities and citizens break out of this vicious cycle.

¹ <https://www.economist.com/news/books-and-arts/21721895-non-linear-scaling-explains-everything-productivity-cities-safe-dosage>

The 'Smart Cities' movement has championed the role of digital in shaping urbanization for nearly a decade, and whilst 'smart city' initiatives were originally technology-led, newer proposals focus on the impacts of digital technologies on the lives of citizens and are being adapted to developing economy contexts. Equipping young people and entrepreneurs with digital skills and access can create a new generation of workers able to deliver new service models and present significant employment opportunities. In Austria strong skills availability means more than 30% of workers are employed in knowledge intensive services or medium-high tech manufacturing, with high skilled services accounting for 44% of Vienna's industry employment²). Investments in smarter energy, buildings, street lighting, and transport provide huge direct and indirect benefits, attracting 4x to 32x returns on investment with viable business cases and payback times that are attractive to investors³.

Digital technologies can improve urban sectoral productivity and enable sector formalisation by providing transparent business environments, accessible capital, and digital business management, marketing and service delivery tools. City governments have a key role to play here in creating supportive policy environments, providing infrastructure and investment support services which enable local business productivity, and by reducing corruption and increasing accountability - ensuring that local taxes are well spent.

Cities as centres of innovation

Cities have traditionally been centres of innovation. Physical agglomeration enables the clustering of businesses, research and innovation facilities, human capital and market demand required to innovate new products and services. Cities have a track record of leadership and innovation, demonstrated by the global mayors who took leadership positions on climate change long before many of their national governments.

The same is true for supporting digital innovation, where cities such as Barcelona, Bogota, London, Cape Town and Bengaluru have fostered new digital economies, supported piloting of smart infrastructure technologies and led the way in developing e-governance services. The same could be true for cities across the developing world, as is being demonstrated by early initiatives in Nairobi, Accra and Lagos.

While city governments may not have the legal jurisdiction over all elements of digital leadership such as national infrastructure investments, they can influence other areas of digital development and encourage the services that utilise it. City governments indirectly influence this by attracting private sector companies that make R&D investments, by training a digital workforce, implementing 'smarter' infrastructure and increasing affordable connectivity.

Virtuous cycles in urban systems

If city governments and stakeholders choose to adopt, adapt and innovate using digital technologies they can enter new virtuous cycles of inclusive growth. As complex systems, the deployment of new solutions in urban settings can enable huge direct and indirect benefits, and support development of intersecting markets and services which accelerate leapfrogging.

Case studies on Los Angeles and India in the ICED paper 'Urbanisation in a digital world' highlight how investments in street lighting or transport can support improved business connectivity, reduce congestion, promote manufacturing growth, and improve public safety and health. Localised urban energy generation and trading solutions such as LO3 enabled by agglomerations of users (see case study), keep dollars within the city economy where it can be re-invested. Cities are also uniquely placed to provide both supply side infrastructure for digital connectivity (See Los Angeles and Lagos Swift Networks cases), whilst also enabling demand side factors such as workforce training and market demand creation⁴.

Combined, these complex network effects, when managed by pro-active coalitions of urban governments, private sector and civil society, can create more livable, inclusive and productive cities that attract talent and investment, enabling a virtuous cycle of inclusive growth.

If countries are to truly benefit from the digital opportunities offered by the fourth industrial revolution there they must ensure they both understand and support the opportunity for growth that cities pose. This will require action from policy makers, donors, investors and the private sector, and donors

² Job Creation and Local Economic Development, OECD (2014)

³ <https://www.siemens.com/customer-magazine/en/home/cities/the-business-case-for-smart-cities.html>

⁴ <http://industryofthingsvoice.com/wp-content/uploads/2017/02/Huawei-2016-Global-Connectivity-Index.pdf>

should play a key role in supporting and co-ordinating this transition. For more examples and ideas on how policy and programmes should respond to this opportunity please consult the full 'Urbanisation in a Digital World' report or contact connect@icedfacility.org for ICED programming support.