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Balancing digital risk and opportunity in development

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

Developing countries cannot view the digital transition as a luxury, but as a necessity if cities and countries wish to be a part of the new global economy. Regardless of country or income level, governments are grappling with how to embrace technology shifts to achieve better outcomes for citizens. However in emerging economies, governments will need to play an even more significant role to ensure economic models promote inclusive development. In particular, being they will need to ensure they are aware of concurrent risks and opportunities that digital technologies provide, and ensure they take action to mitigate risks and provide a supportive enabling environment to foster opportunities for inclusion.

This paper therefore sets out the 8 keys issues that governments and donors should take into consideration when designing policy and programmes: Automation and Jobs; Labour Policy, Inequality; The Youth Bulge; Disability; Women's Economic Empowerment; Data, Privacy and Cyber-security; and Digital Monopolies. **For further context and information please consult the ICED white paper 'Urbanisation in a digital world', and accompanying papers available on the ICED website or contact the ICED Facility for programme design support on iced.programming@uk.pwc.com.**

1. Balancing Automation and Job creation

The spectre of automation, enabled by the digital revolution and frontier technologies, looms large across the globe. However, with susceptibility to automation shown to be inversely proportional to GDP[1], there is a risk in lower income countries of zero-job growth in key sectors, and job losses in traditional sectors such as agriculture where the poorest men and women work. In addition more autonomous factories make plants less reliant on cheap labour, enabling plants to be relocated to the regional markets they serve. For example with Adidas is currently moving some of its manufacturing back to Germany in order to shorten production chains. New digital industries are also labour-poor - Facebook, with a valuation greater than Exxon, has just a quarter of the employees - highlighting just how capital-intensive but labour-poor new digital industries can be.

Governments and donors therefore need to consider scenarios for transition, that enable them to build new sectors and sectoral capabilities which will enable jobs to be created and sustained.

2. Evolving next generation labour and social policy

Whilst the private sector is rapidly evolving new markets and service models, governments are struggling to evolve labour and social policy, and support skills development at a comparable pace. The explosion of the gig economy has created jobs, but ones that are fundamentally insecure and fail to provide reliable incomes

[1] World Bank Development Report 2016: Digital Dividends

and social protection.

If citizens and economies are to benefit from new labour models, governments and donors must in parallel develop policy and advocacy models that serve these workers. 'Digital trade unions[2] and universal income are just some of the models that may be needed to support the new world of work. Innovative examples of new types of collectivism include the browser extension Turkopticon developed by labour advocacy groups, which enables online workers to alert other online workers of clients who fail to honour agreements.

3. Avoiding re-enforcement of traditional divides

Whilst digital solutions can narrow traditional divides between urban and rural, men and women, the young and the disabled, digital access can also exacerbate real world divides unless governments proactively promote inclusive digital development. Four billion people remain 'offline'[3], and 51 countries are not getting affordable internet access[4]. Addressing this challenge requires new business models such as Swift Networks free wifi network in Lagos, funded by requiring users to watch adverts in order to access services.

But access is not merely an infrastructure challenge. 'Demand side' initiatives are also needed to help the poorest develop digital skills and awareness the opportunities provided by digital services, enabling them to benefit from digital access. Such initiatives must also be tailored to the differentiated learning needs of marginalised groups such as female entrepreneurs, young people, and people with disabilities.

4. Transforming the youth bulge into a youth dividend

Youth are at the forefront of digital adoption with 70% of global youth aged 18-25 online, 67% in developing countries and 30% in Least Developed Countries (LDCs). But with LDC youth representing a larger share of total online population than in developed or emerging economies, young people are uniquely placed to benefit from the digital dividend. Despite this, employers feel African youth lack the digital and analytical skills needed for the workplace, and digital exposure for many is limited to engagement on Facebook, WhatsApp and Instagram. Improvements in digital connectivity must therefore be matched by digital skills development support to young people, aligned with needs of entrepreneurs and enterprises.

Google's recent pledge to train 10 million young African's in digital skills is a sign that the private sector sees the huge value here[5]. However for these initiatives to translate into poverty reduction, they must be replicated at scale, built into mainstream education and designed to target the poorest in all emerging economies who may not be present in traditional education settings.

5. Promoting disability inclusion

15% of the global population live with disabilities, and this number rises significantly for over 55s. Digital access can improve employment opportunities, ability to access urban infrastructure services and enable civic engagement. However, digital access is significantly lower for people with disabilities (little data exists for developing countries, but 23% of Americans with disabilities are not online, vs 8% of general population). Only 40% of government websites, and 18% of commercial websites are accessible in countries who have ratified UN Convention on Rights of Persons with Disabilities. Text to speech and screen reader availability is available in the main language in only 70% and 56% of countries respectively, and in minority languages in only 23% and 21% of countries, meaning that lesser abled people are significantly disadvantaged in accessing simple digital tools[6].

Whilst digital tools and solutions could provide huge benefits to the disabled, they will not do so unless products and services are designed with the disabled in mind. Examples of good practice for disability inclusive design are integrated in the 'Urbanisation in a digital world' report. In addition the 'Smart Cities for All' initiative has developed standards to support cities in assessing their disability inclusion maturity, adopting ICT accessibility standards and procurement approaches[7], and governments and donors can play a

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[2] http://www.wired.co.uk/article/gig-economy-digital-unions
[3] GSMA, http://www.mobileconnectivityindex.com/
[4] http://a4ai.org/affordability-report/report/2015/
[5] https://www.blog.google/topics/google-africa/making-internet-work-better-everyone-africa/
[6] Data from misc recent Smart Cities for All presentations www.smartcities4all.org
[7] http://smartcities4all.org/english-toolkit/

significant role in promoting their uptake and iterative improvement.

6. Supporting Women's Empowerment

Digital technologies have the potential to empower women, giving them access to work, and enabling them to shape the world around them through digital advocacy. For example, the global Safetipin app enables women to report safety issues, with governments using this data to improve the safety of cities and services. However whilst the digital gender divide in developing and least developed countries has gradually decreased, the divide in Africa has grown[8]. Women who own mobile phones in urban areas are 50% less likely to access the internet than men[9] and evidence from Tanzania shows that female entrepreneurs are less likely to use mobile phones for businesses than men.

Products and services must therefore be designed with women in mind, and this can improve uptake can create significant positive impact, as was seen in Bangladesh where Grameen micro-credit models saw rapid uptake when women used mobile handsets to access the service.[10] Greater research is needed to understand how to effectively design and market digital services for poorer women if the digital gender divide is to be closed. As evidence available suggests that whilst solutions designed for working women such as Safetipin[11] can bring great benefits, current product design and marketing approaches do not take into account women's needs or reach female audiences.

7. Managing Data, Privacy and Cybersecurity

With high profile ransomware and other cybersecurity attacks on the rise in 2017, not to mention corporate losses of customer data, concerns over security as we digitise critical infrastructure and personal data cannot be ignored. Cybersecurity is a booming industry, growing 13x since 2004, and expected to reap some $1 trillion in profits from 2017-2021.[12] Without doubt, data security will become increasingly important and governments everywhere are pressed to keep pace with rapidly evolving technologies, such as blockchain (the underpinning technology behind Bitcoin). Blockchain today is in theory nearly invulnerable to attack, but each application has yet to be stress-tested in enterprise-scale rollouts.[13]

As high on the political agenda today is how to govern data in a world in which 90% of all the world's data has been created in the last two years.[14] (Europe and Australia are both reviewing basic public and private data access and portability principles and regulation.) Governments and donors can learn from trailblazing countries such as Estonia, which has issued all citizens with a digital ID, providing them their own data portal so that only with citizen consent can doctors or third parties be granted access.

8. Addressing the spectre of digital monopolies

Because network effects mean that a service is more valuable if your neighbour or colleague is also using the same platform, some corporates will win (or have already won) significant market share (think Microsoft, Google, Facebook). As a result new market entrants may often struggle to gain traction. Whilst such monopolies create economies of scale and service interoperability, they also pose significant risks around who controls and can harness the value of information such as geospatial data needed for urban planning. In an ever expanding world of information, there is potential to harness data to support data-enabled planning, citizen-focused service design and 'smarter' infrastructure services that could deliver public services to the world's growing cities.

However, to harness these opportunities, governments and donors alike must rapidly engage in dialogue with industries and firms about the role of monopolies and data in contributing to delivery of public goods. A good example of such collaboration includes the Open Transport Partnership, where donors are collaborating with global ride sharing companies such as EasyTaxi and Grab to share transport data.
For further information please consult the ICED website or contact iced.programming@uk.pwc.com.

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[8] https://www.itu.int/en/ITU-D/Statistics/Documents/facts/ICTFactsFigures2017.pdf
[9] http://webfoundation.org/research/womens-rights-online-2015/
[10] http://siteresources.worldbank.org/INTEMPOWERMENT/Resources/14648_Grameen-web.pdf
[11] The Safetipin app enables women to report street-based violence or harassment. Data is then shared with police, government agencies and civil society groups enabling them to plan urban safety iniatives or support. www.safetipin.com
[12] Cybersecurity Ventures, 2017 http://cybersecurityventures.com/cybersecurity-market-report/
[13] https://www.cnet.com/news/lockheed-martin-bets-on-blockchain-for-cybersecurity/
[14] http://www.iea.org/digital/