

The next revolution: how governments should respond

The scale of today's digital transformation is **comparable to the Industrial Revolution** – and maximizing the potential of disruptive ICT technologies isn't just a priority for businesses, but for governments and societies too. In an exclusive opinion piece, **Australian MP Paul Fletcher gives an insider's view** on the digital revolution and offers policy makers three clear principles for transformation success.

“A focus on building broadband networks can distract a government from the broader range of policy settings that are important in capitalizing on digital transformation”

► **IN EVERY INDUSTRY**, management teams are focusing on how digital transformation is changing their company's competitive position. If the management team of every business needs to consider digital threats and opportunities, so too must the management teams of every country – that is, governments.

But for government and policy makers, the digital transformation of the economy raises an even broader range of issues than for businesses.

To respond, governments need to do three things: **recognize the scale of the transformation, leverage the internet to operate better as a government, and set policies to facilitate the digital transformation of the economy.**

RECOGNIZE THE SCALE OF THE TRANSFORMATION

Business people in almost every industry now recognize the scale of the transformation being driven by the internet and digitization. Business-school textbooks are full of examples of incumbents losing out to new entrants who are using digital technology: Kodak and digital cameras; the record industry and music downloads; video stores and Netflix; recruitment businesses and LinkedIn; and myriad other examples.

At the same time, there are many inspiring examples of new businesses that use the internet to deliver customers a better service at a better price than the traditional way of doing things. As a con-

sumer today, buying a house or car, obtaining a mortgage or booking a holiday is a vastly more efficient and informative process than it was 20 years ago, and you are very likely to get a much better deal.

There is a profound industry-by-industry impact from digital transformation. An economy is the aggregate of individual industries; so unsurprisingly, digitization is having a very substantial economy-wide impact. Some nations are doing well out of this massive economic transformation; some are facing grave economic threats.

The scale of the transformation is comparable to the Industrial Revolution. And the authors of a recent book argue that: “during the critical juncture created by the Industrial Revolution, many nations missed the boat and failed to take advantage of the spread of industry” [1].

Today, one of the nagging questions for policy-makers in many countries is whether, by failing to capitalize on digital transformation, their nation is going to miss this particular boat.

So the first priority for any government is to recognize the scale of the transformation that is occurring – and to ensure this recognition is embodied in specific policy settings.

LEVERAGE THE INTERNET TO OPERATE BETTER AS A GOVERNMENT

The internet offers rich opportunities for govern-





ments to do a better job of serving their citizens across their myriad responsibilities.

Delivering services more effectively

Just as businesses have embraced digital transformation to deliver better services to their customers, citizens have come to expect similar digital service delivery from their governments. As an indicator of the user demand for online service delivery, recent research in Australia indicates that over 80 percent of citizens expect to be able to deal with government online.

However, according to a recent report from Boston Consulting Group based on a survey of citizens in 12 countries, government online service delivery still has a long way to go – and there is often a gap between rhetoric and reality. While almost 95 percent of respondents had used at least one online service in the last two years, there was significant dissatisfaction, particularly amongst younger citizens, that the services were not as good as they should be [2]. In Australia, a recent report on government services noted that in 2012, 50 percent of the services provided by the Department of Human Services were not conducted online. The Australian Taxation Office still sends out 10 million notices a year in hardcopy [3].

Compared to how banks and utilities have increasingly adopted online portals for everyday transactions and shifted away from issuing hardcopy statements, it is clear that governments can do a much better job.

The United Kingdom is at the forefront of ef-

forts to deliver digital services that meet citizens' expectations. The UK government has undertaken a two-year project to make 25 of the most-used government services 'digital by default'. At present, five of the top 25 services are now 'live' and being used daily by citizens. Seventeen services are in beta – currently being tested while still under development. The remaining three services are in alpha – a core working prototype being tested by a select group of stakeholders to meet the main user needs.

Today, citizens can view driving records, file civil claims, apply for apprenticeships, renew patents, apply for student finance, transfer car ownership, claim disability payments and even book prison visits – all through an online portal.

In Australia, the government's goal is that by the end of 2017 all major services and interactions will be available to the public online (specifically, all services with more than 50,000 transactions per year), making government more accessible and more efficient. The internet will be designated as the default way to interact with most users.

Savings opportunities

As well as delivering better services, governments can capture big savings by going digital.

The reported UK experience is that online transactions are 20 times cheaper than transactions over the phone, 30 times cheaper than postal transactions and a staggering 50 times cheaper than face-to-face transactions. The UK government estimates that moving to online channels for

transactional services is likely to cut the cost of service delivery by one-fifth [4].

The Canadian government has reported a similar experience in its transition to digital service delivery. A recent government-wide review of service delivery found that per-transaction costs among 11 selected departments were CAD 28.80 in person, CAD 11.69 by telephone, and a mere 13 cents online [5].

While not all government services can be migrated onto the Internet and delivered more cost-efficiently and conveniently, the majority can. For example, in South Korea, 87 percent of interactions with government can be performed online. In Denmark there is a target to lift online transactions to 80 percent of all transactions by 2015.

State governments in Australia are following a similar course. The government of New South Wales, Australia's most populous state, is working to consolidate service delivery and enhance the use of online platforms. The state government's online platform Service NSW now allows citizens to pay for, renew and replace a wide range of services through a single online portal – motor-vehicle registrations, licences, driving tests, seniors cards, business-contractor licences, tradespersons certificates and property licences, to give just a few examples.

Reduced costs in IT services

There are further savings opportunities for governments that move to cloud-based approaches.

The California Department of Technology recently unveiled the CalCloud platform, allowing government departments to share common cloud-based computing resources to deliver new online services for users while simultaneously reducing costs. Over 20 state departments have already requested services on the platform. In a similar fashion, the Australian government has committed to set a default expectation that private or public cloud solutions are to be used whenever efficient scale is not achieved at agency level.

Building communities and breaking down inequality

One of the core responsibilities of government is addressing and helping to reduce inequality.

For 20 years there has been a lot of talk about the 'digital divide': the fear that access to online services was linked to socio-economic status, and that as an economy's digital intensity increased, it would only serve to reinforce the inequality that already existed. A laptop computer connected to the internet is a powerful tool for education or for doing business – but if you cannot afford to buy a computer, then you are facing renewed disadvantage. With people in rural areas in most countries tending to be poorer than those in cities, it seemed likely that the high costs of building telecommunications networks in rural areas would be an ad-

ditional factor exacerbating the digital divide.

Over the past few years, though, there has been a remarkable drop in the cost of devices and connectivity. In Australia, for example, a wide range of internet-connected tablets are available for less than AUD 200 – with older models selling for as little as AUD 99. This means that, increasingly, digital technology can be a means to help address, rather than exacerbate, inequality.

Today, tablets have sparked a flourishing ecosystem of applications to help address a myriad of social issues and needs. All kinds of educational apps are now available – in some cases allowing students to be taught even when specialist teachers in a subject are not available at their school. Apps to meet the needs of children with autism or hearing difficulties, or to help older people take medicines, are among the many examples of how affordable technology can help governments serve community members who most need support.

SET POLICIES TO FACILITATE THE DIGITAL TRANSFORMATION OF THE ECONOMY

The reshaping of an economy to take advantage of digital transformation cannot be done solely, or even largely, by governments. In the main, it is the job of private businesses and organizations to capture the new opportunities that a digital economy offers. But government policy settings are important: the right settings can foster digital transformation; the wrong ones can impede it.

One challenge for policy makers is that no single Department, Ministry or Agency controls all the relevant policy levers. Instead, policy settings across government are important: from tax to education to industry policy to infrastructure. Another issue is that general economic policy settings – for example, a general readiness to encourage new entrants as opposed to protecting incumbents – may be more important than policies specific to the digital economy.

Advancing the interests of consumers, not producers

When consumers rush to take up a new digitally-based product or service, this is strong evidence of the value that new products can bring. Whether it is people queueing around the block to buy the latest smartphone or tablet; taking up new apps such as Uber or Airbnb that offer a better, internet-based way to hire a taxi or a bed for the night; or going first to Google or another search engine rather than using the traditional Yellow Pages to find a plumber or other service they need – such behavior is powerful evidence of consumer benefit.

However, all too often such innovations run up against rules that protect the existing interests of incumbent businesses. For example, governments regulate the taxi industry and the booking systems used by taxis. A new online application might per-

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form the same function much more efficiently: but if existing players can use the legal system to block the new app, then take-up can be disrupted or prevented.

When industry after industry is being disrupted by new entrants with a better business model using digital technology, it is not surprising that there will be political pressures generated by existing businesses. But a wise government will have a bias towards less regulation rather than more; towards facilitating competition and a level playing field rather than maintaining cozy arrangements that favor existing players; and towards letting the market decide whether a new technology-based way of serving a consumer need is superior to the existing ways of doing it.

Ensuring enough people with the right skills

For an economy to do well out of digital transformation, it needs people with the right skills. This is where governments have a key role, both through educating citizens and through immigration policies that attract suitably skilled people.

Around the world, governments are concerned about how to configure their education systems – both school and tertiary – to equip students with the right skills to be productive in a digital economy.

Key policy measures include:

- ▶ Increasing the number of students studying STEM (science, technology, education and maths) subjects – by making these subjects more attractive and relevant to students
- ▶ Teaching specific skills in software programming, often from quite a young age – with the UK and Vietnam two examples of countries that include this in their school curriculum
- ▶ High schools specializing in technology, designed to give students (including those from disadvantaged backgrounds) a path into the IT sector.

The other obvious policy tool is immigration policy: bringing people with specialized skills into a country from other countries. Immigration has played a key role in the growth of the US high-tech sector. Research in the late 1990s by AnnaLee Saxenian of the University of California, Berkeley found that Chinese and Indian engineers were senior executives at one quarter of Silicon Valley's technology businesses, and that many businesses in the area were started by entrepreneurs from Asia [6].

Policies to encourage research and development

One obvious policy lever that is important for an economy's digital transformation is the amount of money a country spends on research and development (R&D). According to the OECD, its mem-

ber countries spent an average of 2.4 percent of gross domestic product (GDP) on research and development in 2010. Of the countries surveyed, Israel spent the most, at 4.4 percent of GDP—a fact closely related to that country's position as a world leader in several high-tech industries [7].

Typically much of this money comes from government – but it is interesting that Israel had a higher proportion of R&D spending from the private sector than many other countries. This suggests that stimulating private sector expenditure on R&D is a very effective way to expand the total amount of money spent.

In most countries the higher education system is a key generator of research. But it is equally important that there are strong linkages between universities and the private sector so research can be commercialized. These linkages are particularly strong in the US – with the universities of Stanford and Berkeley, for example, both strongly linked to the growth of Silicon Valley.

Policies to encourage research and development, and to encourage strong research institutions in the higher education sector and elsewhere, are therefore a key element of any government's policy response to the digital transformation of the economy.

Supporting the journey from lab to marketplace

In the digital economy, innovations are frequently brought to market by companies created for that specific purpose. This is why many countries have policies to assist start-ups – with the aim of helping as many as possible travel the full length of the road from a new idea in a lab or a workshop, through to being a publicly-listed company selling large volumes of products or services based on the idea.

These policies are many and varied, and can include:

- ▶ Specific funding targeted at early-stage technology companies
- ▶ Incubators and other non-financial mechanisms to support early-stage technology companies
- ▶ Measures to facilitate fundraising with reduced regulatory requirements, such as crowdfunding
- ▶ Tax incentives for investors in early-stage technology companies
- ▶ Tax holidays on profit in the early years of a company's growth
- ▶ Favorable tax treatment of employee shares and options, recognizing that these are typical remuneration techniques in early-stage technology companies.

Policies to deliver the right infrastructure

One issue that attracts a lot of political attention is the state of a nation's broadband infrastructure.

“Digital technology can help address inequality, rather than exacerbate it”

If we do not have high-speed broadband, politicians in many countries argue, then our businesses will find it difficult to compete and to serve customers around the world; our children will be at a disadvantage in their education; and tech-sector companies will find it harder to innovate and develop new products and services.

Many countries have therefore adopted policies to use public funds to subsidize the rollout of upgraded broadband networks. Some examples include:

- ▶ The UK, where the operator BT is rolling out a mixture of fiber to the node and fiber to the home with over GBP 1.4 billion in government support
- ▶ New Zealand, where NZD 1.35 billion in public funds has gone to a number of infrastructure providers to deploy or upgrade fiber networks
- ▶ Malaysia, where a joint public/private funding model is being used with Telekom Malaysia to deploy a mix of fiber to the home, fibre to the node, and ADSL2+ across different geographical areas
- ▶ Australia, where the current government is proceeding with a publicly funded network upgrade using a cost-effective mix of technology, including fiber to the node and cable.

A nation's digital infrastructure clearly matters. But it is only one of many factors that affect a nation's capacity to capitalize on digital transformation, and too narrow a focus on building a broadband network can distract a government from the broader range of policy settings that are important in this area.

CONCLUSION

The impact of digital transformation is being felt across every sector of the economy. Just as it is incumbent on businesses to respond, it is similarly incumbent on governments to do so. They need to recognize the scale of the transformation, leverage the internet to operate better as a government and set policies to facilitate the digital transformation of the economy. Just like the Industrial Revolution, digital transformation has brought the world to a turning point – and nations that work to capitalize on this transformation will secure great benefits as a result. ●

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