

Mastering digital transformation:

a policy maker's guide

The ICT revolution has the potential to catalyze a country's innovation, growth and development – **and governments can make or break this transformation.** Policy makers need a **strategic framework** to guide their thinking in this fast-moving area, as well as clear recommendations drawn from ongoing digital transformation experiences.

“Mastering the digital transformation process is likely to be the defining core competency of the 21st century”

► **A NETWORKED SOCIETY** is a new techno-economic paradigm that involves a digital transformation process and that is enabled by information and communications technology (ICT). The successful creation of a Networked Society has the potential to transform the capacity of societies to shape their physical, economic, social and intellectual environments to their own ends. However, the path to a Networked Society involves a process of fundamental structural change.

WHY ICT-ENABLED TRANSFORMATION?

Mobile and digital technologies are expanding into more areas of societies and economies, and the performance of these technologies continues to evolve at a rapid pace. Additionally, an abundance of data is being generated from connections, sensors and applications. The network is moving from being a means for connection into an increasingly important source for data-driven innovation, with new insights from data and information patterns holding enormous potential to generate substantial value for business and society. Add radically reduced communication costs and the ease in which almost anyone can access powerful tools and platforms to innovate and reach out to markets, and we have a potent recipe for radical and disruptive innovation across in-

dustries, public services and private life.

In the Networked Society, most of the world's population will live in a culture of increased openness, sharing, collaboration and self-organization. This will fundamentally change the way we engage, innovate and collaborate. A key foundation in tomorrow's society will be a powerful ICT “interaction infrastructure” that supports the flow of information exchange and collaboration. The network will serve as a common knowledge utility and a foundation for innovation.

Digital transformation also promises to create a transparent, inclusive and sustainable path for growth and development. It provides tools for transforming industries, services and economic structures; for evidence-based policy-making and data-based decision-making; for open and accountable institutions; for partnerships and collaboration through extended networks and crowdsourcing; and for open and inclusive innovation. It promises adaptive management of development programs via a rich variety of real-time feedback channels and agile, adaptive development processes.

MANAGING THE REVOLUTION

Technological revolutions are accompanied by profound social and institutional changes. As a re-





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sult, they often encounter powerful resistance from established institutions, dominant vested interests and incumbents. Adjusting the social and institutional environment to take advantage of a technological revolution and its associated techno-economic paradigm can involve painful adjustments and disruptions to – and even the destruction of – legacy systems, institutions and processes. Realizing the transformational potential of the ICT revolution can therefore require redesigning or building new networks of institutions, the transformation of regulatory frameworks and governance, new skills and competencies, and even radical changes to ideas and culture.

It is only when innovations are widely diffused and broadly adopted by people, businesses and public institutions that any long-term sustainable impact on economies and societies can be achieved. Diffusion and adoption of innovations are what ultimately matter for any significant socio-economic impact. The institutional and public policy frameworks prevailing in a society can assist – or constrain – this potential impact.

This means that policy makers' capacity to manage ICT-led transformation is of strategic significance. The role of policy makers is to lead institutional change, empower change agents and innovators, and set policy frameworks for the wide and effective adoption of new technologies. Benefiting from transformational change requires sound public policy making that shapes and determines the duration, cumulative strength, dis-

tribution and sustainability of the socio-economic benefits that can be achieved in the Networked Society.

ICT specialists and utopians tend to focus only on the potential benefits of this technological revolution. But the risks are also high, including job destruction, income inequality and erosion of privacy and security. Policy makers need to address issues of transitional and long-term costs, such as the impact on job markets and skills, and on health, learning and cognitive development, especially among children. These socio-technical risks will increasingly come to the fore as ICT and internet-based applications penetrate ever further into society and the knowledge economy. They will demand increasing attention and resources, and will need to become an integral part of future ICT policy and e-transformation practice.

Some of the risks of the ICT revolution are beyond the competencies and mandate of specialized ICT ministries. Managing these risks should be part of how a whole society steers e-transformation towards an inclusive and desirable vision of development. Reforms may be necessary in labor and tax policies, education, social policy and welfare systems, and government itself – at the local, national and global levels. Policy makers can be proactive in mobilizing the whole of government and society to address these issues. But they cannot rely on technocratic solutions alone, or on their own narrow or outdated mandates, to meet every challenge.

A STRATEGIC FRAMEWORK FOR DIGITAL TRANSFORMATION

Policy makers need a strategic framework to guide their thinking about the ICT-enabled transformation ecosystem and its main components and key players if they are to pursue coherent policies and mutually reinforcing ICT-enabled development initiatives. I see the digital transformation ecosystem as composed of five interdependent elements (simplified in Figure 1):

Enabling Policies and Institutions. Policies and institutions constitute the environment that either enhance or obstruct the interactions among all elements of e-transformation. They are critical in promoting the supply of ICT services and their effective use in all sectors. This environment is essential to fostering trust in a digital economy and Networked Society.

Human Capital. Skilled human resources, both ICT users and producers, are at the heart of the ICT revolution. Necessary skills include policy, technical and change management skills as well as broad information and digital literacy, and techno-entrepreneurship.

Local ICT Industry Capability. A dynamic ICT ecosystem is necessary to adapt global technology to local needs, manage and maintain technological infrastructure, develop local digital content and solutions, and effectively partner with global ICT suppliers. Local software development capability represents a core competency that can enable the wide and effective domestic use of new technologies.

ICT Infrastructure. Affordable and competitive information infrastructure, including affordable access to the Internet, fixed and mobile narrowband and broadband, and other digital connectivity tools, is essential.

Digital Transformation. This includes ICT applications and complementary investments in ecosystems and changes in institutions in order to transform key sectors of the economy. Digital transformation of any sector demands holistic understanding of the sector and ICT ecosystems and their possible interactions.

This framework helps policy makers identify the key stakeholders in creating an ecosystem for the Networked Society. It calls for inclusive stakeholder mobilization, and maps the connections and the relationships among diverse players concerned with e-transformation supply and demand. It facilitates the creation of a national consensus on e-transformation and promotes systematic thinking about ICT as an enabler of development. It also helps policy makers and stakeholders iden-

tify the missing links and constraints in the ecosystem that should be prioritized.

NURTURING A NATIONAL ICT ECOSYSTEM

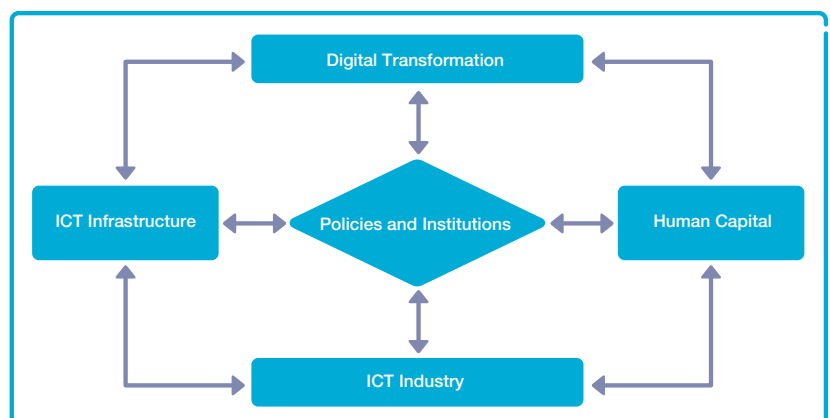
Policy makers should be aware of the critical role of interdependencies and scale effects in the emerging ICT ecosystem of a country. For example, broadband contributes to higher growth in countries with a critical mass of ICT adoption, reflecting return to scale. The impact of broadband on SMEs is likely to take longer time to materialize, due to their slow accumulation of intangible capital and complementary capabilities. Conversely, broadband impact is higher when its adoption is combined with local incentives to innovate new applications. In short, the impact of broadband is neither automatic nor uniform across economies.

This reinforces the case for adopting the holistic, ecosystem-based approach described above. Policy makers need to design broadband, digital economy and national ICT plans that go beyond information infrastructure investments and invest in other enablers of digital transformation. These enablers include ICT education, ICT services development, digital policies, sector policy reforms and institutional changes aiming to remove barriers to ICT-led transformation, ICT services development, ICT-led business process innovation, new business and organizational models, and e-leadership capabilities.

The national digital transformation planning and implementation process should start with a broad assessment of national e-readiness and benchmark the country on key indices against comparable or leading nations. Policy makers should deploy appropriate benchmarking and e-readiness methodologies, even while recognizing their limitations, to spur national dialog. A shared vision of the opportunities and challenges and/or SWOT analysis of the country's economy should guide the integration of ICT into a national development strategy. It should be anchored in

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Figure 1: The e-transformation ecosystem



shared understanding of the possibilities, benefits and risks of the ongoing ICT revolution, and the barriers to the desired transformation.

Integration of ICT into national development demands creative and intensive interactions between those immersed in the world of ICT and technological innovation, and those concerned with the goals and challenges of transformative development. This requires e-leaders, ICT policy makers and telecommunication regulators to break out of the ICT bubble, and to grasp the sectoral or developmental context under transformation. This also calls on other sector leaders to view ICT as a driver of transformation in their sectors, rather than an add-on or after-thought to their programs and sector strategies.

TRANSFORMING GOVERNMENTS AND SERVICES

ICT-enabled transformation possibilities are vast and constantly expanding, particularly in the government and service sectors.

Transforming Government. This should be driven by a shared vision of future government to meet the challenges posed by globalization, rising public expectations and the Networked Society. There is a wide range of ICT applications to enable public-sector reforms and key strategic approaches to implement ICT applications across governments.

It is essential to take a whole-of-government perspective, create customer-centric transformation, share processes, infrastructures and resources, and develop integrated multi-channels for service delivery. Special attention should be given to mobilizing demand for online services and monitoring their adoption and effective use, while new tools such as mobile devices, open government data, big data and analytics should be leveraged for public sector transformation. A holistic, ecosystem view should guide both the supply and demand of digitally-enabled government.

Transforming Key Service Sectors. Digitally-enabled sector transformation calls for a vision-driven, reform-based strategy to bring about sustainable transformation. Integrated ICT strategies and investments in any sector must be jointly synchronized with relevant sectoral policies, regulations and investments in the domain to be transformed. A sector transformation strategy should benefit from taking an ecosystem view of the target sector (demand), combined with a holistic view of the ICT ecosystem (supply). This integrative ecosystem view of sector transformation can be applied to education, health, finance and other service sectors.

HOW CAN COUNTRIES MASTER DIGITAL TRANSFORMATION?

Fully mastering the digital transformation process demands *specialized leadership and institutional capabilities, enabling policies and regulations, and high-quality broadband infrastructure.*

Leadership and institutional capabilities are essential ingredients in digital transformation. Policy makers should define clear roles for government, the private sector and other development partners in leading the transformation process. Leaders need to network and coordinate across institutions to set coherent policies, overcome political economy barriers and manage structural changes. They should build institutions with the requisite core competencies to orchestrate and implement various elements of the transformation process.

Policy makers should also give attention to developing *enabling policies and regulations* for the emerging digital world. Policy reforms are essential to harness the ongoing technological changes and ensure their integration into economies and societies has the maximum transformational impact. Political economy challenges and barriers will ultimately condition the focus and implementation of these reforms, as they do in other public-policy arenas. Policy makers should focus on the key questions that a regulatory framework must answer, and the distinct regulatory approaches that have emerged to address digital transformation issues. A converging technology environment has significant implications for the need for coherent, robust, and technology-neutral policy and institutional frameworks.

A high-quality broadband infrastructure has become an essential foundation of a vibrant e-transformation ecosystem. Universal access is key: societal interests are at stake in serving unconnected populations, capturing scale and network effects, and building a truly inclusive Networked Society. Policy makers need to explore options for pursuing universal access, and also adopt the right policies for managing spectrum, which has become an increasingly critical resource for deploying mobile-broadband networks.

THE TEN LESSONS SO FAR

In summary, and based on the experiences of the leading countries in digital transformation to date, I have ten recommendations for policy makers:

- 1) Commit to a holistic, long-term ICT transformation strategy that is integral to a national development strategy
- 2) Leverage stakeholder engagement and coalitions to build a shared vision and commitment for the goals of digital transformation
- 3) Tap synergies among actors in the e-transformation ecosystem, and exploit supply- and demand-side economies of scale
- 4) Attend to the soft infrastructure or local capacity to master digital transformation through leadership, policies, and institutions
- 5) Pursue public-private partnerships to tap private sector innovation, resources and know-how required for transformative change

“Technocratic solutions alone cannot meet every challenge posed by the ICT revolution”

- 6) Emphasize digital diffusion and inclusion for broad-based and equitable transformation
- 7) Adopt strategic approaches to funding to meet the diverse innovation, flexibility, coordination and time horizon needed for all elements of digital transformation
- 8) Balance strategic direction with local initiative to generate a dynamic for national drive, local experimentation and adaptation, and fast scaling
- 9) Enable change, innovation, and learning via decentralization, knowledge sharing, innovation funds and change management processes
- 10) Practice agile and participatory monitoring and evaluation from the start and throughout the transformation process.

These fundamentals can be mutually reinforcing. Practicing them should help countries and local governments build the capacity to master the digital transformation process. It is my firm belief that this mastery is likely to be the defining core competency of the 21st century.

This article summarizes the conclusions of The Networked Society Guide, authored by Nagy Hanna with contributions from Rene Summer, forthcoming from Ericsson in the fourth quarter of 2014. The Guide provides detailed frameworks, guidelines and examples of how digital transformation can be pursued in specific contexts, with a focus on the government and service sectors. ●

ABOUT THE AUTHOR



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► FURTHER READING

- Rene Summer, 'Carpe mutationem - seize the transformation!', *Ericsson Business Review*, Issue 1, 2014, <http://www.ericsson.com/res/thecompany/docs/publications/business-review/2014/carpe-mutationem-seize-the-transformation.pdf>
- "A digital age requires digital Machiavellians", *Ericsson Business Review*, Issue 2, 2014, <http://www.ericsson.com/res/thecompany/docs/publications/business-review/2014/a-digital-age-requires-digital-machiavellians.pdf>