



Clues from networked readiness index: business imperatives and challenges

Introduction

In May 2016, President Benigno Aquino III signed into law Republic Act (RA) No. 10844 creating the Department of Information and Communications Technology (DICT). According to the new law, the newly-created department is mandated to formulate and implement policies that will promote the development and use of ICT, establish a free internet service that can be accessed in government offices and public areas, and protect the rights and welfare of consumers and business users to privacy, security and confidentiality in matters relating to ICT, among others (Alvarez, 2016).

This is a welcome development for the country as ICT utilization has increased dramatically in the government, business, and consumer sectors in the past 15 years as evidenced by the improvement in the country's networked readiness index (NRI) from 3.3 in 2001 to 4.0 in 2015. Indeed, ICT has been adding value to these sectors with the benefits of efficiency and productivity at the top of the list.

Focusing on the business sector, ICT offers (1) data and information management, (2) automation of business processes, (3) virtual workplace, and

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(4) connectivity and communication. Realizing these benefits translates to enhancing core competencies that eventually results in a competitive advantage.

Networked readiness index

A globally accepted measure in determining the influence of ICT to an economy as a whole is NRI. Using a scale of one to seven, NRI is a composite indicator made up of four main categories (subindexes), 10 subcategories (pillars), and 53 individual indicators distributed across the different pillars. The four subindexes are (1) environment, (2) readiness, (3) usage, and (4) impact. NRI is included in the annual Global Information Technology Report being published by INSEAD and World Economic Forum (WEF) since 2001.

In 2015, the NRI of the Philippines improved from 3.9 (78th out of 148) in 2014 to 4.0 (76th out of 143). The improvement was primarily caused by the increase in usage (from 3.6 to 3.8) and impact (from 3.6 to 3.8) subindexes. Though there was no change in environment subindex (maintained at 3.8), the readiness subindex decreased from 4.6 to 4.5. Globally, Singapore tops the ranking with 6.0, a position enjoyed for the past two years by Finland, which slid to second place.

Presented in Table 1 is a comparative NRI with subindexes for the past five years of countries belonging to the Association of South East Asian Nations (ASEAN). Notice that the Philippines was able to reach the average ASEAN NRI only in 2015. Taking all the NRIs for the past five years, only three countries (Brunei Darussalam, Malaysia, and Singapore) have scored above the average. Singapore has been consistent in leading this group with Myanmar at the cellar position for the past five years.

All things remain equal, it can be surmised that countries with higher NRI are more likely poised to be economically competitive. Thus, the Philippines has to do something to outscore the average NRI if it does

not want to be left behind especially now that ASEAN integration is ongoing.

Underscoring the imperatives

Looking at the points that matter, the business sector can learn a lot from NRI. To maximize the benefits they can derive from NRI, they have to start by giving importance to the four subindexes of NRI. The environment subindex suggests that a grounded political and regulatory ecosystem is a requisite for ICT to be maximized. Similarly, the readiness subindex advocates a best-fit approach in managing ICT infrastructures. Complimenting this is the usage subindex which highlights that opportunities for consistent and steady access be made available to the social actors. Lastly, the impact subindex which was only introduced in 2012, espouses that for improvements to be managed, they have to be measured (Tugas, 2014).

Many industries in the Philippines can leverage on ICT to boost growth through increased efficiency and improved value chain. With fast technology turnover and influence of the ASEAN integration, the Philippines is left with no choice but to be with the bandwagon and to embrace a change in perspective if it wants to thrive, or at the very least, to survive. For a leading fast-food chain in the Philippines, the primary motivation in increasing its ICT investment is the double-digit growth promised at the end of the operating year. This is made possible by keeping an in-house shared services center to support its international operations.

Infrastructure-wise, keeping up with innovation means investing in hardware, software, and “peopleware” technologies that are necessary to reshape, remodel, and redirect how transactions are done in the level of individuals, businesses, and the government. For a leading logistics and transportation company in the Philippines, they believe that “technology is part of globalization” and to keep pace with globalization, they have to “keep

Table 1. Comparative NRI with subindexes of ASEAN countries (INSEAD & World Economic Forum, 2011-2015)

	Average*	2015	2014	2013	2012	2011
Brunei Darussalam	4.1	No data	4.3	4.1	4.0	3.9
Environment	4.0		4.2	4.1	4.0	3.5
Readiness	4.4		4.7	4.1	4.3	4.4
Usage	4.1		4.4	4.2	4.1	3.7
Impact	4.0		4.2	4.1	3.7	No data
Cambodia	3.3	3.3	3.4	3.3	3.3	3.2
Environment	3.6	3.4	3.7	3.8	3.7	3.3
Readiness	3.7	3.9	3.7	3.5	3.7	3.8
Usage	3.0	3.0	3.2	3.1	2.9	2.6
Impact	2.9	2.9	2.9	2.9	2.9	No data
Indonesia	3.9	3.9	4.0	3.8	3.7	3.9
Environment	3.9	4.2	4.0	3.8	3.8	3.9
Readiness	4.6	4.2	4.9	4.7	4.6	4.7
Usage	3.5	3.7	3.7	3.6	3.3	3.1
Impact	3.4	3.6	3.5	3.3	3.3	No data
Lao PDR	3.4	3.6	3.3	No data	No data	No data
Environment	4.0	3.9	4.0			
Readiness	3.5	4.0	3.0			
Usage	3.0	3.0	3.1			
Impact	3.3	3.3	3.3			
Malaysia	4.8	4.9	4.8	4.8	4.8	4.7
Environment	4.9	5.1	5.0	5.1	4.9	4.5
Readiness	5.0	4.9	5.0	4.9	5.0	5.2
Usage	4.7	4.9	4.8	4.8	4.6	4.5
Impact	4.6	4.6	4.5	4.5	4.6	No data
Myanmar	2.4	2.5	2.3	No data	No data	No data
Environment	2.7	2.7	2.7			
Readiness	2.5	2.8	2.2			
Usage	2.2	2.2	2.2			
Impact	2.4	2.4	2.3			
Philippines	3.8	4.0	3.9	3.7	3.6	3.6
Environment	3.6	3.8	3.8	3.6	3.4	3.5
Readiness	4.4	4.5	4.6	4.4	4.6	3.9
Usage	3.5	3.8	3.6	3.5	3.3	3.3
Impact	3.6	3.8	3.6	3.5	3.3	No data
Singapore	5.9	6.0	6.0	6.0	5.9	5.6
Environment	5.8	5.9	5.9	5.9	5.7	5.6
Readiness	6.1	6.3	6.2	6.0	6.1	5.8
Usage	5.7	5.9	5.9	5.9	5.6	5.4
Impact	6.0	6.0	5.9	6.1	6.0	No data
Thailand	3.9	4.0	4.0	3.9	3.8	3.9
Environment	4.0	4.1	4.1	4.0	4.0	3.9
Readiness	4.7	4.7	5.0	4.8	4.6	4.4
Usage	3.5	3.7	3.6	3.4	3.3	3.4
Impact	3.4	3.6	3.4	3.3	3.3	No data
Vietnam	3.8	3.9	3.8	3.7	3.7	3.9
Environment	3.6	3.6	3.7	3.6	3.6	3.7
Readiness	4.6	4.5	4.7	4.4	4.4	4.8
Usage	3.5	3.6	3.6	3.5	3.5	3.3
Impact	3.4	3.6	3.4	3.4	3.3	No data
ASEAN Average NRI*	3.9	4.0	4.0	4.2	4.1	4.1

*own computation

on adding new modules and fine tune” their already existing systems. In a like manner, they also perceive ICT as an enabler that facilitates retooling or constant education of their employees. Instead of conducting group trainings, they are providing employees avenues to do them on their own whenever applicable. Similarly, a leading pharmaceutical company in the Philippines also came up with virtual libraries which their employees can use on a subscription basis.

Just like in most undertakings, funding is always an issue. Though beefing up an existing ICT facility requires cost, it cannot be denied that the use of appropriate technology results in ease and convenience in the performance of daily tasks. Benefits easily accrue to employees and customers. In the case of an on-line shopping store, for as long as there are smart phones and an efficient connectivity, customers can do away with long queues and unnecessary follow-ups. They can also monitor the status of their orders real-time by installing an application connecting them to the online shop. In the same manner, post-sale transactions can be facilitated by the appointment feature of the same application. Likewise, a leading research university has invested heavily in an online enrolment facility, online library and journal subscriptions, and online registrar-related transactions to improve efficiency and to enhance productivity.

In today’s hyperconnected world, an account in the social media is almost a necessity. With ICT enabling this, information are easily communicated and disseminated. Social media provides a cheaper platform in fulfilling core business functions such as marketing, logistics, and post-sale services. This current development is also being used by groups that push for customer rights and protection. Barring censorship and regulations, they are free to share experiences and express concerns with online products and services.

Managing challenges

The imperatives that lead to benefits that I have mentioned do not simply come as “free gifts” in a world where challenges exist. For these benefits to be

realized, risks that may surface have to be kept at a minimum or an established level of acceptability. Notable challenges include perception toward security and operational feasibility, readiness in governance of ICT, purchasing power and affordability, managing scalability, and censorship and regulations.

Though security has long been identified as a critical success factor for businesses that invest in ICT, the number of reported cases of identity theft and hacking lately especially in the banking sector is triggering the alarm and calling for a more stringent security policies. In this case, we have to realize that security is a management issue and not an ICT issue (Romney & Steinbart, 2012). There is a need to evaluate the effectiveness and responsiveness of an ICT infrastructure in terms of vulnerability to attacks and arrests. Multiple layers of control in order to avoid having a single point of failure need also to be employed. We have to realize that if stakeholders’ perception of security is not addressed, benefits expected to be derived from ICT will almost be impossible to realize. With respect to operational feasibility, lack of knowledge is best addressed by providing ample trainings. Awareness is a strong deterrent for operational incompetence that, when not addressed, results in chaos and disaster.

Furthermore, ICT should never be viewed as a total one-all, be-all solution. In many cases, ICT can be a double-edged sword. While addressing existing risks, we have to recognize that a new risk of different nature might be created along the process. Readiness in governance of ICT dictates that everything should start with a plan. Without a governance plan, balancing between optimizing benefits and managing risks would be an ordeal. We have to understand that ICT is just part of a complete process and is not an end in itself.

Information and communications technology involves money and it is not just petty but a considerable amount of investment. With tight cash flows, most businesses have to convincingly justify the need to acquire and to beef up new and existing ICT

infrastructure as priority for the use of cash is given to profit-generating activities. Though ICT brings economic benefits, their timing can be uncertain at times. Because of this, the existing ICT infrastructure is being left as is for as long as it still continues to serve its basic purpose.

At the moment, it is not only being connected that matters. What also matters is the quality of connection as the number of those who access increases, whether or not there are down times and how often they are experienced. The operative words are faster, online, real-time, and available. In this case, businesses are expected to manage scalability. Scalability is the system's ability to grow smoothly and economically as user requirements increase (Hall, 2013).

Finally, there are several policies being presented on internet censorship and regulations. Among them are self-regulation and end-user voluntary use of filtering and blocking techniques, government-mandated blocking of access, and government prohibition of public access. At the moment, there is only the Republic Act No. 8792 or the E-Commerce Act of 2000 in the Philippines as the existing law governing business and government transactions done electronically. In spite of this, the legislation is yet to come up with a more explicit regulation on content censorship and public access. Because of this, users are susceptible to taking everything they read online at face value which brings information risk to a maximum level.

Moving forward

Just because challenges exist does not mean that we have to turn our backs from ICT and just disregard what NRI tells us. As an overall guide in formulating appropriate responses, it would help if we incorporate the principle of costs versus benefits. We have to carefully identify each benefit and trace what took for each of them to be realized. By doing this, we might find out that several benefits share a common cost. If we would not do this, we might end up double or triple counting a particular cost thereby making the

total costs outweigh the total benefits, which should not be the case. After itemizing each cost and benefit, determining the equilibrium point should come next. The key word, I believe, is balance. The point where costs and benefits equate to each other should be clearly marked as the critical point. From there, a sound decision can already be made.

Having established this let me direct my recommendations to businesses that invest in ICT. The major challenge that has to be addressed is security. It would help if they get a seal of assurance as soon as possible. They can avail of the services of an assurance provider for this purpose. An assurance provider is a third party that is being contracted to assess the reliability (which includes security, privacy, confidentiality, processing integrity, and availability) of an information system (Romney & Steinbart, 2012). This has to be communicated as well to all stakeholders especially the customers. Ensuring visibility of the seal of assurance in their websites will dispel any doubts as to the security and reliability of their online system.

As to readiness in governance of ICT, it would help if businesses review existing ICT governance plans and benchmark such with that of Control Objectives for Information and Related Technology (CobiT) version 5, a readily available governance framework developed by the Information Technology Governance Institute (ITGI) of the Information Systems Audit and Control Association (ISACA) (ITGI, 2015). CobiT started as an audit tool which later evolved into a management tool because of the global acceptance and relevance it has achieved not only among auditors but also among businesses that used it in managing their ICT (Hunton et.al., 2004). For optimal benefit, goals which include future growth (scalability) must be set first before putting ICT up to ensure congruence and alignment.

In ensuring management support to ICT investments, it is best to involve top management from the start. Though an appreciation of the benefits that can be derived from ICT may take some time, project champions may start by advocating that ICT is not

an end in itself but part of a dynamic process which demands multi-stakeholder effort. Once successful, this can permeate into the entity's strategic plan. When that happens, earmarking a decent amount of money to fund ICT initiatives and projects will be less difficult.

As to censorship and regulations, it would help if businesses through their industry groups lobby with the legislators and set a clear mandate as to ICT and the peripherals that go with it. Though having RA No. 10844 passed into a law is a good indicator of a positive change coming, the legislation has still to be keen on choosing and embracing a censorship framework that would serve as the backbone of a feedback system. In the same manner, the business sector has to be involved in crafting the implementing rules and regulations of this new law.

Finally as to improving connectivity (quality and price), now is an opportune time for businesses to influence existing regulations on network licensing requirements. To strengthen their case, it would be beneficial if they come up and submit a report identifying gaps between service level agreements and actual delivery of network services. This may then open possibilities for foreign network providers to also invest in our country.

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