BANKING INDUSTRY IN SRI LANKA: REPOSITIONING TODAY'S BUSINESS MODEL TO COPE WITH DISRUPTIVE CHANGE

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Preamble

In this digital age, the word "disruption" has a new meaning. In the past, disruption implied something negative and invasive – and for many companies, it still does. Disrupting the marketplace is a process towards improvement. From a technical perspective, it's clear that more and more companies are embracing digital disruption and they are also aware that initiatives they take today, may not show any immediate impacts but in the future. Most of them are on the alert and want to be proactive instead of reactive. If digital disruption is the change that occurs when new digital technologies and business models affect the value proposition of existing goods and services, then creating a technology that makes current products and services obsolete is a tall order. It is therefore, important to understand whether one's business is on the right path to becoming disruptive.

While powerful forces are changing the world today with impacts on all countries, sectors, companies, and increasingly, on workers and the environment, on-going digitization is transforming existing structures and organizations thereby creating even greater impact beyond what was originally envisaged. In this process of transformation, either disruption is voluntarily adopted impacting the market place or disruption has forced involuntary shifts in businesses in the market place. This understanding is relevant to the banking industry in Sri Lanka as banks should adopt appropriate technology in the process of repositioning their business models and be prepared to embrace disruptive change before their non-bank competitors approach bank clientele through technological advances.

This article attempts to discuss the key features of disruptive technology and how the banking industry in Sri Lanka should be in readiness to embrace such technology through repositioning of the business models of banks. The article consists of four main sections: Section 1 introduces the concept of disruptive change with its key characteristics, benefits and real world examples. Section 2 illustrates how to confront disruptive change through repositioning of operating and business models and how banks elsewhere have adopted advanced technology

and benefited. The main challenges faced by the banking industry in Sri Lanka in adopting disruptive technology, the sector's readiness and the importance of reaching a consensus on how to move forward as a group are discussed in Section 3. Finally, Section 4 presents concluding remarks.[1]

Section 1: Key Characteristics of Disruptive Change

1.1 What is Disruptive Technology?

The term was defined and first analyzed by the American scholar Clayton M. Christensen and his collaborators beginning in 1995, and has been recognized as the most influential business idea of the early 21st century. According to Christensen[2] "the technological changes that damage established companies are usually not radically new or difficult from a technological point of view''. They do, however, have two important characteristics: First, they typically present a different package of performance attributes—ones that, at least at the outset, are not valued by existing customers. Second, the existing customers value improvement at such a rapid rate that the new technology can later invade those established markets.

Disruptive technology significantly alters the way businesses or industries operate. It often forces companies to change the way they approach their business for fear of losing market share or becoming irrelevant, a feature moderately visible in Sri Lanka's banking industry. Recent examples of disruptive technologies include e-commerce and ride-sharing. Milan Zeleny[3] described high technology as disruptive technology. According to Zeleny, what is being disrupted is the support network of high technology. For example, electric cars have disrupted the support network for gasoline cars (network of gas and service stations). Such disruption is fully expected and therefore effectively resisted by support network owners. In the long run, disruptive technology bypasses, upgrades, or replaces the outdated support network. Joseph Bower[4] explained the process of how disruptive technology, through its requisite support net, dramatically transforms industries. In banking services too, the technology has the potential for revolutionizing the industry although the established banks typically have seen it as unattractive.

Social media is a disruptive innovation within communication which has been adopted by banks for frequent contacts although some banks require online messaging to be backed by written instructions. Social media has created a new market for payments that is now linked to mobile phones. Using various apps, mobile phone holders can have instant access to their current and savings accounts held in banks. Thus mobile phone customers can conveniently effect most of their retail payments without visiting a bank branch.

[1] I am very grateful to Mr. Dhammike Amerasinghe for critiquing this Article and providing valuable editorial comments.
[2] Clayton M. Christensen (1997), "The Innovator's Dilemma"
[3] Milan Zeleny (2009) , The Innovator's Dilemma
[4] Clayton M. Christensen and Joseph Bower (1995), Disruptive Technologies: Catching the Wave,

1.2 Benefits of disruptive technologies: [5]

Why new technology is necessary in the first place should be clearly understood before moving forward. It's important that firms/banks assess why the existing process is broken down or inefficient and whether inserting new technology might be the solution.

• **Solve problems:** The tacit understanding is that a disruptive technology should make things easier, not harder because many technologies in the marketplace make things worse before they get better. Sophisticated technology or a digital process does not necessarily mean it is solving problems. Hence is the need to keep one's value propositions and customer experience at the forefront in the use of technology. For example, mobile phone banking by banks or their links with non-bank mobile phone companies has solved the long drawn out "last mile delivery of payment services" problem of customers.

• **Change the competitive landscape:** Disruptive technologies usually take the marketplace by surprise. Like how Apple, a computer company, became the biggest competitor of photography companies - Kodak, or cellular companies or Motorola? Truly disruptive technologies make almost any industry a target. Disruptive technologies have the flexibility and longevity of morphing into something that almost anybody from any industry can find valuable.

• **Cause a behavioural shift:** Digital disruption can be classified as a movement. When it comes to banking services, disruption takes place only when banks and their customers adopt, embrace and eventually can no longer live without the technology. Until recent times, the telephone, e-mail, camera, address book and video games did not all exist within the same device and people accepted it. But today, anybody with a smart phone would not be willing to return to that antiquated way of life. That's how disruptive technologies have solved a problem in the marketplace. "Truly disruptive products and services uncover problems that end users never realized were problems in the first place but it is part of a change in behaviour, and it is crucial for disruption".[6]

1.3 Real World Examples of Disruptive Technology

Online conglomerate Amazon.com, Inc. has used e-commerce to disrupt the retailing industry completely. Consumers can now order products with the simple click of a button and have the purchased items delivered the next day, or in some locations, on the same day. Intercontinental transactions might take a little longer. Online retailers like Amazon also use economies of scale to offer significantly lower prices than their traditional competitors. Consumers have benefited considerably from disruptive e-commerce, but it has made it more difficult for small producers and brick-and-mortar stores to maintain profitability. The taxi industry is another example where disruptive technology has had a significant impact. Uber Technologies,

[5] Kelly McDonald (2018),Three Characteristics of Digital Disruption, Technology and Innovation , May 22
[6] Kelly McDonald (2018) Technology and Innovation, May 22

Inc., a San Francisco-based transport networking company, uses peer-to-peer (P2P) technology to provide a ride-sharing service that exploits the shift to a more decentralized "sharing" economy. In the practical world, the popularization of personal computers illustrates how knowledge contributes to the ongoing technology innovation. The original centralized concept (one computer, many persons) is a knowledge-defying idea of the prehistory of computing. The era of personal computing brought powerful computers "on every desk" (one person, one computer). Adequate knowledge creation and management come mainly from networking and distributed computing (one person, many computers). For the first time, technology has empowered individuals rather than external hierarchies. Airbnb is another example of disruption. Similarly, advanced robotics to artificial intelligence (AI), are the leading examples of the most disruptive technologies in the market place.

1.4 Disruptive Change, Accelerated Pace and Challenges:

Digitalization will also transform people's jobs[7] (McKinsey-2018) resulting in major job losses and transformations across all sectors and salary levels, including groups previously considered safe from automation. The McKinsey study also estimates that about half of all paid activities could be automated using existing robotics, AI and machine learning technologies. For example, computers are learning not just to drive taxis but also to check for signs of cancer, a task currently performed by relatively well-paid radiologists. Similarly, purpose built bank robots welcome customers to banks.

As the McKinsey study underscores, after a slow start, the pace of transformation continues to accelerate. The ubiquitous smartphone was inconceivable to the average person at the turn of the 21st century. Now, more than 4 billion people have access to handheld devices. Present mobile phones have more computing power and these tiny supercomputers are often used only as humble telephones, leaving vast computing resources idle. Mobile phone usage is clearly a result of embracing disruptive technology.

Currently, disruptive technology is driven by the convergence of Technology, Intelligence and Customer expectation. Mobile technology has revolutionized payment industry. Mobile phones and smartphones have caught up so speedily that there is hardly an adult without a smartphone. According to research, 77% of adults now own a smartphone. Advances in technology, surrounding mobile and on-line payments, data analytics, and cloud computing, seemed to flourish overnight and dramatically affected the overhead expenses required for businesses to launch their new customer-centric business models. The technology also enabled operators, through new business models, to reach customers and collect necessary data. EBay claims to have amassed one of the greatest consumer repositories of data on the web today. Customer expectations is likely a result of advances in technology and data analytics, but it is also the single most powerful influencer of DI.

[7] McKinsey (2018)

Section 2: Key Issues to be Addressed Prior to Confronting Disruptive Change

2.1 Who are the real competitors in disruptive technology?

In the financial services industry, competitors are no longer the peer financial institutions, but technology players, which are structured differently and able to offer simple solutions for specific needs in the value chain. Identifying the sources of competition is therefore key to confront disruptive technology. While traditional banks have created and focused on a complete array of products and services in the present and future business models, Fintechs and startups concentrate on solving a specific 'pain point' that affects just a small fraction of banking clients. The sum of all these fractions coming from different technology players becomes a big risk for the ongoing and future business of banks.

2.2 How does technology translate into greater empowerment for clients?

The new type of customer – the Millennial – for whom banks have to develop a new generation of banking products and services, demand things with a simple click of a smartphone. They also demand modern financial products and services as this digitalized age to change the customer behaviour. The Millennials do not like permanency in connections, too much stress and complexity as they crave immediacy in all aspects of their lives. Banking products and services have to match demands of new generation customers. Meanwhile, the traditional group of customers and senior citizens prefer more permanency, face to face banking relationships, archaic systems and user friendliness.

2.3 What are the new value propositions of future business models?

Research has showed that customers are demanding a totally new type of products for their financial lives. In response, some banks have studied new technology-based competitors and nascent start-ups to create products and financial experiences using a new value proposition. There appears to be four main attributes: data analytics; customer-centered design; simple and accessible devices; and data sharing. These four attributes are the essential elements to build complete experiences around specific needs for bank clients, which may form important components of their future business models. Banks may have to transform their work methodology from traditional project management to an agile process that uses interdisciplinary and multi-skilled teams working in a very fast product creation and iteration cycle. The decision-making process has to take into consideration the different aspects of these new working methodologies.

2.4 Decision to give up old strategies and business processes

Disruptive technology in banking is pushing banks to take more explicit strategic decisions. Many banks have recognized that they need a truly differentiated strategy as the industry's economics have come under pressure from new technology and entrants with disruptive business models[8]. Large technology firms such as Internet giant Alibaba in China and messaging giant Kakao in South Korea have also been moving into markets such as payments, raising customer expectations for better digital tools and simple, convenient service. As a result, more banks are compelled to make difficult strategic choices. Citibank and HSBC, for example, have decided to leave consumer banking in Brazil where they had invested heavily for many years; others are reinventing their core identity, with Citigroup CEO Michael Corbat characterizing Citi as "a technology company with a banking license."

Banks are finding it even more challenging to adapt their operating models quickly to a new strategy. Much effort and money goes into operating legacy processes and dealing with regulatory requirements to keep the bank running. Despite their long histories, banks are not immune to competitive market forces, especially as an influx of start-ups look to capture business opportunities in areas traditionally dominated by banks. The financial services market is rapidly evolving to include major non-bank players in P2P payments, real-time payments, and other growing sectors. Consumers expect all businesses to adapt to their changing needs with the same speed and agility as does the tech industry, leaving banks to play a complicated game of catch-up with more nimble technology pioneers. Outdated legacy systems hinder a bank from driving innovation, attracting new customers (especially those of younger generations) and progressing into the new age of business. Gartner[9] insists that "despite all the innovation labs and such, many traditional institutions still aren't really transforming digitally. If they indeed are, the pace must pick up significantly. Many banking providers foolishly believe they aren't in jeopardy because their digitized competitors aren't making major inroads yet".

2.5 Familiarization with Critical Changes and Selection of a Core Strategy for Operating and Business Models

Operating model is the blueprint for how resources are organized and operated to accomplish tasks. It compels businesses to decide where to compete and focus on the value chain spectrum[10], i.e. manufacturing (product creation), hybrid or distribution focus (Figure 1-Annex1). Most banks will choose a hybrid of the two, based on their relative strength in individual products, customer segments and internal capabilities. The distribution component of new business models has attracted many regional and community banks, credit unions and

[8] Thomas Olsen, Mark Judah, Joe Fielding, Niels Peder Nielsen and Stephen Phillips (2017) New Bank Strategies Require New Operating Models, May

[9] Gartner Report (2018), isbanking's future really that bleak? and Stefan van Der Zijden and Thomas Klinect (2018), Gartner report: Use continuous modernization to build Digital Platforms from legacy applications (04, October)

[10] Thomas Olsen, Mark Judah, Joe Fielding, Niels Peder Nielsen and Stephen Phillips (2017) New Bank Strategies Require New Operating Models, May 1

parts of large banks that want to focus on areas where they have a competitive advantage. That means they outsource many products and processes such as credit cards, asset management or insurance, as well as utility-type activities such as mortgage processing. Success with the distribution model hinges on customer analytics, strong customer relationships, channels that are simple and easy to use and economies of scope achieved by gaining a large share of the customer's wallet.

Disruptive technology makes it easier to unbundle the value chain, and the distinction between manufacturing and distribution is expected to accelerate over time. Global banks like Goldman Sachs, State Street and Black Rock aim to build world-class solutions for specific product needs and client segments, including other financial institutions. Succeeding through this model hinges on attaining large-scale product leadership and technological expertise.

2.6. Replacing legacy IT systems:

This is a costly and risky undertaking that requires cooperation across multiple divisions, departments, and sometimes even countries. One strategy being explored by some to address large infrastructure issues is to implement small-scale solutions to improve data sharing and communication between existing systems but it may create an even greater technological complication, especially when targeted solutions are designed and implemented by disparate third-party providers. Another strategy is to rectify legacy system challenges on their own but often they hit roadblocks somewhere in the process. This is where a technology partner can help banks avoid wasting time and resources by providing a comprehensive diagnosis of issues at the onset, developing the most suitable solution(s), and delivering them to market quickly and efficiently, rather than going at it alone. Working with a technology partner can help a bank gain a unique bird's eye view into the technology needs of a fast-changing industry.[11] The global financial crisis, prompted a greater aversion to risk, and many banks' legacy talent pools, processes and IT systems remain ill-suited to major change. It is not clear whether, banks in Sri Lanka have done their costing on each of those business pillars and taken appropriate decisions to upgrade, transform, overhaul, replace legacy IT systems as such information is not in the public domain.

Moving away from legacy Information technology (IT) is such a complex task that many banks have delayed it. To accommodate disruptive change, it will be necessary to invest today on new IT network and systems. To keep IT relevant in traditional banks, they should: (a) limit legacy IT spending and reduce it wherever possible to free up financial resources for new IT systems, such as the cloud and enable all channels with digital technology; (b) move to straight-through, scripless processes; and (c) use modular systems architecture that will enable future additions. This requires rethinking of the role, structure and processes of critical functions such as IT, risk and compliance. For instance, more banks are moving to open architecture, which means they no longer have complete end-to-end control internally of their IT systems or data.

[11] Bethany Frank (2016)The great challenge of addressing legacy systems, 15, March

This trend has been spurred by the migration to cloud solutions, and will further accelerate with the spread of distributed ledger technology (DLT), smart contracts and open application programming interface (API) systems that integrate activities across the financial system. Banks will have to redesign processes to understand and monitor activities handled by external providers, not necessarily by the bank itself.

2.7 Repositioning New Operating Model for the New Technological Age

How can bank executives design and build an adaptive operating model that will sustain their growth and profitability targets? As shown in Figure 2, there are a few critical elements, such as, the structure, accountability, governance, ways of working and capabilities of the operating model that connect strategy and execution and capabilities banks or any other enterprise should focus on, in repositioning their operating/ business models. This approach allows them to build models that suit their strategies-in-the-making allowing new priorities to emerge. Banks need to develop operating/business models uniquely suited to their strategy, rather than models based on generic industry benchmarks. Often, elaborative roadmaps, the capability plans, performance management and feedback loops are missing altogether.

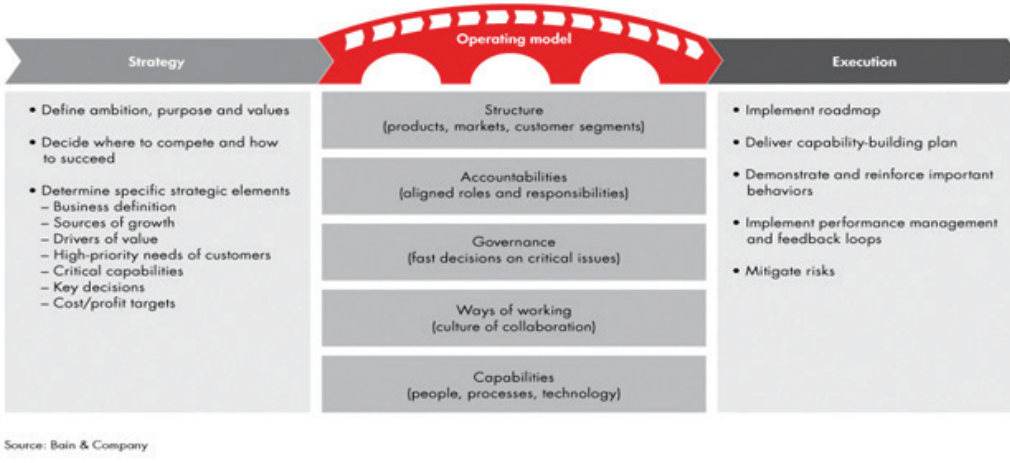


Figure 2: The operating model is a bridge connecting strategy and execution

2.8 Areas of investment in readiness for disruptive change

2.8.1 Advanced Automation and AI: As Mark Zuckerberg, the founder of Facebook said, "When companies adopt technology, they do old things in new ways, when companies internalize technology, they find disruptive new things to do". Therefore, automation itself may or may not lead to the change in the business-model. An explosion in algorithmic capabilities, computing capacity, and data is enabling beyond-human machine competencies and a new

generation of system-level innovation, such as the driverless car. Most US and European banks as well as leading Asian banks have been using AI combined with automated services and are ahead of many others.

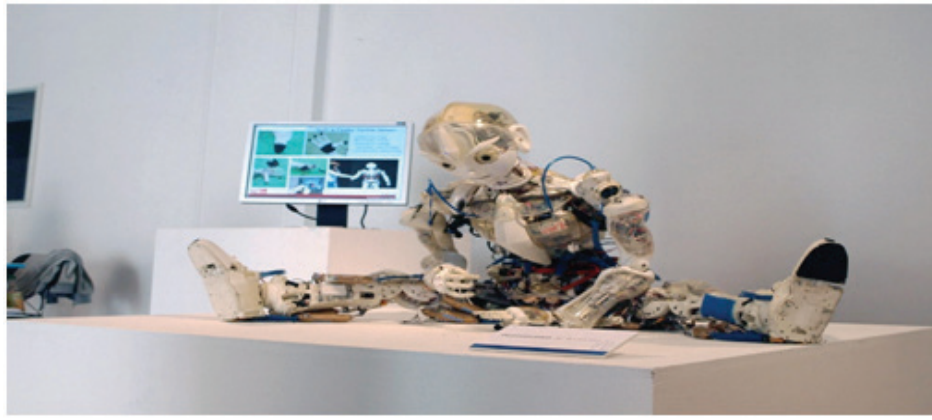


Figure 3: Artificial Intelligence
Source: Emerging Technologies

Figure 3 above, depicts a special type of intelligence that is exhibited by computers and other machines. It's a flexible agent that perceives its environment and takes necessary action required for the success of that particular phenomenon. AI is used when machines copy the cognitive functions of the human brain in learning and solving problems. As machines become increasingly capable, other facilities are removed from the definition. Although this area has a long history, professionals in the field are getting ever closer to achieving AI[12]. In future AI will aim to emulate human intelligence. The world is already into the age of "narrow AI", where a machine can be programmed to do one or a few precise tasks, and the next stage toward achieving AI will be machines that learn on their own accord, without human intervention. This deep learning is currently a very well-funded area of research[13]. In this context, there is no point in banks debating about potential disruption of AI, instead the debate should be how soon they can get ready to embrace new technology and the extent to which they should change their business models for survival. This calls for significant investments by banks.

2.8.2 Robotics and Robots: is another exciting innovation of disruptive technology. It corresponds with capable robotics or robots that have enhanced dexterity, senses, and intelligence. New robots can perform tasks that were previously thought to be too hard or expensive to automate. Banks can benefit significantly by way of cost saving using robots for their document handling purposes, especially in bundling, unbundling and sorting currency notes or documents and for cleaning purposes. Globally, high end customers have already started making use of robotic surgical systems, robotic prosthetics, currency storage (Singapore) and

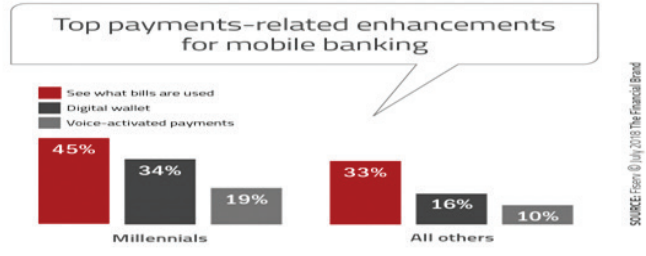
[12] Derin Cag, Amazing Examples of Disruptive Technology
[13] Professor Veranja Karunaratne (2019), World Affairs in Post-Modern Diplomacy: Science and Politics, Shelton Kodikara Memorial Oration-BMICH -organized by the Regional Centre for Strategic Studies, 6th August,

nano-robotics to name a few. Robotics undoubtedly is one of the most disruptive technologies of the 21st Century. Banks should be ready to identify the areas where robotics would save extensive labour based customer services. Investment in Robotics would pay off in the future as banks have to look for labour saving and efficient delivery of banking services.

2.8.3 Block chain or DLT: Block chain, (the technology behind Bitcoin), is a decentralized distributed ledger that records transactions between two parties. It moves transactions from a centralized server-based system to a transparent cryptographic network. The technology uses P2P consensus to record and verify transactions, removing the need for manual verification. Block chain technology has enormous implications for banks, in that, a bank could execute P2P trade confirmations on the Block chain, removing the need for custodians and clearing houses. This will reduce financial intermediary costs and dramatically expedite transaction time. Its security is assured by the sophisticated cryptographic processes. The Block chain technology is likely to revolutionize finance by making transactions faster and more secure, while better information on potential clients can improve the pricing of loans through better assessment of the likelihood of repayment. Regulatory frameworks need to ensure financial integrity and protect consumers while still supporting efficiency and innovation. Singapore has already moved forward with Block chain technology.

2.8.4 Mobile and digital banking services: Today, markets are flooded with a plethora of apps. Consumers who use online and mobile banking, use the two channels for different purposes to some extent: According to the Fiserv report[14] "online banking is used to get things done, but perhaps not always urgently." In the UK, Internet transactions already account for almost one-fifth of retail sales, excluding gasoline, up from just one-twentieth in 2008 and e-commerce sites are applying their data skills to finance. The Chinese e-commerce giant Alibaba already owns a bank and is using knowledge about its customers to provide small-scale loans to Chinese consumers. Amazon.com, the American e-commerce site, is moving in the same direction. DBS Bank in Singapore has already opened a "digital only bank" in India and seems to be doing good business.

As shown in Graph 1, three quarters of consumers use online banking to pay bills compared with just over a third that use mobile banking to pay bills.



Graph 1: On-line Bill Payments
Source: Fiserv

[14] Martin Mühleisen(2018), The Long and Short of the Digital Revolution, Finance &Development, June Vol 55, No 2, PDF version

In its annual survey on consumer payments, Fiserv found that consumer use of online bill pay grew steadily year over year, with 59% of consumers saying they use it today. They have also expanded their use of newer services, including digital wallets, P2P payments, and mobile bill pay with significant annual increases. Accordingly, Digital wallet use is up 53%; Mobile bill pay is up 48%; Use of P2P services provided by a financial institution are up 44%.

Consumers are not always logical in their banking habits. They crave more mobile banking features despite security concerns. They are scared about data security and privacy, but that doesn't stop them from using online or mobile banking tools heavily. Bank customers are also fairly adventurous, willing to try new things even when it means taking a few risks. Despite years of bad press about cyber-attacks and data breaches, their enthusiasm for digital banking solutions has not dampened. Most people see more advantages than risks when it comes to digital commerce and digital banking. Banks may be better off in establishing joint ventures with mobile companies rather than trying to provide lower scale retail payment facilities to mobile savvy customers.

Other mobile banking enhancements for which consumers expressed interest include: Ability to temporarily deactivate credit and debit cards in case of loss or theft (48%); Instant balance information (36%); Touch ID (31%); All-account access (29%). The current technological revolution depends on computers, the technical backbone of disruptive technology which was eagerly embraced by banks. The digital revolution is well under way, transforming jobs and skills, overhauling industries such as retailing, publishing and banking in the near future. As shown in Figure 4, the revolution in payment services from cash to cards and, to mobile payments through smart phones is one of the best examples of disruptive change and easy adoption by masses. Promoters of internet of things (IOT) expect the market reach of a 25 bn connected devices with an aggregate annual revenue of US 1.1 Tn by 2025 that is only 5 years ago. Asia pacific is to lead this revolution by at least 10 bn devices[15]

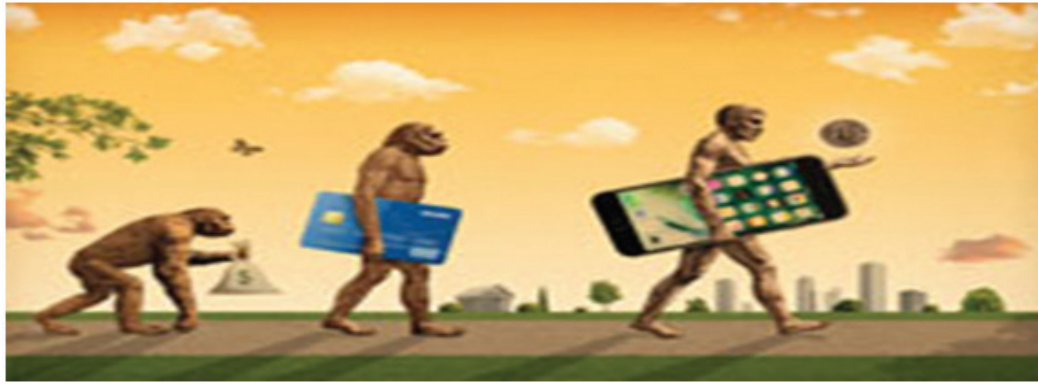


Figure 4: Revolution in Payment services
Source: Finance and development, June 2018

[15] C Wattegama (2019), Opinion- AI, Big data, Cloud, Edge, IOT, 5G: Can SL be an Innovator, not a Consumer, Daily Mirror, August 16

2.9 Assess the critical role of information in banks' future business

The disruption in other industries has shown the value of real-time information. Cloud computing, big data and other new technologies allow information to be processed in such a way that products can be designed for different market segments, while also being specific in what is being offered to clients.

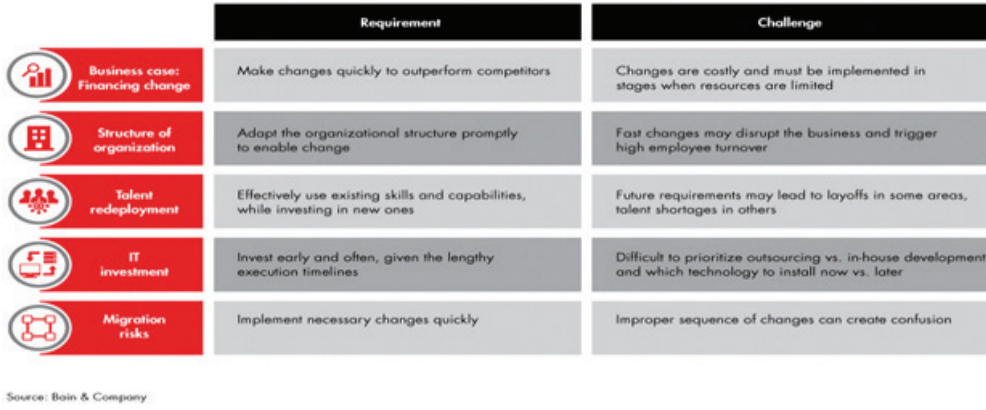


Figure 5: Banks have to weight difficult trade-offs in the sequence and timing of organizational changes.

Banks have always been able to generate a huge amount of information for every client but, until recently, only a fraction of this was used to analyze new trends of customer demand, create new products and services and expedite delivery services. As indicated in Figure 5, banks have to trade-off on a number of challenges with respect to the establishment of the business case, structure of organization, talent redeployment, and IT investment, triggered by disruptive change. For example, attempts to implement quick changes may put pressure on their financial and human resources as adopting organizational changes may results in high employee turnover. Some of the trade-offs may be difficult while others may not take much energy and time.

2.10 How digitally savvy are banks and to what extent should they embrace technological advances?

Bankers have been harnessing advanced analytics and the IOT to transform their operations, and those in the forefront reap the benefits: banks that are digital leaders in their sectors have faster revenue growth and higher productivity than their less-digitized peers. They improve profit margins three times more rapidly than average and are often the fastest innovators and the disruptors of their sectors. The forces of digital banking have yet to become fully mainstream. For example, banks can change their business models to suit profit targets or to increase their market share, which may have profoundly different implications on customers, costs, leadership, customer experience and talent. Many banks are not interested in enriching organizational ranks with tech talent to ensure that the bank has the capability to understand

the technology that is disrupting the organization and industry. By their very nature, general-purpose technological revolutions are also highly disruptive. Many benefits come not simply from adopting the technology, but from adapting to the technology. The advent of electricity generation enabled power to be delivered precisely when and where needed, vastly improving manufacturing efficiency and paving the way for the modern production line. In the same vein, Uber is a taxi company using digital technology to deliver a better service.

Overall, digital transformation should become a key strategic priority in banking although in many countries, it is driven by Fintech and startups (many are disruptors) and banks are now facing the challenge.[16] According to McKinsey calculations, banks could lose around 29-35% of their revenue to new disruptors. Banks will require a fundamental change in thinking and innovation should become a part of their DNA. Unlike FinTechs, banks do not always take targeted action to pursue specific ideas, instead try to tackle everything at once. Banks also should think outside-in rather than inside-out[17].

2.11 Collaboration between banks and Fintech/ start-ups

In a competitive environment, banks and startups would need to work in partnership. Products and services will be designed based on client needs, with the capacity to adapt and tailor the offering to suit each individual's specific requirements. Nearly a decade ago, when the Fintech ecosystem became a real competitive force in the banking industry, both parties understood the benefits of collaboration. Fintech and start-ups entered as a disruptive force with a totally fresh vision of what banking services should be, but banks have the information and the long-standing industry know-how. Therefore, collaboration is a natural way to find the best option for customers and in turn improve their financial lives. Ecosystems are critical for the continued progression of the banking industry and such systems are better provided by Fintechs and start-ups. Collaboration with a tech company rapidly improves skills and knowledge; reduces the learning curve; and has the potential to walk the last mile in terms of financial inclusion. As to the customer, partnership may offer improved financial services, when banks create products based on real-time information and new design methodologies in order to meet their clients' needs in this era of disruptive change.

2.12 Realization of potential impacts of Disruptive Technology

Often, larger incumbent banks and companies only focus on their largest and most demanding customers, which allows disruptive businesses to target overlooked customer segments and gain industry presence. If banks are state owned, they have to comply with their statutes and procurement processes which are usually less advanced than those of global and private banks. While incumbent banks often plan to make incremental improvements to the way

[16] Jayamaha R (2017) , Changing Dynamics- Banks of the Future: Banks Take your heads out of the sand, Association of Professional Bankers , Annual Convention

[17] Jayamaha R (2018), Regional Congruence: harmonizing policy and Economic prosperity, Economic and Fiscal policy, Association of Professional Bankers , Annual Convention

they conduct business to improve efficiency, they're unlikely to be able to thoroughly prepare themselves for disruptive technologies.

Risk-taking banks may recognize the potential of disruptive technology and target new markets to try and find ways to incorporate it into their business processes – the "innovators" of the technology adoption lifecycle. Banks that fail to account for the effects of new, disruptive technology may find themselves losing market share to competitors that have discovered ways to integrate the technology into managing labour and capital as well as other resources. Disruption opens up windows of opportunity to create massive new markets. However, to capitalize upon these new markets, executives must simultaneously re-position their traditional core banking business models while leading a separate and focused team on a separate and distinct march up a new hill.

Section 3: Readiness of the Banking Industry in Sri Lanka to Face Disruptive Change and Move Forward Together

3.1 Snapshot of the banking industry in Sri Lanka in 2018

As of December 2018, the banking sector comprised 33 banks, of which 26 were licensed commercial banks (LCBs) and 7 were licensed specialized banks (LSBs). Of the 26 LCBs, 13 were branches of foreign banks. Excluding the Central Bank of Sri Lanka (CBSL), the LCBs and LSBs dominated the financial sector with a market share of 62%. The total asset base grew at 14.6% surpassing Rs 11 Tn by the end of 2018 while total gross loans and advances portfolio of the sector recorded a notable increase of 19.6% reaching Rs 7.6 Tn. Reflecting the deterioration of asset quality, gross non- performing assets (NPA)ratio grew by 3.4%in 2018. Figure 6 represents the highlights of the behaviour of the banking sector in 2018 compared to 2017.

The risk weighted assets increased during the year due to rapid expansion of loan portfolios. There was no apparent liquidity risk in the system while the banking sector managed to marginally reduce the interest rate risk[18] during 2018. Deposits continued to be the main source of funding (72% of total liabilities). As was in the previous years, interest income of the banking sector grew at a higher rate of 14% compared to interest expenses of 12.8% during 2018.

In addition, banks in Sri Lanka continue to live with high cost/income ratios reflecting their significantly high workforce (state owned banks) and the top heavy and highly layered management level staff complement of private banks. In the near future, banks would be required to consolidate, automate, digitize and bring in disruptive technologies to reduce cost ratios before they are threatened by some of the already digitized global or regional banks. Although global digital disruption is near the doorstep of many enterprises, banks in Sri Lanka are complacent and unconcerned about it or tend to ignore rapid disruption by non-banks.

[18] Measured by the interest rate sensitivity ratio (i.e. the interest bearing assets as a share of interest bearing liabilities with maturities of less than 12 months)

Although all banks complied with Basle III capital adequacy requirements,[19] Basle III regulations compelled banks to maintain more stringent capital, liquidity and leverage ratios. In 2018, banks also met Sri Lanka Financial Reporting Standards (SLFRS - 9) requirements but the deteriorating asset quality forced banks to increase NPA provisioning significantly.

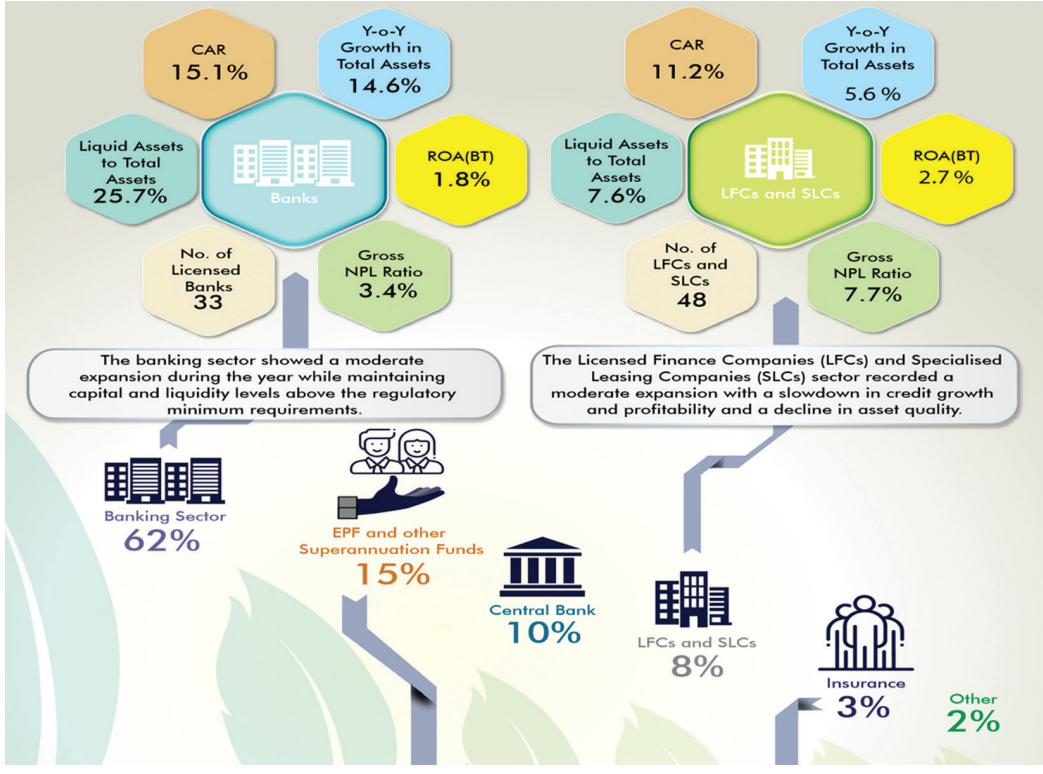
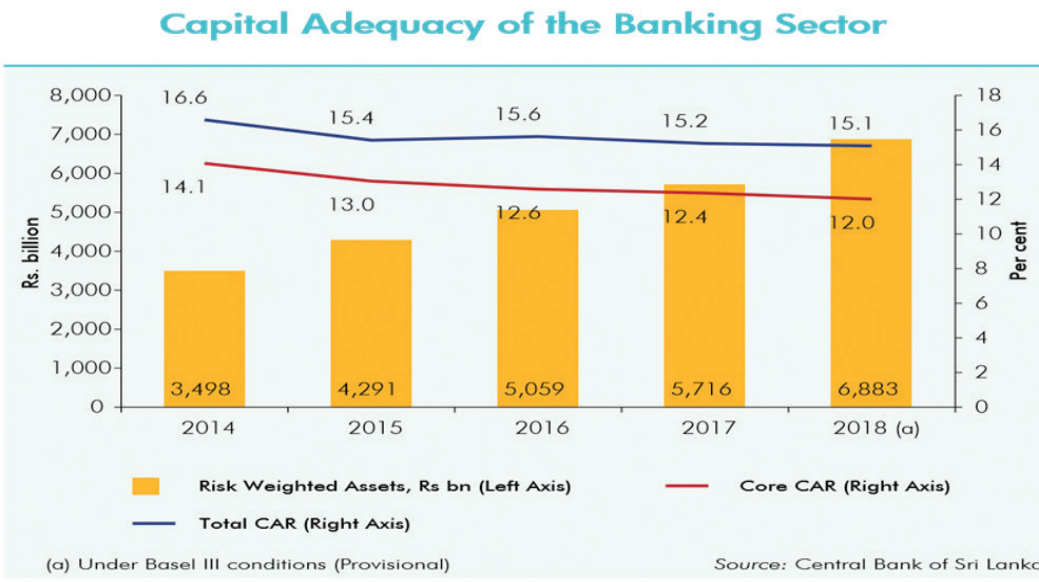


Figure 6: The behaviour of Sri Lanka's banking sector in 2018
Source: Central Bank of Sri Lanka Annual Report 2018

As seen in Graph 2, while risk weighted capital of the banking sector rose rapidly reaching Rs 6.9 bn, the total capital declined marginally in 2018 to Rs 15 bn compared to 2017, but compared to 2014, the decline is significant. A similar trend was seen in core capital as well with increased pressure on CAR in the near future. The past few years saw the introduction of a series of regulations to ensure a stronger banking sector through CAR and provision treatments. The requirement for more high quality capital, which has larger loss absorbing capacity, has led banks to raise capital through rights issues and equity infusions putting additional pressure on the shareholders.

[19] All banks were in compliance with the Basle III capital requirements during 2018.



Graph 2:

3.2 Banking Industry's perception of disruptive change

The banking industry in Sri Lanka is no exception to the initial spate of digitization and revolutionary disruptive technology. Many banks felt that disruptive technology is not something their mainstream customers want; that it is not an imminent threat to Sri Lanka's banking industry; and that the industry's projected profit margins aren't sufficient to cover high cost structures associated with the maintenance of high technology. As a result, the new technology was ignored in favour of what was popular with the best customers. Although domestic banks now feel that they lag behind on technological advances of global and regional banks, they still do not see acompelling reason to reposition their business models as there had been no major threat from the latter. Instead, the banking industry in Sri Lanka has been facing more threats from political uncertainty, unstable macroeconomic conditions, internal conflicts, social disharmony and in recent times, the threat to national security. In this background, disruptive technology was or is not the prime concern of banks. They concentrate on "daily firefighting" and their survival in an uncertain political, macroeconomic and national security environment. Generally, banks in Sri Lanka are a little aloof from non-bank entities and they do not see much of a threat from non-banks on the banks' future business. At the start, banks in their own way, resisted mobile payment operations introduced by non-bank operators although such operations rapidly raised the level of technology on attributes that mainstream customers' value[20]. Mobile payments and related apps have now topped the customer preference chart.

[20] Kelly McDonald (2018) Technology and Innovation, May 22

3.3 Lack of Comprehensive Deliberation and Readiness to Embrace New Technology

Bank officials have been attending many conferences on disruptive technology organized by vendors and promoters to understand how important the new technology is, but to date, there hasn't been a forum that discussed the main issues that would help banks to take a common stance on disruptive technology. Nor is there a consensus on the way forward by the banking industry. Banks in Sri Lanka do not seem to know whether the industry is at a turning point in how they do business, the extent to which they should embrace advanced technology and where the industry is in terms of adapting to disruptive technology. As banks elsewhere have done, they should discuss the following critical issues prior to embracing disruptive technology:

- What would be the focus (value chain) of banks in the repositioning of business models in readiness for the disruptive change? Should it be production, distribution or a hybrid of both? Is disruptive technology necessarily that new or have banks been living with this for a long time not knowing it was there to be used?

- How imminent is the threat of disruptive technology in banking business? If the threat is not imminent, what preparatory action should banks take in the interim?

- How much should banks reinvent all the time to remain current? Have the banks experienced many practical issues in adopting technological advances?

- How much should banks invest in deploying new technology and in what areas of the business model? In the present scenario of political and macro-economic uncertainties, can banks afford large investments? Or should they concentrate on critical alternative targets like recovery of rising NPAs, or raising relatively low cost capital from domestic and foreign markets?

In reality, the banking industry in Sri Lanka does not see disruptive technology or digital revolution as a serious threat. They also feel comfortable in handling, threats if any, at individual bank level rather than as a group because of the non-significant threat from non-bank financial institutions, including the recently established Fintech and startups. Banks are still complacent because of the general lack of public confidence in non-bank entities, the safeguards banks have from the banking regulator and lack of ability of disruptors to exert significant impacts on banking sector given its dominance in the financial services industry. Evidently, banks prefer to postpone addressing issues of disruptive technology, cautiously weigh pros and cons and slowly adjust themselves depending on their own agenda.

In Sri Lanka, usually, technology related "big bangs" are initiated by CBSL and in many instances, banks had to be mandated to adopt new technology. Long before many of the other countries in the region, CBSL provided leadership to modernize the payment and settlement systems in Sri Lanka and allayed fears of banks in moving towards digital technology. Banks

which enjoyed easy profits from archaic payment and settlement systems did not accept the change nor could imagine the significant benefits accruing to banks, to markets as well as to customers from the availability of speedy and risk free central bank money (intra-day liquidity) to settle their payment obligations. Most banks and primary dealers protested when the archaic and risky "end of day settlement system" for high value payments were replaced by "real time gross settlement and scripless securities settlement systems". Since then, there has been no large scale digitization projects initiated by CBSL. The retail payment reform process is being carried out by LankaClear by establishing the"National Payment Switch", another landmark in the payment system development in Sri Lanka. Here too, banks had to be given ultimatums to join the Switch as they prefer to tread along with their solo systems. In the circumstances, banks in Sri Lanka have to be characterized as complacent and that they prefer to move forward on their own than as a team. Nonetheless, it is high time for banks to openly discuss how vulnerable the industry is to disruptive technology and what action should be taken immediately if disruptive changes are imminent rather than depend on individual assessments.

In the absence of a clear strategy and plan of action by the industry, it is risky for banks to rely on individual technology plans promoted by vendors. What is prevalent in Sri Lanka is that banks are adept at competing with peer banks that offer the same products and services, but not with technology companies. Banks may have to change their future approach, strategy and business model now, to be in readiness when disruptive technology descends on them. Banks see new business opportunities in new technology, but express reservation in using them on grounds of resource constraints, fear of being open to competitors, potential risks of not getting technology right, lack of awareness and ignorance of current trends. Banks need not go for complex business models as there is no conducive environment for such high tech products nor demand for them in Sri Lanka, but they should review all aspects of digitization and disruptive technologies prior to contracting external vendors to perform parts of the process.

"Move Together towards Tomorrow" is still a slogan to the banking industry in Sri Lanka. Prior to redesigning their operating and business models, it is imperative for bank executives to start by deliberating whether there is a business case to reposition the current models. To dispel above concerns, banks should internally conduct objective discussions of the following issues:

- How to find finance for the change? Do corporate centers of banks prioritize resources and make savings?
- How should the banks adapt their organizational structure? Should they be fit-for-purpose operating models for different business areas?
- What is the internal assessment of capability gaps and what workforce changes need to occur and how will banks attract necessary talent?
- As automation pervades more activities, how should they redeploy their workforce? Banks need to sharpen their focus on delivering a better customer experience and main areas of redeployment
- Assessment of banks' IT response to defined business unit requirements

3.4 Challenges in moving forward: Leadership challenge

From a leadership perspective, the challenge is not an intellectual one of knowing which disruption is coming, but it is how the banking industry in Sri Lanka could move together in embracing the technological change. Some banks know what is going to happen. Even their own customers tell them that they are moving to do more on-line and internet business due to lower costs. However, some bank boards and executives tend to ignore the imminent or potential disruption. The challenge is organizational, how should they set up the capabilities to embrace change before the disruption happens.

The leadership challenge is even deeper than most of the other challenges of disruptive change. What's really at stake is to find out the right combination of complementary talents. To start with, leadership should be ready to give up position once one's contribution to the bank is over. But in Sri Lanka, getting rid of the leadership that has completed its service is a big problem. The incumbent leaders use all their connections to stay longer. True leaders should not hesitate in building up a talented team and thereafter moving them up for higher positions. Building a diverse and creative team that can read tomorrow's disruption correctly and take better and improved decisions is critical for banks. When the leader leaves the organization, the tendency is to look for an individual with specific abilities, often a retiree from another bank or someone well known to the shareholders or board members.

One way to think about the leadership implications of a major technology-driven change is to identify more broadly what the role of leadership is. Leadership refers to individuals who have unique skills to: guide and influence the behaviour of others; achieve outstanding results and; someone who has an organizational capacity to build future leaders. This is rarely seen in Sri Lanka as leaders tend to keep knowledge to themselves to be indispensable and for the fear of losing their jobs. They hardly share knowledge with smart individuals in lower ranks but depend on a few of their loyal friends to bring in new knowledge. The critical question is whether the quality of leadership within a bank can anticipate what's to come and manage disruption? Banks with strong leadership will have the capacity to respond to changing business conditions, execute strategy, increase investor confidence and deliver customer expectations. The good leadership would identify where automation can transform their bank and build capacity to migrate the impact of disruptive technology.

3.5 Skills and Talent Management and Redeployment Challenge

Workers will need different skills to thrive in the workplace of the future. Demand for basic digital skills has been increasing in all jobs. Automation will also spur growth in the need for higher-level cognitive skills, particularly critical thinking, creativity, and complex information processing[21]. Similarly, workplaces and work flows will change as more people work alongside machines. This will be challenging both to individual workers, who will need to be retrained,

[21] Jacques Bughin and Jonathan Woetzel, Download Resources and McKinsey_Website_Accessibility@mckinsey.com

and to banks, which must become more adaptable. The wage pressure is likely to be lower in emerging economies, where relatively low wages for many workers make the business case for adoption less compelling. Sri Lanka is a case in point as banks would find thousands of roles becoming obsolete, including tellers, back-office processors, even routine call-center agents, as Chatbots[22] take on answering simple inquiries. It is also noted that conventional technologies help banks in Sri Lanka to double labor productivity every few years, through digitalizing processes and applying more sophisticated industrial methods like capacity planning.

Bank staff cannot escape training on automation, digitization, AI, machine learning etc. to survive in the fourth industrial revolution. Banks should address competency, HR capabilities, talent management issues that will be essential components in the new banking business model. Banks may have to depend on a number of educational and professional institutions in producing and up skilling talents of young recruits and assess the existing capabilities of the present staff and train them to cater to new demands. Selection of succession line alone may not solve the talent issue as the senior management is expected to guide the junior staff in machine learning, AI, Robotics and other high technology operations.

The greatest talent challenge for banks in Sri Lanka may be attracting technical specialists. Banks have not paid attention to recruiting staff with talent in advanced analytics, new technologies such as Block chain and customer experience design. In countries where Fintech led digitization is taking place, it's not that hard to find technological experts but Sri Lanka's Fintech expansion to date is slow and therefore banks have to head hunt such talents with an attractive remuneration package. The key is to focus on policies that respond to the organizational changes driven by the digital revolution. Education and training by Sri Lankan banks should give today's bankers the wherewithal to thrive in a new economy in which repetitive cognitive tasks are replaced by new skills such as web engineering, machine learning, big data analyzing and protecting cyber security. Both private and public universities in Sri Lanka have not been able to produce the required number of graduates (at least 10000 per year) with initial academic training in mathematics and computing, which is the basic demand of business process outsourcing (BPOs) and knowledge process outsourcing (KPOs) and other ICT business promoters and investors. For example, one of the private technology firms in neighbouring India has established a Networking Academy Programme aiming at training 50 million Indians with high skilled technology by 2025. The programme is a cloud-delivered, scalable high quality one that trains students how to build, design secure and maintain digital infrastructure[23].

One clear difference between the digital evolutions is the speed at which the technology is being spread across countries due to availability of the workhorses of the digital revolution—computers, the Internet, and artificial intelligence backed by electrical power and big data—are widely available regionally and globally. Indeed, it is striking that developing and emerging economies are leading technology in many areas, such as mobile payments (Kenya, Singapore),

[22] Chatbots is a piece of software that conducts a conversation via auditory or textual methods

[23] Harshana Sellahewa (2019), CISCO-India Summit 2019 discusses major steps in India's digitization journey, ICT, Daily FT, August 21

digital land registration (India), e-commerce (China), block chain technology and digital banks (Singapore). These countries facilitated the quick adoption of new technologies because, unlike many advanced economies, they weren't saddled in pre-existing or antiquated infrastructure.

As shown in Figure 7 below, leading banks have been addressing critical areas in the repositioning of their operating and business models starting with customer focus. They have assessed potential impacts of disruptive change and addressed key areas of impacts in their new business models. Banks in Sri Lanka need to modify the organizational superstructures to elevate the role of customer segment heads, giving them authority over products and channels for those segments. It is also useful to put in place a team charged with ensuring an excellent experience for each customer segment.

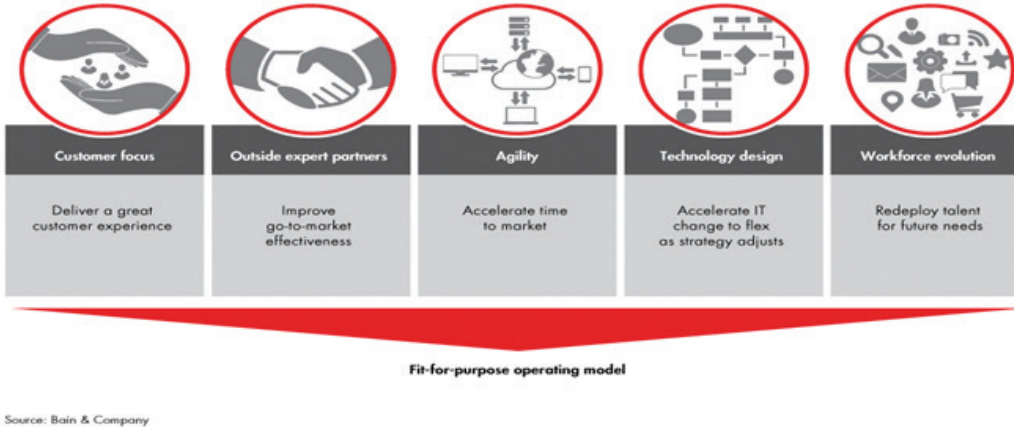


Figure 7: An operating model for the future will address five critical areas

Reaching outside expert partners is another option. At any point along the spectrum from manufacturing to distribution, banks can plugging into an ecosystem of third-party vendors, open APIs, Fintechs and other banks to deliver products more effectively. A notable drawback in the banking industry in Sri Lanka is the lack of technology competition from global bank branches or new banks which have declared that they would be strong in technology at the time of applying for banking licenses. Banks in Sri Lanka are also confronted with a unique problem of resentment for outsourcing by lower ranks of the staff and protecting labour consuming tasks in their respective banks, despite high cost and subdued customer service. Often, the staff ranks tend to report against outsource companies and experts hired for specific areas of restructuring. To maintain industrial peace, the senior management agrees for in-house services. Senior executives may not understand all the implications of disruptive technology or appreciate how the entire bank, not just the IT group, must work differently. While accepting the role of legacy IT systems for the foreseeable future, senior executives should methodically pursue modernization and retirement of outdated systems based on risk/value trade-offs. Again the leadership should be able to offset the resistance by staff who seem to think that they are able to do a better job than outsiders. Many banks in Sri Lanka have undergone significant expenses due to staff pressure

to design and develop technology in-house, IT in particular. Usually, after several rounds of failures, bank management calls for external assistance. Executives will also need to resolve questions about which entity owns the customer relationship and which entity is responsible for compliance. New competitors move faster than banks in making and implementing decisions and as technology such as open APIs makes it easier for customers to switch providers.

The resentment of staff as well as senior management of banks in Sri Lanka to share platforms and technology infrastructure with their peer banks is another problem that needs to be resolved prior to embracing digitization. For a long time, banks in Sri Lanka have rejected the idea of sharing platforms and opted for outdated standalone systems whereas global giants are moving for platform integration. Bank of China and Deutsche Bank set up a host-to-host platform for domestic and international payments. Some banks have established partnerships with FinTech companies, such as JPMorgan Chase partnering with OnDeck to approve and fund small business loans in a day while, multibank portals are proliferating to serve corporate clients. Seven of Europe's largest banks are building a shared cross-border trade-finance platform for small and medium-size companies, using DLT. The recently launched Huawei's Ascend -910- AI processor and all scenario AI computing framework "Mindspore" will go open source in Q1 of 2020[24]. This framework will take AI as a basic skill, supported by one-stop platform. While these technological developments are taking place elsewhere, a few years ago, many banks in Sri Lanka expressed reservations in linking their ATMs, mobile payment processes and payment cards to the National Switch operated by LankaClear.

Section 4: Concluding Remarks

What is clear from the foregoing is that disruptive or otherwise, digital technology will spread further and there is no turning back now, but economic disruption and uncertainty can fuel social anxiety about the future, leading to political consequences. In the same way, as people adapted themselves to using steam power and electricity in the past, customers of banks in Sri Lanka will eventually adapt to the digital revolution and disruptive change. The answer lies not in denial or postponement but in devising smart policies that help maximize the benefits of new technology while minimizing the inevitable short-term disruptions.

Technology, intelligence and customer expectations together have created a tsunami of change that rippled through countless industries and laid the foundation for what is referred to as the Fourth Industrial Revolution (digital revolution). Forward-thinking organizations and banks embrace it as they adopt new business practices and take proactive measures, positioning themselves to stay competitive in volatile markets but the impact of digital transformation and disruptive technology on banking business will continue to be a significant feature in the banking landscape. Such technology can significantly alter the way companies/banks operate and compete, and allow small banks to find overlooked target markets and gain market share.

[24] Eric Xu (2019), Huawei Achieves key new Milestones in Quest to Empower All Via AI, Daily Daily FT, IT/Telecom, 27 August

To minimize disruption and maximize benefits, banks in Sri Lanka should cautiously adapt policies on digital data and international policies to face emerging realities. For decades, banking business has deployed technology to save management time, reduce costs and complexity, offer better service, make better products and develop new business models. Today, customer experiences and preference with Apple or Amazon or Uber show how customers gradually adapt new standards and their expectation of best in class experiences from all their online and mobile interactions and demand the same on most offline services. The same goes for banking and financial services.

The disruptive technology revolution has already affected well known regional financial hubs, such as Singapore and Hong Kong SAR, differently than many of the others in the region. These hubs have been able to pool necessary talents and skills, and redeploy their non-tech savvy staff. Banks in Sri Lanka should be forward looking and indicate to schools, higher education institutions and universities the skills they expect from the education system and get them to change academic curricula. Similarly, banks will need to put a premium on retraining workers whose skills have been degraded.

Although reaching a regional financial hub is a distant dream for the banking industry in Sri Lanka, it is imperative that banks as a group, deliberate to understand how imminent the technological disruption is and how much time banks need to prepare or to adjust their policies and business models to cope with the change. Banking industry should discuss its readiness to embrace disruptive technology, potential implications of disruptive changes,what action they should take to minimize potential risks and maximize benefits of the change. Adjusting operating and business models can involve getting agreement with regulators, worker unions and other stakeholders, which can easily drag the process even when banks feel some urgency. Banks that take too much time to realign or overhaul their operating models could be exposed to numerous risks but the industry as a whole should work to a time target. The current political and economic uncertainty in Sri Lanka makes decision making rather difficult but it is essential that banks as a group deliberate on appropriate policies and the course of action. Each of the disruptive forces that were highlighted would be challenging on its own, and taken together, they seem daunting. As the banking industry in Sri Lanka has not discussed the potential impact of disruptive technology nor reached a consensus on what initiatives they should take now to be in readiness,individual banks tend to tread along the path without realizing what would transpire or the full impact of disruptive change. The industry should focus on at least of four key areas: the digital workplace, modernization of the infrastructure, the links to the cloud, and security in all devices and networks.

Banks in Sri Lanka should go in for multiple relationship with their customers, get rid of IT legacy systems, understand the customer and pre-empt service. When the industry builds up hopes of new, efficient and cost effective services, then banks will be compelled to build new operating and business models and re scale operations. In the new business models, banks need to take out “pain point” and rectify weakness that have been spotted by customers. Otherwise, the core elements of new operating and business models will have the same characteristics as

the old models. It is important that the present leadership earmark tech savvy young talent as future leaders and groom them with leadership knowledge prior to moving towards adopting disruptive technology.

Banks in Sri Lanka should also take steps to boost capital accumulation and deeper connections to the global economy. Banks should endeavour to embrace new technology, perhaps less sophisticated and more suitable ones for Sri Lanka than blindly follow advanced countries. At the same time, the industry should take necessary action to mitigate negative impacts of disruptive technology on weaker economic sectors and some segments of people, and move towards a more inclusive society.

Banks need to capture the net positive economic impact of AI and address societal concerns on AI and automation. As regards the automation and technological advances challenge, automation will affect portions of all jobs to a greater or lesser degree, depending on the type of work they entail. In the final analysis, to get banks prepared for the technological advances of tomorrow, leaders must challenge themselves to understand the technological innovation on the horizon. Sri Lanka is yet to produce youths talented in machine learning, AI, big data, cloud computing etc. because the banking industry has not yet focused on this talent gap. Sri Lanka should pay greater attention to avoid misuse of AI and strengthen data privacy.

Another big challenge is to deal with archaic labour laws in Sri Lanka. In this instance, the banking industry as a whole should demand flexible labour laws in line with other Asian or ASEAN countries. Banks need to address the labour-market implications of technology adoption through large-scale retraining and transitioning of workers. Workers will need to acquire new skills and be more adaptable as they work ever more closely with evolving machines. Internally, leaders should deal with workforce and organizational challenges, legacy IT systems and focus on what the industry should embrace rather than individual banks.

Sri Lanka's banks should safeguard themselves to avoid a race to the bottom. Sri Lanka has a big opportunity to learn from the disruptions that have happened in other markets. With their broad membership, the banking industry should provide a forum for addressing the challenges posed by disruptive technologies and digital revolution in the near future. The complacency may not pay off if imminent threats of disruptive technology emerges sooner than banks expect it to happen. It will also be too late to seek peer help if banks have been solving problems by themselves considering them as internal issues. The banking industry in Sri Lanka should not miss the opportunity of discussing the potential challenges of disruptive technology and taking necessary steps to be in readiness for such an eventuality.

Annexure 1

	Manufacturing focus	Hybrid	Distribution focus
Ambition	Best-in-class production and processing of banking products	Growth in select core markets via distinct products, customer segments, geographies	Best-in-class client insight, and management of channels and relationships
Where to play	Best-in-class solutions for specific customer segments, including other banks	Distinct choices of products, according to customer segments and geography	Full product suite, bundled and tailored to the sector and size of the customer with white-label solutions
How to win	Economies of scale; high fixed costs require large volumes to hold down unit costs	Both scale and scope; manufacturing in core local markets and distribution in select overseas markets	Economies of scope; high cost of acquiring clients makes a large share of wallet essential
Examples	Black Rock, State Street, Goldman Sachs, parts of JPMorgan Chase	Many large banks in their home markets	Community banks, smaller overseas branches

Source: Bain & Company

Figure 1: Banks need to decide where to compete on the value chain spectrum

Abbreviations

AI	:	Artificial Intelligence
API	:	Application Programming Interface
ATMs	:	Automated Teller Machines
BPO	:	Business Process Outsourcing
CBSL	:	Central Bank of Sri Lanka
DI	:	Disruptive Innovation
DLT	:	Distributed Ledger Technology
IT	:	Information Technology
IOT	:	Internet of Things
KPO	:	Knowledge Process Outsourcing
LCBs	:	Licensed Commercial Banks
LFCs	:	Licensed Finance Companies
LLCs	:	Licensed Leasing Companies
LSBs	:	Licensed specialized banks
NPA	:	Non Performing Assets
SLFRS	:	Sri Lanka Financial Reporting Standards

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