

Enterprise Risk Management in The IR4.0 Era: Designing Business Model Options for Bank-of-the-Future

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Abstract: The world is moving at a fast pace with the digital economy. A fourth industrial revolution has emerged, known as Industry Revolution 4.0. Just like autonomous cars promise to be the norm one day, the bank of the future will be mostly digital. However, together with the opportunity, this will also bring with it many new challenges such as cyber-threats. Cyber-threats have been targeting the financial sector worldwide. Downtime can cause widespread disruption and massive damage to an organization's services, bottom line and reputation. Banks are also exposed to market risk, interest rate risk, credit risk, liquidity risk, and operational risk. For any bank, the measurement and management of risk is of the utmost importance. This article will discuss on the business model of the Bank-of-the-Future (BotF), the risk and challenges, as well as the enterprise risk management by using business model canvas (BMC) framework to develop BotF business model options.

Keywords: Bank of the future, Digitalization, Technology, Banking Sector, Enterprise Risk Management, IR4.0, Business Model, Business Model Canvas.

I. INTRODUCTION

The world around is changing every minute. We want to live faster, more actively, and efficiently. Digital era is already on the doorstep and is going to disrupt our “outdated” way of life. The Fourth Industrial Revolution, or first called by the Europeans Industry 4.0, is all about the use of artificial intelligence, robotics and creative design and high-speed computing capability to revolutionise production, distribution and consumption. Finance is a derivative of the real economy which its purpose is to serve real production. In order to be successful, the bank of the future will need to embrace emerging technology, remain flexible to adopt evolving business models, and put customers at the centre of every strategy.

Artificial intelligence has already influenced many industries allowing them to become more efficient, simple, and modern. Banks that are aimed at entering the new level of development and want to catch the wave of the newest technologies are exploring AI uses in consumer and wholesale banking ^[1]. Several banks are already beginning to centralize their data assets and are leveraging hybrid cloud architectures to speed up the transition. The broad adoption of AI and automation will have a significant impact on the distribution of banks and servicing channels.

The Internet-based giant companies like Amazon, Alibaba and Facebook have already captured a great part of consumers' attention and time ^[2]. These companies view payments and financial services as a tool to significantly enhance client. Traditional banking is being challenged by these tech giants leveraging their strong customer bases, vast user data pools, agile technology platforms, and deep funding pockets.

The field of cryptocurrencies has expanded dramatically since bitcoin was launched over a decade ago, and the next great digital token may be released tomorrow, for all anyone in the crypto community knows. 2017 is considered as the year of

cryptocurrencies, and from that time crypto has caused so much noise all around the globe, that you will hardly find a person today who has never heard about bitcoin. The total market capitalisation of all crypto combined scaled \$660 billion in 2017^[2]. Commerce on the Internet has come to rely almost exclusively on financial institutions serving as trusted third parties to process electronic payments. A purely peer-to-peer version of electronic cash would allow online payments to be sent directly from one party to another without going through a financial institution.

II. PROBLEM STATEMENT

As the world changes rapidly, business model and risk functions in banks in the future will need to be relevant than they are today. The next ten years in risk management may be subject to more transformation in nature than the last decade. Unless banks start to act now and prepare for these longer-term changes, they may be overwhelmed and disrupted by new entrants from other non-banking industries, as well as the new requirements and demands by their customers and partners. What will the business model and risk function look like in 2030? It is likely to have broader responsibilities, to be very engaged at a strategic level, and to have much stronger, collaborative relationships with other parts of the bank as well as customers and external partners. This business model may facilitate and help BotF in identifying the key assets and hence the formulation of effective implementation of enterprise risk management system.

III. METHODOLOGY

The methodology uses in this article is by reviewing the future through the study of the megatrends such as the digital transformation and changing of business models that occurred globally. From these megatrends, the authors study how it effects the banking sector and what is the challenges that banks must undergo with this transformation. Besides that, the authors also study the options of business model for the banks in the future and some critical factors that will determine whether a bank is successful in building its future model. All of this information were analysed and came out with several recommendations for the banks to stay relevant in the future.

IV. LITERATURE REVIEW

Ernst and Young defines megatrends as “large, transformative global forces that define the future by having far-reaching impacts on businesses, economies, industries, societies and individuals”^[3]. Megatrends are long-term changes that impact us all globally on a permanent basis. Today we are seeing organizations strive to be agile and stay relevant. Today's top companies could become the dinosaurs of tomorrow if they do not learn how to adapt and survive in this new marketplace.

As the industry's digital transformation accelerates, banks will move from exploring to implementing firm-wide uses of new technologies in the middle and back office^[4]. This will challenge risk functions to change how they monitor banks' risk profiles and enable innovation, and how they leverage new techniques to be smarter, faster and more cost-effective.

Digitization and advanced analytics can augment and magnify the impact of process redesign, allowing for full impact to both risk-management effectiveness and efficiency^[5]. Appropriately automated processes are less error prone and less costly. Digitization permits institutions to embed automated real-time (or near-real-time) risk controls within core processes. This reduces control failures and makes far more efficient use of resources.

Banking and capital markets leaders increasingly recognize that cloud is more than a technology. It is a destination for banks and other financial services firms to store data and applications and access advanced software applications via the internet^[6]. The cloud offers a huge opportunity to synchronize the enterprise; to break down operational and data silos across risk, finance, regulatory, customer support, and more. Once massive data sets are combined in one place, the organization can apply advanced analytics for integrated insights.

The digital currency bitcoin is highly controversial but the underlying blockchain technology has worked flawlessly and found wide range of applications in both financial and nonfinancial world. Blockchain is essentially a distributed database of records or public ledger of all transactions or digital events that have been executed and shared among participating parties^[7]. Each transaction in the public ledger is verified by consensus of a majority of the participants in the system. And, once entered, information can never be erased. The blockchain contains a certain and verifiable record of every single transaction ever made. The main hypothesis is that the blockchain establishes a system of creating a distributed consensus in the digital online world.

Large banks such as Bank of America and Citigroup has already included the digital transformation in their business model. Bank of America Corporation has a generic strategy that requires the company to maximize its profit margins and revenue growth through business models and intensive growth strategies that work with cost minimization^[8]. These corporate strategies are based on the company's business model, which includes online banking as a way to maintain competitiveness through technological innovation.

Citi's Global Consumer Bank (GCB), a global digital banking leader has strengthened its client-centric model, rapidly accelerated its digital transformation, gained momentum resolving legacy regulatory issues and continued to pace strategic investments in key growth areas^[9]. GCB strengthened its client-centric model with a reorganization that created a regional structure in the U.S., Asia and Mexico, and brought together product leadership globally to unify strategy across products, segments and investments. Industry leading capabilities, redesigned mobile experiences and market-first partnerships with leading digital and social platforms drove greater engagement, higher client satisfaction and new sources of growth.

There are four strategic options for banks^[10]. First option is to be a Banking Provider where positioned as a leading supplier of certain financial services through third party platforms. Second option is owning a digital platform where the bank's or e.g. third-party financial products and services are offered to the bank's customers. Next option is developing and maintaining the backbone and infrastructure of financial products (e.g. payment system, bank accounts) that integrate into a coherent suite of (non-financial) services by becoming a Banking & Services Provider. Another option is developing and owning a digital platform where all types of (connected) services are offered to customers in a coherent suite through the exponential platform.

As banks undergo transition the transformation journey, they must navigate five broad challenges^[4]. First, managing emerging risks and increased competition where broader geopolitical, social and environmental concerns are looming larger, as regulatory fragmentation continues and competition intensifies. Cybersecurity is now clearly the top risk for boards. Secondly, leading a digital transformation of risk management. Technology has reshaped customer interfaces, but banks still have to implement new technologies in the middle and back office to drive fundamental change. Risk functions must change how they monitor risk profiles and enable innovation, and become smarter, faster and more cost-effective.

Thirdly, the operationalizing three-lines-of-defense models. The model is necessary to improve the effectiveness and cost-efficiency of risk management. Talent shortages are expected in advanced analytics, model risk and other key areas. Standardization and automation are accelerating, even if broader technology deployments are delayed. Next, managing nonfinancial risks cost-effectively. Although conduct risk frameworks are in place, there is a long way to go to prove effectiveness and improve cost-efficiency as risk appetite frameworks evolve, common challenges such as quantifying nonfinancial risks remains difficult. Lastly, staying resilient and protecting against cyber risks. Beyond core competencies such as business continuity and disaster recovery, data quality and process-flow mapping need enhancing. In managing cyber risks across the three lines of defense, quantification and reporting are a challenge, even as boards increase oversight. Managing critical vendors more effectively supports operational and cyber-resiliency.

V. SUGGESTION AND RECOMMENDATION

Technology is been changing how businesses work and it is no different for the finance industry. To reap the benefits that technology can bring, financial institutions would have to understand not only the advantages of implementing a particular technology but also how it will impact their businesses. Beyond understanding how a piece of technology works, companies need to keep in mind the impact of technology in relation to the regulations governing the finance industry. Below are several recommendations for the banks to stay relevant in the future:

1. Some banks are so preoccupied with financial risks that they are missing the bigger picture. That's where "enterprise risk management" can help. Enterprise risk management seeks to control the broadest possible set of risks, from purely financial ones such as market and credit risk; the drivers of doom during the last crisis, to nonfinancial threats such as reputation risk^[11]. Banks that embrace enterprise risk management today will be positioned to respond quickly to unforeseen troubles tomorrow. Those that do not run the risk of making a new set of mistakes during the next crisis that could cost shareholders and employees, perhaps, weaken the banking system itself.

2. Business Model Canvas (BMC): A BMC allows organizations to fill their business model in a visual canvas that allows for easy understanding of their business in nine building blocks. The motivation behind it is to understand both what can positively affect the value propositions of your business (opportunities) and what can negatively affect those same value

propositions (risks) ^[12]. The idea is to identify and understand the key assets, their risks and their impact (positive and negative) on each of the nine building blocks of the BMC. The key assets of BotF, for example, can be identified from items listed under the nine BMC blocks namely Key Resources, Key Activities, Key Partners, Value Propositions, Customer Segments, Channels, Customer Relationship, Cost Structure, and Revenue Stream. Subsequently, this will help BotF in formulating and developing an effective enterprise risk management system.

Value Propositions (VP): The most important thing is for the management of an organization to evaluate and agree on what they want to achieve and align the strategy. Instead of changing goals, the bank should change their operations to meet the goals ^[13]. VP –the values and benefits that BotF promise to deliver to their customer segments (CS).

Customer Segments (CS): To build an effective business model, BotF must identify which customers it tries to serve. Various sets of customers can be segmented based on their different needs and attributes to ensure appropriate implementation of corporate strategy to meet the characteristics of selected groups of clients.

Channels: A company can deliver its value proposition to its targeted customers through different channels. Effective channels will distribute a company's value proposition in ways that are fast, efficient and cost-effective.

Customer Relationship (CR): Manage the organizational impact of technology change. Quality services and assistance to customers must be available 24/7. Technology alone cannot solve problems arising from bad practices and ineffective business processes. It also cannot replace the under-skilled people.

Key Activities (KA): Assess the impact of technology on governance and risk management. Technology can fundamentally alter how you do business. Maturing technologies offer huge potential in many industries. It is thus important to note how it will affect governance and risks in your organization. Organisations need to adopt, experiment, implement and learn from these technologies and make sure that they use them to create value. If implemented correctly, they can produce returns that can unlock financial and management 'energy' ^[13]. Ensuring that processes are still compliant with any regulations and policies is important. Before implementing a technology, companies need to recognize the inefficiencies in an organization and remove it from the processes. KA – BotF key activities needed to deliver the VPs to the customer segments (CS).

Key Resources (KR): Appreciate the value of data as you cannot get the business benefit of analytics if your data quality is poor. It is important to maintain a good data quality. Often, organizations do one major data clean-up ^[13]. However, there is not enough initiative for keeping the data clean. Besides, focus on talent and skills. Having the right people is still key. Technology can replace the mundane repetitive functions, but human interventions are still needed. People will take on the role of change management, to link analysis to actionable business processes. KR – BotF key resources needed to deliver the VPs to the customer segments (CS).

Key Partners (KP): The role of the regulators will be the determinant for the future of banks. They will have to find the right balance between protecting the sector and opening it up to players that create added-value for the customers. In an era of rapid technological innovation, new threats are emerging almost daily in cyber security, artificial intelligence, blockchain and other areas. KP – BotF key partners needed to deliver the VPs to the customer segments (CS).

Cost Structure (CS): The bank then needs to understand the cost of implementing a particular technology, and how it will impact the business. They need to identify if it's the right point in time for the business model in adopting a particular technology.

Revenue Stream (RS): The way a company makes income from each customer segment.

VI. CONCLUSION

In today's world, financial professionals are expected to not only understand how the money moves within the organization, but also how particular changes, such as improvements in technology or changes in regulations will affect other parts of the business. No-one really knows at present how the banking industry will be shaped in the future, the only consensus view seems to be that the status quo cannot hold.

Bank risk management will likely look dramatically different in the future. Its ability to manage multiple risk types while preparing for new regulations and complying with current ones is expected to make it even more invaluable to financial institutions, and its role in creating fulfilling customer experiences will most probably transform it into a key contributor to banks' bottom lines.

It is important for banking industry to keep up to date with these changes, in order to not only stay relevant in the market but also to improve the services they provide to customers. The business model may facilitate and help BotF in identifying the key assets and hence the formulation of effective implementation of enterprise risk management system. Having a strong framework for building that future, can serve as a guideline for how banks can embrace and take advantage of the changes in the industry.

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