

Delivering Services Digitally-A conceptual framework

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Abstract

New Opportunities and new challenges evolving in the era of globalization. To grab the opportunities technology innovation and implementation is necessary. Digitalization is entering into all the walks of life. In business also digitalization playing a key role in enhancing business activities thereby increasing profitability along with efficiency. As world is moving towards digitalization India is also slowly adopting the digitalization path. In India literacy rate and lack of infrastructure facilities throwing a greater difficulty in achieving the goal of transformation towards digitalization. Government and Private agencies have to play a key role together in total transformation to digital world. There is a wide gap between rural India and urban India in terms of communications infrastructure. Bridging this gap is necessary to reach the goal of make in India concept. Digitalization encompassing finance area throwing new challenges in India due to lack of awareness among people. This paper is a conceptual framework throwing some light in the aspects related to digitalization and its issues and risk factors related to finance. This paper will explore the ways to overcome the risk factors associated with finance.

Key words: Digitalization, Rural, Urban, Literacy Rate, Infrastructure.

Introduction:

Across industries, digital innovators are pushing customer service standards higher every day, offering ever-expanding arrays of cutting-edge, digitally enabled services and features. Prominent examples include Netflix's low-latency, high-availability offering; Amazon's real-time personalized offers based on customer profiles; and Uber's convenient, intuitive user interface. These new offerings and enhancements are driving customers' expectations higher for all businesses, including banks and insurers—and these institutions are being forced to respond. The need for banks and insurers to improve their digital capabilities is becoming even more urgent with the emergence of new market entrants and services (such as Apple Pay) from the “fintech”

and technology sectors, which are attacking banks' and insurers' core businesses and reshaping those industries.

To meet these challenges, banks and insurers are embarking on a comprehensive digitization journey, one that is different from the path they were on just three years ago, when their efforts were confined largely to isolated initiatives such as division-focused big data projects, the launch of individual apps, and improvements to their online and mobile channels. Today, banks and insurers are changing the ways that they interact with customers, giving customers a wider range of choices and greater control over the interaction itself. Banks and insurers are also providing customers with new, value-added, digitally enabled functionalities, such as rapid validation of loan approvals and the ability to open accounts quickly. Ferratum, an international provider of mobile consumer loans, for example, can complete an application within two minutes. ING-DiBa, Germany's third-largest retail bank, allows customers to identify themselves by holding an ID card in front of a webcam, rather than having to display postal or branch-based identification. But banks and insurers are not focusing solely on improving the front end. Several institutions have also started to upgrade their back-end operations, which is often a much more complex challenge. A number of banks, for example, have begun to establish multidimensional master-data-management capabilities, strengthening their ability to leverage big data, meet regulatory requirements, and ensure consistent and timely reporting. Others are adopting agile ways of working, deploying continuous-delivery software engineering and DevOps to improve performance.

Some financial institutions are enhancing these efforts by increasing the standardization of their infrastructure as well as their use of automated deployment, measures that can support a more rapid software-release cycle and better leverage front-end development. GE Capital, for example, developed its innovative Fleet Optimizer application, which is aimed at optimizing spending and utilization rates for clients of the company's Fleet Services business, within 70 days from whiteboard to production aided by continuous delivery and greater standardization.

Some banks and insurers are also experimenting with new and evolving digital technologies, such as robotics process automation and self-learning machines, which together have the potential to deliver step changes in speed and efficiency. Arago's Auto Pilot, for example, can complete 80% of all IT service management tasks autonomously. In addition, these institutions are experimenting with new, customer-facing technologies. Deutsche Bank, for example, has

added to its online investment platform a robo advisor, which uses algorithms to create portfolios for investors.

Overhauling their digital capabilities promises to have a transformative effect on banks' and insurers' business. But getting there will put a significant strain on IT departments and, especially, chief information officers, who can play a determining role in ensuring that their companies are ready and able to become truly digital enterprises.

Transformation:

To successfully transform themselves into truly digital enterprises, banks and insurers must adopt or develop four critical elements or capabilities

- 1 .A simplified application landscape and infrastructure.
2. Multidimensional master data management.
3. Fully automated delivery processes based on the principles of continuous delivery and Develops.
4. An agile workforce, and a new way of working, across IT and the business.

A Simplified Application Landscape and Infrastructure:

The application landscapes and infrastructures of most banks and insurers are complex, fragmented, and full of legacy assets. They were built application by application over time and now include various platforms, infrastructure stacks, technologies, and customized or home-grown applications, often with several versions or variations of each. As a result, they are typically incapable of real-time responsiveness. They are also difficult and expensive to maintain, which ultimately means less value delivered per dollar spent on IT.

In addition, these environments are susceptible to broad reductions in service availability if one part of the chain breaks down. This is a huge liability in a world where customers expect digital services to be available 24/7. Further, the mix of technologies and methodologies employed for example, batch and dialog components makes it very difficult to implement real-time, end-to-end processing (a critical component of digital services such as real-time loan verification and payments).

To remedy this and ready themselves for digital transformation, banks and insurers are striving to simplify their application and infrastructure architectures and decouple their application landscapes. Following the lead of Web-born companies such as Spotify and Netflix, they are replacing complex interfaces and centralized service buses with more flexible, decentralized

interfaces, such as application programming interfaces (APIs). In such an environment, development teams can freely change the services they own, as long as they adhere to defined interface guidelines. The resulting fast release cycles allow these institutions to quickly bring new functionality to customers, helping to distinguish them from competitors and increase customer loyalty.

Financial institutions are also replacing their legacy applications with new technologies to enable straight-through processing. Our experience suggests that banks and insurers can gain outsized benefits by decommissioning not just some applications but entire platforms for example, replacing mainframe hardware and software with a fully automated (and hence considerably cheaper) x86-based cloud server.

A success story here is Australia's ING Direct, the country's first fully cloud-enabled bank, which transformed itself with its Bank in a Box platform. By replacing its legacy infrastructure with "zero touch, cloud-based hardware, ING Direct has gained several critical advantages, including greater automation and scalability of processes. This encapsulation of infrastructure is allowing the bank to focus on the development of digital services a core competitive differentiator rather than on infrastructure, which is essentially a commodity. The effort has been such a success in Australia that ING Direct is deploying it globally. The availability of new virtualization technologies, such as those produced by Docker, will make it easier for other financial services companies to go down this path.

Leading IT organizations at financial services companies are supporting these measures with significant efforts toward standardization and complexity reduction. We have observed that standardization works best when it is driven centrally and when it is mandatory for all parties. This approach translates into accelerated automation, leading to faster, more efficient development of digital services (as well as greater value per dollar of IT spending).

Multidimensional Master Data Management:

A consistent view of the company's data meaning that all data related to a particular service, customer, or other business-related object or process, as well as relevant data from third-party providers, is stored together in a consistent way is a foundation for most digital applications. For example, integrated customer journeys (with the customer initiating a transaction or process in

one channel and continuing or finishing it in another) require a high degree of data consistency to permit seamless switching among channels.

Most banks and insurers, however, still struggle to get consistent, high-quality sets of data that are free of redundancies. They employ several different database management systems and data models. Legacy applications are often connected to their own databases, translating into a high level of redundancy in physical and logical data storage across the organization. Typically, such systems can store, process, and analyze only structured data meaning that these institutions can only leverage approximately 20% to 30% of the data potentially available to them. (This is because their legacy systems typically cannot store unstructured data, which includes such things as pictures, movies, tweets, and Facebook posts.) And the high cost of proprietary storage systems drives up data-related costs materially.

Some banks and insurers, however, have substantially elevated their capabilities on this front. They are working to revamp their data management practices and provide a digital-ready data infrastructure. They aim to replace inconsistent data pools with shared-data clusters to ensure data integrity and data access by all systems, enabling seamless customer journeys and end-to-end processing. Note that these efforts do not entail replacing all existing data stores; rather, they require the use of technical and conceptual layers to eliminate or manage redundancies and ensure consistency.

Several leading banks and insurers are also considering the use of data lakes to facilitate data storage and the analysis of unstructured data. Often this is accompanied by the use of distributed architectures, such as Hadoop, which can increase data availability and reduce outages. (Netflix, to cite an example from outside the financial services industry, has a highly distributed data architecture that ensures availability of the whole system at all times, even if individual sites or regions break down.) In addition, data lakes and distributed architectures facilitate advanced analytics capabilities, which can help companies derive maximum value from the data they collect. GE Aviation employs a data lake that houses more than 1,500 terabytes of flight data and facilitates analysis that is 2,000 times faster, and ten times cheaper, than what is possible in a traditional data-warehouse-based environment.

Fully Automated Delivery Processes Based on the Principles of Continuous Delivery and Develops:

Banks and insurance companies often release software according to fixed, unyielding schedules. Testing is often still performed manually or in semi-automated fashion and primarily occurs at the end of projects or sprints, after hundreds to tens of thousands of lines of code have been written. There are long cycle times for deployment and lengthy lead times for infrastructure provisioning.

These institutions can take their development practices to the next level by using continuous-delivery software engineering and Dev. Ops to fully automate their delivery processes. But this requires a change in the demarcation line between development and operations and infrastructure: developers and operations staff must work together in joint teams, and teams access standardized infrastructure based on an infrastructure-as-a-service model.

To be sure, most banks and insurers will not be releasing software to production on a daily basis. But a daily error-free build in the development environment can lead to a zero-defect mentality among staff and eliminate the need for huge testing cycles at the end of projects or sprints. It also increases the quality of the software produced and therefore the stability of digital-service provisioning. This can reduce errors by as much as 50%, freeing up funds that can be used for digital transformation. Another advantage of such an environment is that developers can self-deploy using self-service portals (rather than having to engage the infrastructure department), which can increase speed to market for new services by up to 20%. The resulting rapid-release cycles also enable fast deployment of new functionalities, which can further differentiate the institution from competitors.

Multiple companies can attest to the benefits of this approach. Union Bank, for example, has realized an 80% reduction in testing costs and slashed the time necessary for setting up development environments from 42 to 3 days. Nationwide Insurance has reduced critical defects by 80% and increased system availability by 70%.

An Agile Workforce, and a New Way of Working, Across IT and the Business:

Our observations indicate that the software development process in many banks and insurance companies is far from optimal. Development teams remain intact only for the duration of their respective projects and work in isolation from the business. Developers focus on completing projects and take no responsibility for the full life cycle of the applications they create; instead, they pass their work along to operations, which takes care of maintenance and fixing bugs. Team

members are often geographically dispersed, making it difficult to react to changing market requirements.

Agile methodologies can help overcome these problems. Success, however, depends on how they are deployed. Agile teams perform best when they are multifunctional meaning they include business staff, developers, product management personnel, data analytics staff, and user-interface and user-experience design personnel, among others and when their members are co-located. They also tend to do well when they focus on features rather than components. This model gives each team a long-term mandate, fostering end-to-end accountability as well as the accumulation of deep, specific knowledge by developers, which can increase their productivity significantly. It also allows teams to operate with a relatively high degree of autonomy when it comes to handling incidents and structuring the development process. (See Exhibit 3.) This close interaction between the business and IT, combined with each team's ownership of the digital service it is working on, boosts efficiency and ensures that only the features that the business and client really need are developed.

Collectively, actions such as these can create a simple, decoupled architecture that allows quick changes and reduces the need for testing. Infrastructure costs fall significantly because cheap, automated commodity hardware replaces costly legacy hardware, freeing up budget to develop digital services. And the use of APIs and micro services reduces dependencies among applications. This, in turn, improves service availability core differentiator in a digital business model. Such an architectural foundation is also a good starting point for unleashing the full power of agile methodologies and continuous delivery, which can enable rapid releases to production and accelerate the company's digital transformation. (See Exhibit 2.)

The high cost of building and operating brick-and-mortar bank branches has been a major obstacle for extending financial services to the poor. Physical bank branches are expensive to maintain in far-flung communities, while traveling to urban areas is costly for many rural customers.

However, unbanked individuals are increasingly gaining access to financial services through digital channels. Banks, microfinance institutions, mobile operators, and third party providers are

leveraging mobile phones, point-of-sale devices, along with networks of small-scale agents, to offer basic financial services at greater convenience, scale and lower cost than traditional banking allows. There are an emerging new sets of institutions such as agent network managers, payment aggregators and others who are helping build out a more far reaching and efficient digital finance ecosystem.

According to estimates, more than 400 million people are linked globally through basic mobile payments services, allowing them to send money, pay bills, or purchase prepaid electricity with greater ease, affordability and access (GSMA Global Adoption Survey, 2015). Increasingly governments are adopting digital finance to deliver social safety net cash payments and trying to make collection of fees/tariffs more efficient.

Yet there remains a long way to go in digital finance. Ecosystems take time to develop and can take years before one-quarter to a half of adults begin to use basic payment services. There are also barriers that hinder the progression from payments to solutions “beyond payments.” For instance, many payments services remain relatively closed, making the integration of a broader range of solutions into existing payment platforms costly and cumbersome. In addition, many financial services such as savings and loans require significant physical touch points between customers and providers, making them difficult to scale.

Recognizing these barriers, CGAP is working to explore how industry can leverage the depth and reach of existing digital payments platforms, and develop a broad range of financial solutions that are relevant for the poor. In particular, CGAP focuses on the following areas:

Conclusion:

Literacy plays an important role in the transformation towards digitalization. In India delivering services digitally require total literacy. Apart from this financial literacy and digital literacy required. Digitalization requires more Investments country like India it is a cost effective. The another issue in digitalization is security features. As lack of awareness among people in using technology in getting financial services digitally. Cyber Laws are adequate in dealing the crimes related to it, as crimes taking place outside of the country and takes lot of time to bring culprits to court. Infrastructure facilities to be improved in rural areas as these are not covered by banking

sector fully. I would like to suggest a model for delivering financial services digitally. Achievement of total literacy rate in the first phase. Digital literacy achievement in the second phase, this can be done by including digital services in the curriculum of high school level. In the third phase financial literacy achievement along with infrastructure facilities. As of now infrastructure facilities not adequate to provide services digitally to the population of the country. Fourth phase strict vigilance and strict Laws in dealing crimes related to financial frauds and speedy justice.

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