Role of Technology in Banking in the next decade

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Technology evolves, expands in area and scope, in small, or even infrequent large steps, and helps create new products /services / processes. Technology is the enabler, the tool, the creator of differentiating edge over competition, and even the driver of business, quite often. All the connected parties in a business are not equally affected by any change, but market forces drive all to change business rules, roles and preferences, or products. New skills and roles appear; older roles, jobs, routines and skills are rejected. In this way – technology brings new learning, new communications, changes knowledge/ skill groups, as also, on the other hand - destroys, disrupts and readjusts people, business and working relations. This is ongoing.

For the next decade now, the interplay of technologies in banking, and the newly arriving pieces of technologies/processes that impact banking and business entities – will similarly impact the future course. In the next few paragraphs, we try to venture some predictions on the nature and form of the change for the near future. For this, we look at the existing as also a few new pieces of technology and business practices currently making rounds.

Anyone in banking industry will tell that the technologies to definitely impact banking in the short or mid-term are the ones like Blockchain, Cloud, P2P financing (marketplace lending), Digitisation, Analytics, AI, Bitcoin or its equivalents, etc. These are the pieces of current phase of technological evolution in service industry. With changes in this delivery or handling technologies, the basic business model or relationships in banking may change somewhat only in the next decade, but the market realities may change significantly. With all of these, the depth of the role of technology in banking will anyway increase.

Before detailed examination of the technology pieces, a few basic observations on technology–bank relationships may be pertinent.

- Firstly, all new activities in banking may not be upon a technology invented yesterday or a completely new technology only. Often, the ingenuity of human minds creates new processes or relationships using existing technologies, may be with small changes. For example, encryption and digital signatures have been there, but, using the same components, the new Blockchain technique creates a new paradigm by removing the need of the banks at the two ends to be the sole authenticators. It achieves a chain of trust of many intermediaries that can even exclude banks altogether. While it has made waves, – the process is new – supported by technology with small amendments.
- Secondly, existence of a technology to do a thing in a certain way, may not be sole criterion for its adoption. Government control or overall business risk may compel to limit adoption of such a technology.
- Thirdly, technology for business has been a platform, a tool, an enabler, and facilitator. This basic relationship is not easily going to be jettisoned. However, roles of data processing,

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message creation, as also human functions like authentication of genuineness of a transaction/ communication are on technology. So, if the specific tech-tool for one of such activities used faces changes in technologies, it may force adoption and process change in business, changing functionality of related business roles. Technology thus changes business.

- Fourthly, some technology developments may also open up possibilities of new service, like it has been for credit cards or biometric micro ATMs and nationwide ATM switch.
- Lastly, overall technology advancements quicken and improve speed of message exchanges, enables real time multi –functionary participation for business decision, etc. These type of common infrastructural improvements improve and enrich business, including banking, catalysing widespread small changes in ways to operate / plan / act. This effect of technology slowly changing aspects of business always remains.
- These seem to be the general features of the role of technology on banks, which perhaps will further accentuate in the next decade.

A few dimensions of banks' capacity to adopt technology, that impacts the role of technology in banks, are also useful to understand here.

- A new technological product at its arrival in the market often sees flurry of marketing activities. By vendor interactions, bankers get idea of its capabilities. Many vendors offer new products adopting the same new technology. At this stage, often, possible customers (say bank) develop heightened expectations and incomplete knowledge. This is the 'Hype Cycle' phase of a product, after which things may settle, thoughts and understandings crystallise and sober down, which further moderates after actual use of product. The same proven trend will most likely be seen in play in the next decade also, hyped expectations of new technologies followed by sobering actual experience.
- Often a piece of a product or solution for a niche vertical of a business (say Interest Rate Risk Management Package, or, a Nostro Account Reconciliation Tool) is developed by some small vendor and due to product's merit, a bank picks it up. It will need integration with rest of the banking system, that may leave a weak security link in the first place. With change of technology in the main software, the small vendor may not be capable of re-engineering the niche package. Further, with products like this, a situation of many disparate technical pieces at work may arise. A new technology solution for some part of this (say even the Core Banking) even if available, may not be possible to be adopted that easily, unless all the pieces can be technically brought at synch.
- Sometimes a technological development may offer a better way to do things, but may need a structural change in the solution calling for very major re-development that will need huge cost, time and effort, as also some intermediate instability. This may not be desirable and not attempted; in most cases add-on solutions are placed beside or as overlay, limiting technology adoption extent and speed.
- Another situation is of a trend that some banks may often go for additional modules or products to be sourced from existing vendors to minimise administrative problems, integration gaps or vendor conflicts. Unless, this present vendor can graduate to the new technology, this bank will have a risk of wholesale systems changeover, huge learning and integration loads to move to new technology, even if wished to have immediately. Same is the situation if a new technology of choice, does not have servicing and support in the area of operation of an organisation.

- Also, the realm of quick changes/additions in technological functionalities affects the pool of knowledge, skill, and so, spirit of the manpower. With computerisation and new functionalities, those first exposed to / trained, may be better equipped to handle the job. Old knowledge may get obsolete and the erstwhile 'experts' lose their skill, importance and even work comfort, while new 'experts' arise- leading to workplace balance adjustment. For banks, continuous staff training, update of training materials, work manuals, etc is a must to survive. Often failure to leverage latest technology products well, can be due to poor implementation, data conversion errors, incomplete understanding, absence of crucial data-fields that might not have been important earlier, etc. Data cleaning, deduplication etc., need to be done expeditiously, to enable good adoption and leveraging benefits of the fruits of technology progress.
- The above trends and features perhaps will remain the features of the role of technology in banking, in the next decade.
- Technology adoption often is done to remain relevant in a changing age, doing what the competitors do. Banks with bigger visions, knowledge culture, quick decisions, and early implementation are seen to be in a better position to be able to articulate business plans and marketing pitch earlier and better in situations of change. This leadership often makes a difference in market penetration and customer connect.
- For the next decade, nobody can say if the present state of technical leaderships will continue as it is or there may be change in rankings.

Following the above, we see that availability of technology alone is not going to cause adoption, adoption of a new technology by a migration / switch-over does not mean successful use and leverage of a technology for best business outcome.

- The interplay of the factors above, and the newly arriving technologies will perhaps yield a set of mixed results for impacts of the evolving technologies on the banks.

Now, as to the possible new technology interventions, we may consider a few important current tech-pieces and the possible outcomes with them in the next decade: -

a. Blockchain – This has come following and intertwined with cryptocurrencies like Bitcoin. There are many initiatives to use blockchain, but not necessarily in banking alone. The idea is of having the entire history of a transaction data being available for encryption by the current user and leaving the whole chain available to the next person in the transaction chain to process and then act similarly. This encryption will, so, fail, if any of the previous record is tampered anywhere in the chain. The resulting data is, so to say, lying in a ' public ledger' that no particular person (say Bank) involved in the transaction anywhere can alter.

   This actually makes every participant equally responsible for data integrity of the whole chain, and no one like a bank, is to solely assure all others in the system. This is so, as the purpose was to secure transaction outside banks and Government, in Bitcoin type of cryptocurrencies.

   Some banks have started projects on Block Chain technology. Block Chain, by its nature of open and transparent community owned system to carry information (can be financial message, can be monetary payment also), will have value in the public arena. For Banks, the questions will be whether to adopt it and shift money transfers through it. If banks do not join will they be left out of some business? Are customers otherwise wish to leave banks and shift to Block Chain based systems outside banking world?

A fair guess seems to be that as a technology based business process, Block Chain is here to stay. It is early to say if its security cannot get breached or about other frauds around it. As it involves encryptions of entire data up to the point of transaction by unknown/unregulated third parties, it will perhaps be used more for non-money workflow jobs at banks. Fully bank-community owned blockchain as common channel for few banks can also come up for some activities. Further, moves will be after RBI and Government position getting formed. Technology alone creating trust outside legal and governmental controls, outside banking practices and established international set ups, does not seem adequate for business.

b. Bitcoin etc. cryptocurrencies: - This item will be perhaps fair to be adopted only after RBI full clearance and guidelines. These are money created without country's control and also will remain so. The value of the currency fluctuates abnormally and without relation to national or global economies, or transactions underlying. May be for this fear only, most use of it are in illicit activities.

c. Marketplace Financing/Peer-to-Peer loans: - In this arrangement, people with surplus money can, through an aggregator-cum-technical-platform-provider, lend it to any member. Accessing lender's account for withdrawal, appraisal model, loan delivery to borrower, recovery and accounting are in this intermediary's web based platform. Loan appraisal, purpose, end-use, follow up, etc are not like those of banks'. This is mostly an uncontrolled forum, easy for participants, with minimum hassle, no journeys/ meetings, etc. and agreed risk taking.

What will the banks do? Lobby to RBI to remove this product? Develop a similar product from bank/s with relaxed and automated procedures and try to capture a market slice? Package this product with others to create a foothold or franchisee chain? Tie up with the existing or oncoming aggregators/service providers in the market and create a bigger service including account-holders? Create franchisees of the intermediaries as their backend financiers. We really do not know. The last two options perhaps may have more scope to get market acceptability.

d. Telcos, Mobile Payment platforms, e-payment vendors: - This does not need an introduction. With regulator support and public preference, these new technologies based players (like say PayTM or PhonePe or Airtel Money or so many others – the names indicate no preference), have taken away a chunk of remittance business from banks, due to their obvious operational ease and simplicity. Banks have launched their own BHIM products to join this platform, though these functionalities were mostly there in the banks already, spread around in menu options, biller arrangements, and other parameters in the banks' internet and mobile banking deliveries.

In the above disruptive developments, the new small players - nimble, fully on technology, and having very small physical footprints, are able to plan, create and activate new services that take away customers from banks, and affect banks' business. Impact of technology is playing out here making these players the market makers or customer acquirers putting the banks at background for customer to fetch /push money only optionally (otherwise, the disruptors wallets do that). Banks face demands of being ready to develop complementary applications / products to join them on the web/mobile or plug them in. Technology (or more customer centric deliveries on technology), is pushing this role modification. This will perhaps further grow in scope and extent. These dynamics may even lead the present set up into a different version

with changes in roles, business rules, services and infra –arrangements.

e. Cloud: - Cloud services and use, after slow start and hesitancy, is spreading. The most important motive seems getting rid of lots of management overhead, and an expectation of saving costs in the long term. Public Cloud is becoming the predominant format, leaving some crucial for Private Cloud. Till now, we cannot say if the expected premise of 'additional capacity on tap without limit' sort of situations has really got tested; nor the measure of a longer term cost savings.

   Major rigours in auditing and certifying or grading the providers in the country have not yet been seen. Use of Cloud is going to only increase. All what services will be in the cloud (SaaS, PaaS, IaaS, etc., and add on) and their varieties and ranges will only increase. Client organisations' capacity building in control, and oversight of Cloud Providers are expected to get created somewhat. Information Security in the Cloud is another area upon which client and regulatory activism is weak, but, expected to be seen. Data Centre quality support infrastructure in the country need to improve in this period, for all these to happen, particularly as, now we expect to have a Data Privacy law mandating data localisation (i.e. keep within the nation).

f. Biometrics, wearables etc.,

   Biometrics is more used in low ticket Financial Inclusion products but, the big payments remain mostly as before, not using safety of biometrics. Infrastructure creation and maintenance may perhaps be seen as the difficulty but, more sensitivity to this issue may perhaps show that the call is actually not so tough. Further, for authentication and invoking customer requests, the interaction front for customers may move, by customer preference, to biometrics (say voice, hand) or wearables (smart watch, gadgets). Market will perhaps demand banks to get comfortable in these diverse technologies and their integration into banking backend.

g. AI and Robotics: - In many services requiring much computation, crunching huge volume of data - machines have started to be employed now, and use of Artificial Intelligence. Virtual Assistants and Chatbots are there in some places. This start is not all pervasive and expected in the next decade to expand in scope and depth of coverage. Robots are in use in large scale manufacturing industries to some extent, and some banks have started putting Robots for limited guidance to customers. This trend is expected to increase.

h. Analytics and Big Data: - Customer Centricity is the favoured idea now. Customer information is considered the source of business scope to direct banks' efforts. This means offering granularly personalised product/services, say for example, online loan with tailor-made terms of loan disbursal and repayment calendar. Change of product attributes, introduction of new products, creating or accessing credit score online, and similar many changes are to be planned and undertaken. Customer centricity will demand knowing the customer and studying customer habits for the bank (mostly online activities). Repository of such data – will have to be used for analytic study of customer and then direct messages, products etc. for that customer. The information acquired, and also many relevant environmental or market information, will include Big Data (too huge to manipulate and include unstructured data), on which Business Intelligence and Analytics need be performed. For this, Analytic and Data Science roles have started to get created, activated and expertise grown. What has happened till now has been a start and the next decade is expected to see a reasonable push in these areas.

i. Information Security: - Information Security challenges and diligences are expected to expand well. As the future is predicated with non-bank nimble players with single products or small infrastructure, the info security threat horizon expands significantly, bringing in the threats from gaps and compromises in the banks, the non-bank tech players and online customers. The attack front, malware, defrauding tactics etc. will expand. Security expertise, culture and compliances will be demanded more and more by the Regulators. Rigorous in-house security routines and exercises, process security, App and Infra securities are to be practiced quite strongly. The SIEM centre in-house or outsourced, have to be leveraged by granular check and immediate action on incidences. In-house expertise to formulate and activate the granular security check components will remain a demand in the next decade. With Cloud services spreading, in-house expertise and rigours of deriving assurances from the cloud set up and operations will also be a big need in the next decade.

The banks are yet to involve the Security Heads in the top level planning of product or strategies to any reasonable extent. Over time, security will have to be a key consideration for product, business process, employee ethics, and business choices. This is expected to get initiated in the next decade.

j. Re-orienting bankers' own attitude and understanding of business : - As the nature of 'owning' a customer, customer loyalty, and the partner business entities are going for a churn, banks have to really internalise the market threats and altered positioning of the bank over time. This will have to get reflected in altered processes, altered control tasks, employee work manuals, in-house training materials, and overall attitude re-orientation at the top as also in all layers below. Banks not willing to ride this wave of changes, will run the risk of getting sidelined. Quite some services will get moved to machines from humans. The customer facing exchanges in such scenarios as also problem handling, are to be planned and articulated. This demand of self re-orientation and continuous agility for the bankers will perhaps get accentuated in the next decade.

k. Re-orienting products, communication, etc., in the changing scenario: - The customers, especially the younger generation have gone tech savvy. The platform of customer activity has moved reasonably from a bank counter to say internet / mobiles. In the young customers' world of Facebook or mobile games, 'App's and Virtual world, the presentation and functionalities of items are very different than our banking world. A click takes him to the middle of a game, another by its side opens study materials in a virtual library. Unknown e-entities are friends and persons to share thoughts and trust. The same ease and wide canvas of versatile services waiting for a click, is not happening for his banking, and despite having internet banking, the customer is not able to avail a loan in such short and effortless activities of clicks with about no questions raised. How less taxing and harassing it can be made for him to buy a service without risking the bank? This will not get solved by providing a link or so. This will call for change of product properties, processing workflows, security checking sequences, etc. as also customer grading, recall and fact based interactions online. With some virtual assistants or tailor-made modules, some automated routines are being put in place in the industry very slowly. Expectedly, thorough and in-depth work in this area, involving lots of re-design, can remain a need throughout the next decade.

We have considered possible areas of major activity in the next decade for banks now. Further,

new disruptions can appear. Some areas may have more activities than others depending on progress, early success, competition. As a result of these multiple push and pull, the role of technology in banking will actively grow and transform, in some combination of most of the factors above in the next decade. The extent of predominance of one factor above other, is hard to guess, and will - as always, keep the future unpredictable and, as well unknown. ☯