
**“BECAUSE OF ADVANCEMENT IN TECHNOLOGY &
DIGITALIZATION AT LIGHTENING PACE, THE SCOPE OF
FINANCING ACTIVITIES ARE EXPERIENCING
TRANSFORMATION”**

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ABSTRACT

“Change is the only constant thing in nature”. The same has been seen in financial sector as well. Advancement in technology is playing a vital role in today’s financial world. Several tasks which were once completed by humans are now been handled by machines not only by big computers but by Artificial Intelligence and BOT’s. This new era has brought a new dimension and a transformed world where time is money. Technology in this sector has made an impact on every type of financial activities from payments to online banking to wealth management, risk management and more. In today’s world of cut throat competition Financial Companies have a lot of cost pressure due to which they are turning towards the most efficient ways of handling tasks and AI or is the latest solution provider. Many industry experts argue that AI or machine learning is the future but if we look around, we are convinced that it’s not the future but it is the present. Artificial Intelligence is gaining popularity at a quicker pace, influencing our day to day life, the way we interact with each other and it is finding the ways to improve customer experience. AI is the next big thing in financial industry. There is much more to come in the coming years with more improvements, development, and governance. In this study I have tried to find out how the latest technology i.e. artificial intelligence or machine learning is transforming the financial industry.

Introduction

Inception of Information Technology in Financial industry clock back to early 1960’s where the big financial institutions like banks had introduced in-house IT departments and employed thousands of people. These units were responsible to develop software’s and applications which connects internal departments including their branch offices. Over the years, these systems also enabled electronic interfaces to customers like ATMs, online banking and to external stakeholders like financial exchanges with other banks. In the banking industry, multinational electronic networks emerged, such as the Society for Worldwide Interbank Financial Telecommunication (SWIFT) in 1973 and the Trans-European Automated Real-time Gross Settlement Express Transfer System (TARGET) in 1999. They were an important building block for digitalization between banks, which established interfaces to their internal systems (interbank area). In

addition, providers of exchanges began a substitution of physical trading floors by electronic trading and clearing systems in the 1980s. Meanwhile, most exchanges worldwide are fully electronic and allow trading stocks, certificates and other derivatives in real-time via online modes not only by computers but also by mobile phones and tablets.

Financial industry has become highly competitive today. To be able to survive and grow in the changing market environment financial institutions are going for the latest technologies, which is being perceived as an 'enabling resource' that can help in developing learner and more flexible structure that can respond quickly to the dynamics of a fast changing market scenario. It is also viewed as an instrument of cost reduction and effective communication with people associated with financial institution businesses. The financial reforms, deregulation, globalization etc. coupled with rapid revolution in communication technologies and development of innovative concept of convergence of communication technologies like Internet, Mobile/Cell phones etc. Technology has continuously played an important role in the working of financial institutions and the services provided by them. Safekeeping of public money, transfer of money, issuing drafts, exploring investment opportunities and lending drafts, exploring investment being provided. Information Technology enables sophisticated product development, better market infrastructure, implementation of reliable techniques for control of risks and helps the financial intermediaries to reach geographically distant and diversified markets. Information technology refers to the acquisition, processing, storage and dissemination of all types of information using computer technology and telecommunication systems. Information technology architecture is an integrated framework for acquiring and evolving IT to achieve strategic goals. These technologies are used for the input, storage, processing and communication of information. Information technology includes ancillary equipment, software, firmware and similar procedures, services etc.

Review of Literature

The impact of IT in Financial Organisations is extensive and is manifested in the most varied ways (Granlund, 2007; Alves, 2010). "Prior to the emergence of this environment, the presence of IT in the organization has typically taken the form of specific computer application systems, such as accounts payable and financial reporting systems, which either automate specific operational procedures or support certain managerial processes" (Teng & Calhoun, 1996: 674). It is usually argued that the first use of an information system was in relation to accounting (Rom & Rohde, 2007), because IT was often centered around the firm's financial ledgers and reporting systems (Granlund & Mouritsen, 2003). But, "the constantly growing and changing field of information technology has a significant impact on the roles of executives at all levels of business organizations" (Crescenzi & Kocher, 1984:34). Nowadays, research within management accounting and information systems is coming alive with the advent of integrated information systems such as enterprise resource planning systems (Chien & Tsaur, 2007). In this context, "information management has emerged as the most common brief name for the management of the use of information technology in an organization" (Frishamar, 2002:149). Since the use of IT in financial reporting does not

have a very long history, some research has been carried out in this regard with its major focus on the Internet technology and its effects. Majrebiyan (2005) conducted a study about the impact of web-centered accounting on the quality of information, on the accessibility of data and finally on economic decisions of managers. Results show that based on the responses of participants, qualitative characteristics of accounting information increase through the use of web-centered accounting, and access to data also becomes easier and faster. Therefore, it can be claimed that by using a web-centered accounting system, managers of enterprises could be better prepared for making wise and reasonable economic decisions. Lodhia, Dedrick, Gurbaxani & Kraemer (2003) investigated the impact of using superior communication technology in offering financial inventories at the request of users. Their research focused on studying the impact of superior communication on decisions and predictions, on the level of data accessibility and on the time required for decision-making by users. The study focused on two kinds of companies: small and big companies. In the case of big companies, results did not differ no matter whether financial inventories were done by using superior communication or not, while there was a meaningful difference for small enterprises between these predictions.

Artificial Intelligence - The next big thing in Financial Industry

What is artificial intelligence - the theory and development of computer systems able to perform tasks normally requiring human intelligence, such as visual perception, speech recognition, decision-making, and translation between different languages' Today, Artificial Intelligence or machine learning is a very popular subject that is widely discussed in the technology and business circles. With the advancement in technology, we are already connected to AI in one way or the other, whether it is Siri, Watson or Alexa. Yes, the technology is in its initial phase and more and more companies are investing resources in machine learning, indicating a robust growth in AI products and applications in the near future.

The following statistics will give you an idea of growth!

- In 2014, more than \$300 million was invested in AI startups, showing an increase of 300%, compared to the previous year (Bloomberg)
- By 2018, 6 billion connected devices will proactively ask for support. (Gartner)
- By the end of 2018, “customer digital assistants” will recognize customers by face and voice across channels and partners (Gartner)
- Artificial intelligence will replace 16% of American jobs by the end of the decade (Forrester)
- 15% of Apple phone owners’ users use Siri’s voice recognition capabilities. (BGR)
- Unlike general perception, artificial intelligence is not limited to just IT or technology industry instead, it is being extensively used in other areas such as medical, business, education, law, and Finance.

Benefits of Using AI or RPA.

There is no other business sector that is more focused on developing and implementing AI for speed, accuracy, and efficiency as much as the financial industry. At the heart of the AI revolution are machines learning algorithms, software that self-improves as it is

fed more and more data, a trend that the financial industry can benefit from immensely. AI in finance is creating a huge impact. Robotic process automation, or RPA, is a technology used across multiple industries to automate business processes. RPA software involves what are known as “software robots” to handle repetitive tasks traditionally handled by human employees. That said, there are no actual robots involved in the way one might see in manufacturing or heavy industry. The basic reason why today financial industry is implementing RPA is to reduce time and cost of production using the most efficient ways.

Robotic process automation seems to have gained traction amongst large financial institutions and banks where the scale of business processes is too large for human staff to deal with. In such cases, the financial firms can benefit by freeing up the time their staff spends on managing business processes and reduce operational costs.

Business leaders in finance who are familiar with RPA are interested in adding artificial intelligence capabilities to their software robots to optimize their functioning over time. As per trend in the next two to five years business processes involving document digitization (extracting information from non-digital formats like paper) might be automated using intelligent OCR and NLP. We might see RPA platforms leverage machine learning to automatically prompt businesses with insights on improving efficiency. RPA might still be a necessity only for firms with large enough scale of operations where the integration and capital costs are justified by the cost savings achieved through the automation.

Transformation in Finance Industry

Based on the recent developments in financial world we can say that AI in finance is all about continuous learning and re-learning of patterns & data. AI gives the flexibility to build upon the current system or line of financial products and services. This means there is no need to start from scratch, but can easily keep improvising the offerings over time. Once introduced, AI will keep the financial services updated and ready to face the market. AI in finance is, therefore, invaluable contributing to the financial industry. Over time, AI is not only going to revolutionize the financial industry but become the industry itself. Below mentioned are the few ways AI is transforming financial industry.

Financing Activities

Managing finances in this well-connected and the materialistic world can be a challenging task for so many of us, as we look further into the future we can see AI helping us to manage our finances. PFM (personal financial management) is one of the recent developments on the AI-based wallet. Wallet started by a San Francisco based startup, uses AI to builds algorithms to help the consumers make smart decisions about their money when they are spending it. The idea behind the wallet is very simple it just accumulates all the data from your web footprint and creates your spending graph. Advocates of privacy breaching on the internet may find it offensive but, maybe be this is what lies in future. Thus it has to be the preferred personal financial management in order to save time from making lengthy spreadsheets or writing on a piece of paper.

Since the speed at which it is making progressive steps towards making the financial processes easier for the customers, it is very soon going to replace humans and provide faster and much more efficient solutions. Bots are gradually evolving as innovations are being in the AI sector. Massive investments are being made by the firms who are seeing this as a long-term cost-cutting investment. It helps the companies in saving money of hiring humans and also avoiding human errors in this process.

Though it is still in its initial stage the speed at which it is progressing to evolve the finance sector, it can be well expected that the prospects are going to lead to minor losses, smarter trading and of course top-notch customer experience.

Investment Decisions

Investment companies have been relying on computers and data scientists to determine future patterns in the market. As a domain, trading and investments depend on the ability to predict the future accurately. Machines are great at this because they can crunch a huge amount of data in a short while. Machines can also be taught to observe patterns in past data and predict how these patterns might repeat in the future. While anomalies such as the 2008 financial crisis do exist in data, a machine can be taught to study the data to find ‘triggers’ for these anomalies, and plan for them in future forecasting as well. What’s more, depending on individual risk appetite, AI can suggest portfolio solutions to meet each person’s demand. So a person with a high-risk appetite can count on AI for decisions on when to buy, hold and sell stock. One with a lower risk appetite can receive alerts for when the market is expected to fall, and can thus make a decision about whether to stay invested in the market or to move out.

Detecting Frauds

Every business aims to reduce the risk conditions that surround it. This is even true for a financial institution. The loan a bank gives you is basically someone else’s money, which is why you also get paid an interest on deposits and dividends on investments. This is also why banks and financial institutions take fraud very, very seriously. AI is on top when it comes to security and fraud identification. It can use past spending behaviors on different transaction instruments to point out odd behavior, such as using a card from another country just a few hours after it has been used elsewhere, or an attempt to withdraw a sum of money that is unusual for the account in question. Another excellent feature of fraud detection using AI is that the system has no qualms about learning. If it raises a red flag for a regular transaction and a human being corrects that, the system can learn from the experience and make even more sophisticated decisions about what can be considered fraud and what cannot.

Managing Risk

Since the very basis of AI is learning from past data; it is natural that AI should succeed in the Financial Services domain, where bookkeeping and records are second nature to the business. Let’s take the example of credit cards. Today, we use credit score as a means of deciding who is eligible for a credit card and who isn’t. However, grouping people into ‘haves’ and ‘have-nots’ is not always efficient for business. Instead, data about each individual’s loan repayment habits, the number of loans currently active, the

number of existing credit cards, etc. can be used to customize the interest rate on a card such that it makes more sense to the financial institution that is offering the card. Now, take a minute to think about which system has the capability to go through thousands of personal financial records to come up with a solution- a learned machine of course! This is where AI comes in. Since it is data driven and data dependent, scanning through these records also gives AI the ability to make a recommendation of loan and credit offerings which make historical sense.

AI and ML are taking the place of a human analyst very fast as inaccuracies which are involved in human selection may cost millions. AI is built upon machine learning which learns over time, less possibility of mistake and analyzing vast volumes of data; AI has established automation to the areas which require, intelligent analytical and clear-thinking.

Cost Effectiveness

This is something we all must have experienced and would, therefore, agree with. AI in finance has automated processes and drastically reduced the cost of serving customers. While AI has, on one hand, reduced the cost of financial services, on the other, it has made financing extremely convenient to avail. Through various digital servicing channels, AI is proving effective in attracting that large section of the population to financial services, which previously found them cumbersome, expensive, and time-consuming.

Decision Making

AI in finance is opening up new avenues for banking and insurance leaders to seek advice. No more are financial experts limited to human opinions in order to make forecasts or recommendations in the field of finance. With AI in finance, these leaders can now ask machines questions that are pertinent to their business and these machines can, in turn, analyze data and help them take data-driven management decisions.

Wealth Management

One of the banking areas that have seen a considerable investment in AI is wealth management. Both incumbents and newcomers are realizing that the digital shift happening in the banking space would affect this sector. Industry heavyweights are acquiring tech start-ups with special focus on automatic analysis of large amounts of unstructured data. The purpose is to detect "typical" behavioral patterns. These experts are hoping to build AI engines, which can provide insights on how to best service their high-net-worth clients. By automating large parts of the wealth management process, they would be able to offer personalized, tax-optimized investments to clients, who have far less in investable assets than what would usually qualify for professional wealth management.

Conclusion

The current finance services are all molded based on creating a faster, more efficient service for customers which focusses towards easily accessible quicker options. The cloud-based technology is so often used, the importance of information technology is incredibly vital. When looking at information technology one must look at the entire global financial systems in place which allow this type of technology to flourish and function at an entire global level. The role of information technology in finance allows

financial institutions to constantly get new information at the same rate as their competition. The impact of information technology on financial services also allows customers to be able to easily complete online transactions, which creates a better influence in finance, allowing for the development of information technology and initially create a more fast and efficient service. Financial reporting is also an industry within information technology that has greatly impacted the financial service industry. The growing transformations in information technology have significantly enhanced the way we use financial reports.

Technology has overall driven a persistent obligation for accessibility and innovation something that keeps changing forever. The role of information technology in finance departments plays a big part ranging from small to large applications and operations. Creating more automating and personalized processes strengthens the power of information technology in our society the best example is the way robo-advisors are used. This is a prime example of how IT has taken over how we look at automation in wealth management services such as asset allocation and investment opportunities. Cloud-based services such as Dropbox plays a vital role in information technology, but these services play tangent roles with data reporting and analysis.

Online banking and transactions, and mobile payments are extremely popular in our society today. There are a ton of exposures since financial transactions are being used so much, many financial institutions have to adapt to the latest security, and updated technology in order to stay up to date. Even though there are a lot of risks that are associated with the use of information technology, there are a lot of positive aspects to the use of advanced technology.

There are billions of financial transactions that are happening on a day to day basis, this is why information technology is perfect for the way the financial systems are set up. The software tools and computer systems that are in place for automation, create a huge importance for the use of information technology in finance.

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