CENTRAL BANK OF EGYPT
Egyptian Banking Institute

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CURRENT TRENDS

October 2021

Predictive Analytics in Banking

MOVING FORWARD WITH CONFIDENCE...

Background

The banking sector today faces a lot of challenges – heavy regulations, evolving customer needs, increasing transaction volumes, increased high-tech financial crimes and rapid technological changes to name a few. Managing these challenges requires timely and deeper insights on risk, customer relationships, costs, revenues, and other key parameters. How do the banks get access to such insights? The answer is- using Predictive Analytics.

Clients are also putting more pressure on financial service providers, as they request more personalized solutions, easy-to-access products, and an overall better customer experience in line with strict security and privacy standards. With this ongoing disparity between client demands and banking goals, predictive analytics can help at numerous touchpoints and streamline more than a few operations.

Concept and Definition

Predictive Analytics is a stream of advanced analytics which uses new as well as historical data to forecast activity, behavior, and trends to predict the future. This involves data mining, modeling, employing statistical analysis techniques, and automated machine learning algorithms to make the predictions. It helps organizations discover business issues in real time and address them at the right time to get the best outcomes.

Importance

Banking Analytics, or applications of data mining in banking, enhances the performance of the banks by improving how banks segment, target, acquire, and retain customers. Furthermore, improvements in risk management, customer understanding, and fraud empower banks to maintain and grow a profitable customer base.

The application of data mining and predictive analytics to extract actionable insights and quantifiable predictions can help the banks to gain insights that comprise of all types of customer behavior, including channel transactions, account opening and closing, default, fraud, and customer departure.

It helps banks become efficient by managing the myriad challenges they face. With the steady increase in the growing demand for the analytics, which has successfully managed to produce more sophisticated and accurate results, many more banks are deploying a range of analytics today. While basic reporting continues to be a relevant factor in the banks, advanced predictive and prescriptive analytics are now starting to generate potent insights.

Practices in the banking sector

- **Fraud Detection :** Fraud is becoming an area of big concern for every sector and for banking and financial firms, it can cost a lot to them. Digitization has paved way for the cyber criminals to commit more frauds. Thus banks need intelligent systems and tools to deal with them. Predictive analytics, Machine learning, Big data, Data mining and Stream computing are few tools that help in catching these frauds. Analytics can be used to recognize frauds that are not very obvious and then predictive analytics can be implemented on them to analyze them further. Data integration, utilizing unstructured data and machine learning techniques like supervised and unsupervised learning can help detect fraud cases by following a pattern.

- **Customer acquisition & retention** : Predictive analytics help in the process for optimized targeting, making it easier for banks to instantly identify the high-value customer segments most likely to respond. The customer base can further expand by acquiring the right type of customer.

- **Knowing customer buying habits** : Targeting the right product and tracking customer usage is a challenge before banks which they independently and in conjunction with retailers are trying to curb. With predictive analytics, banks can rapidly segregate various customer segments and replace it with highly relevant, individualized messages tailored to each customer's profile, resulting in a higher response rate. This ultimately helps deliver the right product to the right person.

- **Cross-selling** : Efficient cross-selling of products can happen by analyzing the existing customer behavior at places where multiple products are offered. Which specific products are to be sold to whom hence predicting the outcome is what successful cross-sellers do. And all of this results in more effective cross-selling thus increasing profitability and strengthening the customer relationship.

- **Collections :** Banks can attain a better understanding of their portfolio risk and thus improve the productiveness of the collections process. Most importantly analytics helps identify the customers who would be at risk in the future and what actions banks should take to achieve positive results.

• **Better cash/liquidity planning**: Predictive analytics can help banks track the past usage patterns and the daily coordination between the in- and out-payments at their branches and ATM's, hence predicting the future needs of their potential customers. Optimal management of liquid assets can result in their extra income and a proper analytics plan can help obtain an overview of future changes in investment and liquidity options.

• **Marketing optimization**: Predictive analytics help marketers to plan marketing campaigns and programs and monitor the results closely. By providing an insight into customer behavior and attitudes, and a complete, current view of your customers, analytics help your marketing team deliver the right message at the right time to the right customers.

• **Loan Approval** : Banks and other lenders are becoming more sophisticated about how they evaluate applications for loans. They have begun to realize that not everyone has a high credit score – but that doesn't mean they're not qualified for loans. Some people don't have a credit history, and others are still good borrowers even if they are unbanked. Predictive analytics in finance can help non-traditional borrowers get approved for loan products.

Case Studies of Banks adopting predictive analytics

• **Citibank** is a strong advocate of data-led, analytical approach and often experiments with innovative use cases of analytics by deconstructing data. One primary use case is customer acquisition and retention. The bank has analyzed its customer data with machine learning algorithms and used this analysis to target promotional spending.

• **American Express** serves as a great example of how to forecast potential churn and localize strategies to retain customers. The global financial services company relies on big data tools and techniques to empower business decision-makers to act locally. American Express also analyzes cardholders' spending patterns to provide customized offers and retain customers. Analytics-driven targeted marketing allows the company to match the right customers with the right merchants, resulting in loyal and profitable customer base. And the company is also able to predict a possible churn and design marketing strategies to convert them into life-long customers.

• **Yes Bank**, whose big data analytics use cases received global recognition at Gartner Excellence Awards, uses advanced analytics and data science techniques to map the customer life-cycle and obtain insights into customer behavior. They used these insights for their marketing and cross-selling campaigns and portfolio management tactics.

• **Deutsche Bank** created a new Technology, Data and Innovation (TDI) division in October 2019 to get the technology transformation process underway by reducing administration overheads, taking further ownership of processes previously outsourced and building in-house engineering expertise. Its mission is to "provide and use the right common data, skills and tools for everyone to make decisions and enable innovative solutions that create value for clients and the Bank.

• **The Bank of England** collects data from banks, building societies and insurance companies in the UK. They use this data to monitor and react to risks in the financial sector, and the economy more widely, and to supply data to the Office for National Statistics.

• **ING Turkey** used Sestek's Speech Analytics, and gained valuable insights to improve both customer experience and agent performance. This technology offers an effective way to leverage customer interaction data. This solution transcribes all recorded customer calls to the call center, then analyzes the interactions using various technologies like emotion detection, trend analysis, and more. Through analyzing these transcriptions, brands discover actionable insights for improving customer experience and the performance of call center agents.