New Analytics Techniques Fuel Data Transformation in Banking

An IDC InfoBrief sponsored by SAP | May 2017
New ways of crunching data are disrupting wider society

Facebook uses algorithms to predict with who we should connect. Retailers use analytics to guess what we want to eat. Spotify knows what music we like before we’ve heard it. The explosion of data is **hugely disruptive to the customer experience in the banking industry.** Predictive analytics and machine learning will help banks to anticipate individual customers’ needs, and offer them the right products at the right time.

Banks can start offering instant credit at the time of a purchase in partnership with retailers. Or provide foreign currency options at the start of a trip. Banks will need to undertake their own **Data Transformation.** Structured data will need to be combined with **new, unstructured pools of data,** from social media or other external sources. This all needs to happen in real-time if banks are going to succeed in delivering an instant, personalized service to their customers.
Information stands at the heart of future banking business models

The successful digital transformation of banks will largely depend on how (new) data and information are used in future business models.

Banks need to leverage and manage their fastest-growing asset: the information asset as the currency of digital.

The Chief Digital Officer will be critical to the success of all initiatives.

Source: IDC FSI DX Survey, SAP, May 2016
IDC Perspective: The 5 stages of Information Transformation

**Ad Hoc**
- Information is siloed and value not leveraged.
- Data quality and integration issues constrain usage to limited domains.

**Opportunistic**
- Information value poorly defined.
- Structured data warehousing provides basic analytics. Security is assessed.

**Repeatable**
- Information managed as an asset and intrinsic DX value established.
- Includes internal/external sources, all data formats. Security is critical.

**Managed**
- Information provides competitive DX advantage.
- Comprehensive information platform including social, mobile, and IoT with advanced analytics.

**Optimized**
- Information is the highest value DX differentiator.
- Competitive strength and significant revenue streams from real-time information management.

Which statement best describes your organization's information architecture?

- **8%** Information architecture underpins digital business transformation, supporting a full range of analytics capabilities.
- **31%** Information architecture supports advanced analytics for both structured and unstructured data.
- **40%** Information architecture includes business critical data and analytics.
- **21%** We have a basic information architecture but only for basic operational data.

Source: IDC FSI DX Survey, SAP, May 2016, N=100
The most common reasons for making data investments

Across retail, corporate and commercial banks the most popular reason for implementing analytics solutions is around improving customer experience.

Fewer than one in five of banks worldwide have so far built an open platform to monetize their data. More than 30% are planning to do so in the next 24 months. They won’t be able to do it without an integrated data pool.

Which statement best describes your organization’s information architecture?

Retail Banking

- Combining external data and internal data: 34% already implemented/in process, 35% planning to implement within the next one to two years
- Using cognitive in customer service: 32% already implemented/in process, 36% planning to implement within the next one to two years
- Predictive analytics based on behavioural models: 29% already implemented/in process, 39% planning to implement within the next one to two years
- Using third party data: 22% already implemented/in process, 38% planning to implement within the next one to two years
- Monetizing data via open platform: 19% already implemented/in process, 37% planning to implement within the next one to two years

Corporate & Commercial Banking

- Sales process recommendation using cognitive: 32% already implemented/in process, 38% planning to implement within the next one to two years
- Automated portfolio advice: 22% already implemented/in process, 41% planning to implement within the next one to two years
- Real time credit underwriting: 22% already implemented/in process, 39% planning to implement within the next one to two years

Source: IDC FSI DX Survey, SAP, May 2016
Use case #1: Driving customer service and loyalty with data transformation

As financial activity migrates to the digital world, banks are losing opportunities to meet their customers face to face. This makes it harder to build relationships with them and deliver a personalized service.

To replace this lost knowledge, the best option for banks is to make full use of the data they hold on their customers, focus on adding to it by interacting with customers digitally, and combine this data with external sources of information, such as demographic and regional data.

Performing predictive analytics on all this data gives banks the chance to work out which marketing messages best suit which customers, and when those messages would be most appropriate. The objective should be for banks to let their customers know how the bank can help them at the exact moment the customer needs that help.

Machine learning can analyze customer feedback through digital channels to improve efficiency of responses and improve customer satisfaction.

This is the best way for banks to improve customer service and engender loyalty going forward.
mBank in Poland deployed a Predictive Analytics solution from SAP to deliver a 400% increase in the response rate for its marketing campaigns. The campaigns are now more focused thanks to SAP’s scoring models and algorithms which enable mBank to anticipate individual customer purchases. SAP Predictive Analytics is refining the bank’s loyalty program, with insight-driven, personalized discount campaigns now based on customers’ purchase histories.

Bank spending on Cognitive Artificial Intelligence will rise ten-fold from $984 million in 2015 to $9.3 billion in 2020.

The volume of data required for compliance has exploded, causing huge cost and operational headaches for banks. Regulators expect banks to be able to provide statistics for multiple scenarios with many variables, meaning that their demands are becoming heavily data-centric.

Meanwhile, new privacy regulations such as GDPR in Europe also require that banks have a much better handle on all the data they hold. Banks must be able to respond to customer requests for their data, must make sure they know how data is being used internally, and must be able to delete it on request.

These two compliance imperatives dictate that banks must transform the way they hold data on behalf of customers, and transform their ability to perform analytics on the data.

An enterprise-wide data governance strategy coupled with investments in data governance and analytics is the most efficient way of dealing with the increased regulatory focus on data.

Given the volume of data involved, the cloud must play an enabling role in Data Transformation for fraud and compliance purposes. **Hosting analytics solutions in the cloud will allow banks to scale solutions easily without associated hardware costs.**
A leading bank in New Zealand has deployed analytics to support its anti-money laundering and financial crime efforts by monitoring its payments traffic. Its analytics solution allows the tracking of unusual payments activity and map payments relationships...
Use case #3: Fraud and risk analytics in corporate banking

Data transformation can take a bank’s fraud detection capabilities to a new level of effectiveness.

Feeding transaction records into predictive analytics solutions gives banks a better chance of spotting fraudulent behaviour, as the solutions learn suspicious payment patterns.

Machine learning solutions can be deployed to spot fraudulent activity by staff, by analysing email and messaging records. In the past, fraudsters could use disguised language to hide their activities, but by analyzing data in volumes not before possible, machine learning can detect such practices. Machine learning and automation can also detect keywords in structured and unstructured data to spot fraud and ensure compliance.

The payoff for implementing best in class fraud and risk analytics is unlimited given the potentially catastrophic reputational and cost damages that can follow from anti-money laundering or sanctions checking regimes.
A U.S.-based payment processor has deployed a machine learning solution to monitor online customer behavior and deliver instant fraud decisions. The machine learning solution provides merchant clients with adaptive behavioral analytics which can lower the number of false positives flagged up for fraud reasons. Machine learning is enabling the payment processor to prepare for a world of instant payments.
Data transformation challenges

**Siloed technology and legacy systems are a major challenge when it comes to Data Transformation.** Often decades old, systems are not designed so that historical data can be accessed and analyzed quickly. A strategy to make internal data available for analytics purposes is therefore crucial.

**Securing buy-in from stakeholders will be necessary if the problems of legacy technology are to be overcome.** Enterprise-wide education and incentivizing efforts must be installed so that all staff understand how data should be collected, stored, labelled and used. But buy-in must be secured at board level to give Data Transformation the priority and the investment it deserves, and this means instilling the idea that data must be viewed as a strategic asset by everyone in the bank. An enterprise-wide strategy for data should be the result.

**Data privacy regulations form a third major challenge in undertaking Data Transformation.** New regulations such as GDPR in Europe dictate exactly how data can be stored and used, and create new obligations on the part of banks towards their customers. Compliance with regulation is therefore a must for all European banks and their tech partners, but since GDPR lays out in detail what is and isn’t allowed, there is an opportunity for banks to innovate within the guidelines.
Banks have a long way to go in terms of making their data assets available across their operations. Only at 37% of banks is data from core banking systems made available most or all the time, while Big Data analytics is regularly made available for those who need it at less than half of banks. This shows that banks are not yet making best use of the data within their systems.

To what extent are the following organization-wide IT assets made available to functional teams or central innovation teams for their digital initiatives?

<table>
<thead>
<tr>
<th>Availability Level</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>All the time</td>
<td>14%</td>
</tr>
<tr>
<td>Most of the time</td>
<td>34%</td>
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<tr>
<td>To a certain extent</td>
<td>29%</td>
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<tr>
<td>To a limited extent</td>
<td>17%</td>
</tr>
<tr>
<td>Not at all</td>
<td>13%</td>
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</tbody>
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Source: IDC FSI DX Survey, SAP, May 2016
A new way is needed for data transformation

IDC research shows that leveraging data, whether for insights, as a service, or monetizing it directly, is high on the agenda. The data and information in many companies has evolved without a strategic plan.

This means that in most cases data is too fragmented and inaccessible and this has a big impact on the business overall:

- It is difficult to understand what is happening across the business to optimize costs and profitability
- It is hard to move quickly to capture new markets
- It is hard to understand customers to achieve better long term relationships and value

The upshot is that it is much harder to do business if a bank’s data is fragmented than if it has conquered the challenge of managing data holistically.

Successful transformation efforts often require a new approach to building and running IT systems and data sources. IDC sees the emerging role of the Chief Digital Officer as being vital in the short to medium term in being able to discover, integrate, and platformize information successfully for business advantage.

Leaders of Digital Transformation

- CIO or CTO: 59%
- Chief DX Officer: 21%
- CEO: 7%
- LOB Executives: 5%
- DX Board: 3%
How to move through the stages of Data Transformation

IDC Guidance

Ad Hoc
- Work with IT to develop standard processes to extract key performance indicators and business informatics in the form of analytics and dashboards.

Opportunistic
- Have a working single customer view (account integration as a baseline) and develop an information architecture that includes internal and external data sources to enable instantaneous data analysis and market intelligence.

Repeatable
- Integrate internal and external data and processes like social “listening” using Web, mobile, and analytics sources to drive new revenue streams based on rapid-return information. Security is critical.

Managed
- Capture and monetize real-time data by feeding it into predictive analytics capabilities about products, customers, and markets. Prepare real-time decision capabilities to gain competitive advantage.

Optimized
- Develop data algorithms to capture and valuate information as a key driver for new DX products and services and new nontraditional business models. Gain competence in cognitive systems to grow the business.
IDC Guidance: Find the right external support

To give themselves the best chance of executing a successful data transformation, banks must find the right technology partners to support them.

- Banks must look for suppliers that can support the scale and breadth of their data transformation needs.
- Suppliers with a combination of proven integration capabilities, hosting bandwidth and, at a time when data scientists are at a premium, data expertise, should top the list for consideration.

To learn more about SAP’s solutions, click here.
The Payment Services Directive (PSD2) forces European banks to open up customer data to third parties, but also gives banks the chance to access more external customer financial data. EMEA banks are responding to the opportunity. More banks than in any other region are planning to invest in ways to monetize their data via open platforms in the next two years.

The new data sources and technology can help banks enhance customer experience by delivering:

- Digital assistance based on predictive analytics of customer cashflow.
- Predictive understanding of customer product needs.
- Better aligned and more customised services based on a fuller view of customers’ financial profiles.

Banks must also focus on bringing new products from adjacent industries such as insurance and retail to their bank customers.

To build platform-based offerings, banks’ cultures will need to be open to collaboration and data sharing with third parties including Fintechs. Italian and UK banks in the EMEA region are keenest on this.
EMEA banks must lead in Data Transformation to benefit from GDPR investment

What best describes your organization’s information architecture?

- We have a basic information architecture but only for basic operational data: 5% (NA), 25% (EMEA)
- Information architecture includes business critical data and analytics: 25% (NA), 52% (EMEA)
- Information architecture supports advanced analytics for both structured and unstructured data: 21% (NA), 50% (EMEA)
- Information architecture underpins digital business transformation, supporting a full range of analytics capabilities: 20% (NA), 2% (EMEA)

- Far more EMEA banks have only a basic information architecture compared to North American banks, which are much more likely to be crunching structured and unstructured data already.
- Like PSD2, the General Data Protection Regulation (GDPR) is a huge driver of Data Transformation projects, and can either be viewed as a compliance headache or a business opportunity which clarifies what banks can and can’t do with customer data.
- To comply with GDPR efficiently, the information architecture must be highly mature. This requires the right investments to ensure that data is collected, stored and used properly and effectively, and an enterprise-wide Data Transformation strategy to ensure this architecture is fully leveraged from front to back office.
- Banks should aim to integrate GDPR compliance into their customer service proposition with the minimum of disruption. Building easy to use tools that provide simple and transparent options can give customers control of their data, and can be provided to sales agents and internal staff as well.