Banking Systems Survey 2017/2018

Technology challenges for Dutch banks in the digital era

January 2018

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Executive Summary

In this survey, we asked Dutch banking CIOs about their top priorities in technological innovation within their organisation. Not surprisingly the focus is on APIs and banking ecosystems, also in relationship with the upcoming possibilities of PSD2. Another main priority is data and data management, which is one of the topics where the bank fear the BigTechs most. These BigTechs are native in data and data management. Once the BigTechs speed up their position in the banking industry, we expect that the existing banks will struggle to keep up. This is mainly due to the legacy IT within the existing banks, low data quality, data capabilities and last but not least the technological advantage of the BigTechs combined with close to infinite funds.

What did surprise us is the competitors that the smaller banks fear. Where the large banks fear the BigTechs, the small banks fear the large banks and not, what we expected, the FinTechs. Combined with the focus of the smaller banks on banking itself and not on technology (as most of the small banks use off-the-shelf core banking), this raises the question on how the future position of the small banks will look like. As the large banks are turning into IT companies and their challengers are IT companies by nature, why aren’t the small banks making the switch?

This is also stressed by the distinction in resourcing between large and small banks. The large banks are hiring IT staff, whereas the small banks are decreasing their IT FTE. This is off course the result of their off-the-shelf SaaS focus, which results in less operational IT personnel. But we would have expected a replacement of IT operational personnel with IT analysts, data scientists and other highly qualified IT personnel. But surprisingly it isn’t. Are small banks missing scale?

Robotics was expected to be high on the strategic (IT) calendar, but it is not. Yet. The main application of Robotics is the basic level of process automation. This is a low entry operational solution to solve issues in the existing IT landscape. The biggest value of Robotics is in the cognitive robotics. Although we expect the market to gear up, we realise that the significant investment requirements are blocking market adoption. However, we expect that early adopters will have significant first mover benefits due to lower staffing costs, higher quality and new services.

Our last conclusion is that the Payment Services Directive II (PSD2) has high potential, but this potential is still locked due to unclear legislation. There is also no killer app yet, which can turn the market upside down. We do expect that this delay is just postponing the disruptive impact PSD2 will have in the near future.

Key take-aways:

- The (large) bank fear the BigTechs most
- The small banks fear the large banks and not, what we expected, the FinTechs
- Data management and data strategy are top priorities among Dutch banking CIOs
- CIOs have strong ambitions to increase innovation effectiveness
- The large banks are hiring IT staff, whereas the small banks are decrease their IT FTE
- PSD2 has high potential, but this potential is still locked due to unclear legislation
- Robotics and AI was expected to be high on the strategic (IT) calendar, but it is not yet
- Mid-sized and small banks have a preference for local vendors
Introduction

This year’s report sums up the main results of the survey that we conducted among 15 CIOs from Dutch banks, both large and small. The survey entailed in-depth interviews and questions about their strategy and technologies, about innovation, new technologies and (IT) regulatory challenges.

KPMG’s previous 2015/2016 Banking Systems Survey highlighted several IT developments within the technology trend innovation. It provided a survey of the Dutch banking industry as seen through the eyes of banks’ IT leadership. It tried to link trends in business, technology and consumer behavior to banks’ IT strategies by answering questions such as: what IT strategies have Dutch banks developed to deal with the future of banking and did they invest in new IT systems and infrastructure platforms? Did they have sufficient funding for digitalisation or was too much of their IT budgets spent on regulatory improvements?

In this edition we asked the CIOs about their top priorities in technological innovation within their organisation.

Focus areas

Which technologies are influencing their IT strategies? Which competitors do they fear? What is the impact of technology on IT staffing? What are the main drivers on the CIO agenda? This years’ focus areas are:

- IT strategy
- Data privacy
- Cyber security
- Innovation
- Resources
- PSD2
- Robotics

This KPMG survey examined how well equipped and prepared they are to face new trends, developments and challenges ahead.

We want to thank all participants for dedicating their valuable time to fill out our survey and for their participation and transparency in the interviews.
Internal resources become more important

IT resources as percentage of total staff continues to increase from 22% in 2015 to 25% in 2017. Despite ongoing migration to cloud computing technologies and SaaS (Software as a Service) solutions that have a reducing effect on IT resources.

The increase of resources is mainly caused by IT staff increase in large banks and the further reduction of non IT staff. Smaller banks are actually decreasing the number of IT staff in favor of outsourcing trends.

Large banks prioritise IT as an enabler of growth and expect an increase in IT staff. This is mainly due to the growing importance of IT and the banks’ desire to invest in data analytics and IT innovation. As a result, the balance of internal versus external employees will shift towards internal sourcing.

IT staff as percentage of total staff is growing...

...largely due to the increase of internal IT staff in large banks
What affects the IT strategy of banks?

When asked which new technologies influenced the IT strategy of banks most, data and analytics related technologies scored very high. This is in line with the significant focus on data management that we observe in our daily practice.

Not surprisingly, digitalisation and digital client interaction were very influential as well. With a strong focus on digital client interaction, banks are bringing new client offerings in a digital way.

CIOs also recognised that their business counterparts require a more open platform with connectivity to other parts of the value chain. Significant parts of their IT investments relate to interconnectivity and open banking. A good example of new developments as a result of PSD2 requirements, is the ABNAMRO open API developers portal, where the bank invites developers to create new applications within the banking domain.

Other new technologies (like Internet of Things, robo advisory) have limited influence on the bank’s IT strategy. While media are full of it, the vast majority of banks hardly invest in blockchain. Although most say that they ‘keep an eye’ on the potential game changer. It is not far-fetched to say that media seem to be occupied more with blockchain than banks themselves. One trade finance bank, ATB Bank, has invested in a blockchain solution, whereas the top three universal banks have joined international blockchain consortia. One of these is the Digital Trade Chain Consortium, which is designed to simplify trade finance processes by addressing the challenge of managing, tracking and securing domestic and international trade transactions. For now, the use of blockchain technologies are mainly experimental and the full fledge replacement of current production systems is not planned yet.

Robotics is still in the early days of the hype cycle, with robotic process automation (RPA) slowly taking off. Cognitive robotics –which is at the intersection of robotics and cognitive science –is still in its infancy. Only one large bank is experimenting with advanced artificial intelligence (AI). In this particular area, insurers seem to have overtaken their bank peers. Insurers are embracing robots over humans for customer service and are experimenting with Watson-based solutions, IBM’s artificially intelligent super computer.

The survey outcome shows that banks are heavily investing in data, cost effectiveness as a driver for IT strategies has become less important. Although CIOs still need to be smart in spending their budgets, they feel much less pressure on costs savings than in previous years. However, when it comes to innovation, 71% of the banks interviewed said there were no budget constraints in relation to innovation. It is clear that CIOs have significant room to maneuver when it comes to investing in promising new initiatives.

To what extent do these technologies influence your IT strategy?

<table>
<thead>
<tr>
<th>Technology</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data &amp; Analytics</td>
<td>4</td>
</tr>
<tr>
<td>API and connectivity</td>
<td>3</td>
</tr>
<tr>
<td>Cloud computing</td>
<td>2</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
</tr>
<tr>
<td>Robotics</td>
<td>1</td>
</tr>
<tr>
<td>Blockchain</td>
<td>1</td>
</tr>
</tbody>
</table>

2 http://www.banken.nl/nieuws/20495/amsterdam-trade-bank-test-met-blockchain
All market participants in the Dutch banking industry fear the top three universal banks ING³, Rabobank and ABN AMRO, in this report referred to as ‘Tier 1’ or ‘large’ banks. The top three players themselves fear each other and the FAGAM BigTechs (Facebook, Amazon, Google, Apple and Microsoft). Hardly any of the banks is afraid of competition coming from challenger banks.

As for competition from new fintech entrants, banks commented that they do not fear the Fintech, they rather seek collaboration for innovation purposes. None of the banks expressed any intention to acquire Fintechs.

### To what extent do these business strategies influence your IT strategy?

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Extent</th>
</tr>
</thead>
<tbody>
<tr>
<td>New technologies (roboadvisory/block chain)</td>
<td>4.7</td>
</tr>
<tr>
<td>Cost effectiveness</td>
<td>4</td>
</tr>
<tr>
<td>Other</td>
<td>3.4</td>
</tr>
<tr>
<td>Competition of startups/fintech companies</td>
<td>3.2</td>
</tr>
<tr>
<td>Growth and scalability</td>
<td>3</td>
</tr>
<tr>
<td>Connectivity with other solutions</td>
<td>2.7</td>
</tr>
<tr>
<td>Digitalization</td>
<td>2.2</td>
</tr>
</tbody>
</table>

### Which competitors do CIOs fear?

All market participants in the Dutch banking industry fear the top three universal banks ING³, Rabobank and ABN AMRO, in this report referred to as ‘Tier 1’ or ‘large’ banks. The top three players themselves fear each other and the FAGAM BigTechs (Facebook, Amazon, Google, Apple and Microsoft). Hardly any of the banks is afraid of competition coming from challenger banks.

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### To what extent do the following types of competitors influence your business?

<table>
<thead>
<tr>
<th>Competitor Type</th>
<th>Extent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large incumbents</td>
<td>4.5</td>
</tr>
<tr>
<td>Niche incumbents</td>
<td>3.7</td>
</tr>
<tr>
<td>New Fintech initiatives</td>
<td>3</td>
</tr>
<tr>
<td>Big Tech platforms (Facebook, Alibaba, Google etc)</td>
<td>2.8</td>
</tr>
<tr>
<td>Existing financial services players that change position in the value chain</td>
<td>2.5</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
</tr>
</tbody>
</table>

¹ING: grootste dreiging komt van Amazon’, FD, 31 oktober 2017
Large banks become IT companies, small banks rely on software vendors

The percentage of in-house built core banking systems remains high within large banks. They are using in-house platforms for their product administration, such as current and savings accounts, whereas nearly all smaller and usually younger banks are using core banking software packages. Typically, these are package-based, ready-made commercial off-the-shelf packages used for implementing target applications.

Large banks seem to have shifted their focus from replacing their +30 year-old mainframe core banking systems into further development of these systems. The focus is on re-using systems by means of integration technologies and reducing complexity, rather than renewing core banking systems (which has been common practice over the last decade). Unlike the previous survey outcome, core banking renewal does not rank high on the CIO agenda. Has their mindset changed?

Large banks have also focused on improving the interface with front-end systems by using dedicated middleware tooling. This enables a bi-model strategy where the front-end can be agile and the back-end evolves over time and is developed based on regulatory and/or business demands.

In the next survey we may zoom in on the rationale behind the IT system selection process among both groups.

**Strategies towards main banking**

Survey participants could choose one or more answers

![Bar chart showing the percentage of strategies]

- **30%**: Outsource IT
- **20%**: Buy core banking systems suite
- **10%**: Buy core banking systems best of breed
- **10%**: Develop inhouse banking systems
- **10%**: Make use of SaaS solutions for core banking systems
- **10%**: Outsource core banking process to partner (BPO)
- **10%**: Develop a solution build from an ecosystem of partnerships

Typically, banks that are using software packages for their core banking system follow a best-of-breed strategy with multiple product administration modules such as current and savings accounts – on premise or as SaaS (Software as a Service). Additionally, most have adopted business process outsourcing (BPO) for specific product areas (mortgages, payments, cards, wealth management). The outsourcing of payments is gaining popularity in the process of becoming PSD2 compliant.

**Small banks switching to SaaS or IaaS**

An important trend is the willingness of most banks to migrate on-premise hosted systems to SaaS or IaaS (Infrastructure as a Service), hosted by (software) vendors. This is a paradigm shift compared to previous surveys. Smaller banks do not employ IT staff (e.g. infrastructure or software development) anymore or will be cutting personnel in the near future. Not surprisingly, the survey results show that the number of IT resources is declining at smaller banks.

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*A best of breed solution is the best system in its referenced niche or category for, e.g. a combination of separate administrative, CRM and order management systems. Typically, a best of breed solution performs specialised functions better than an integrated system.*
Dynamics in adjacent systems
Whereas changes to core banking systems are limited, adjacent systems show increased dynamics. Adjacent systems include the segments of e.g. content management, customer relationship management, business process modelling, middleware, asset and liability management, general ledger, treasury and prudential reporting. Multiple banks have plans or are running projects to replace, upgrade or move adjacent systems to SaaS or IaaS. This is also the domain of software packages. In-house applications are sometimes used but only for financial risk management and prudential reporting.

Banking software suppliers
In our survey we also asked Dutch banks about their software suppliers. The Dutch market of core banking systems has numerous vendors, all competing for attention among a limited number of banks. Our survey results show no market domination of a single software vendor, although Wolters Kluwer (Risk Pro), SAS, FiveDegrees (Matrix) and Allshare (Bankview) remained popular or grew in number of instances compared to our previous survey, providing a broad range of solutions to meet risk and compliance challenges. On top of this, the results show that Dutch local vendors (such as Wolters Kluwer and FiveDegrees) are relatively popular in the Dutch market.

However, in this era of radical technological advancement, the banking industry faces a number of challenges, e.g. their customers expect a modernised banking experience and systems are under high pressure due to cyber security risks (i.e. phishing, malware, ransomware). This is also what we’ve found in our survey. Although some banks have the ambition to replace their current core banking system most banks are still focusing on renovation rather than renewal of their core banking systems. However, as these systems have proven to be robust in the past, we believe that continuous improvement is required to avoid legacy systems.

5 Excluding internally developed banking software systems
6 See “What affects the IT strategy of banks?” p. 6
7 See “Expected increase in cyber security investments” p. 20

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Data management ranks high on the CIO agenda

With new regulation (PSD2, GDPR) coming up, the need for managing data and corresponding investments is evident. All banks recognise the huge importance of data management. On average they rank their current capability as very low whereas the ambition level for 2020 is high. Data management will significantly rise on the priority list of investments. As KPMG, we believe that within a few years banks will spend more funds on managing data than on managing IT applications and infrastructure.

Although data are regarded as key, banks we interviewed hardly intended to build new business models around them. The focus remains on core business model variations and gaining interest revenues from lending. Creating new business models in order to stay ahead of Big Techs and peer-to-peer platform\(^a\) (e.g. selling data or creating new services from current data), does not rank high on the IT agenda. Banks are working hard to improve their data foundation (data lakes, data policies, data Esperanto, data lineage, data scientists, data stewards) in order to be prepared for upcoming initiatives and regulation. The fulfillment of the data foundation may lead to different answers in future surveys.

Most banks have set a vision and are implementing data governance within their firms. The maturity around innovation with data and data governance is still perceived as low.

Interestingly, CIOs believe that their current data technology is no impediment for improvements in data management. The technology used is up to standards, but the way in which technology is used is the limiting factor. Knowledge of data and data management needs improvement and processes around data management must be improved. Most importantly, the shortage of skilled data & analytics resources is widely felt as an issue going forward.

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PSD2: A watershed moment for banks?

Overall, the implementation of PSD2 is seen as an opportunity by CIOs as concepts like API ecosystems, marketplace banking and Open Banking provide new perspectives on how banks can provide increased value to banking customers. Main goal of PSD2 is to stimulate the sectors innovation throughout Europe, this might therefore also become a stimulus for the innovation capabilities of Dutch banks. With a new European competitive landscape opening up, PSD2 may be a watershed moment for large and small banks.

The Payment Services Directive II (PSD2) is likely to become a huge game changer across Europe. Banks will now have to share customer transaction and account data with third parties, including Fintechs, retailers, telco providers, payments services and financial account aggregators. PSD2 will be a trigger to open up the current banking landscape, inviting new players to the financial arena, with new customer experiences, bringing possible disruption to incumbent banks.

The interviewed banks stated several possibilities to add value for both customers and themselves, including use cases in personal finance management and new payment and checkout options at online and offline merchants. Enhanced transparency and understanding of customers’ finances could for example allow credit agencies to conduct a more accurate risk assessment while personalising its service offerings. Additional insight into customer behaviour was also mentioned.

Large Dutch banks view PSD2 with mixed opinions, 57% consider it an opportunity against 43% a threat. More than becoming compliant, Tier 1 Dutch banks are developing new payment services and products (67%) and digitally transforming their business (33%). Whereas small banks are implementing PSD2 as a compliance project, while remaining on the defensive side (28%), rather than targeting its full potential with an open mind towards innovation and building new market opportunities.

For PSD2, the large banks especially fear that the BigTechs and other large incumbents might turn into new payment services providers.

What type of new competitors do you expect?

Pre PSD2, the first new propositions have already emerged (by ING, not the BigTechs yet). One of them is Payconiq, a new payment method that is ‘redefining the way people pay at shops’ with a link to loyalty schemes. Another potentially first mover is Gradefix, a service that offers ‘risk as a service’ and ‘uses transaction data to perform analyses and risk assessments for clients’. Both FinTechs have been founded by large banks.

This may be a watershed moment for large and small banks. With large banks having the investment power to invest in terms of head-count, marketing and financial resources, they will come up with new business propositions.

Despite recognising the potential challenges and opportunities as presented by PSD2, nearly all banks have allocated limited budget to PSD2 related changes (0-2%), despite the potential cost increase due to increased security requirements and new third-party access channels through API (Application Programming Interface) technology.
Most banks indicated that they are developing new payments services or products, such as personal finance management services, data & analytics based services and consumer advice/robo advice based services.

Three of the interviewed banks said that they are anticipating the new directive and digitally transforming their business operations. These are the ones treating PSD2 as a trigger to engage in a broader digital transformation that goes beyond developing and delivering new products and services.

Respondents who indicated that they will be offering solutions to third-party providers say this will be based on API technology. The banks surveyed are preparing for a dedicated channel while legally avoiding the technique of screen scraping. In this particular technique, a third party is using the customer login credentials to login to internet banking. APIs will ensure the bank remains in control of the exchanged data and the way in which these will be exchanged, while allowing for standardisation in the way of interacting.

As a conclusion we observe that PSD2 is not yet the watershed for banks. Unclear legislation, combined with slowly moving existing small banks and large banks that see PSD2 as a threat, are currently delaying new initiatives. PSD2 still has the potential of a game changer, but things aren’t moving as fast as we expected.

43% of large banks take offensive action whereas small banks are implementing PSD2 as a compliance project while remaining on the defensive side (28%).

79% of small banks consider PSD2 an opportunity, yet only few indicated they are actively developing new products.

Large banks are more moderate in their expectations (57%), but actively developing new products.

BigTechs (33%), large incumbents (25%) and FinTechs (25%) are said to pose the biggest threat in providing payment or payment-data related services.

PSD2 budget is limited (0-2%), despite increased security requirements & new channels for third-party access, e.g. via API technology.
Banks rate themselves poorly on their innovation capabilities

Banks believe themselves to be ineffective and see the need to improve their innovation culture. Creating an innovation culture is the next step to monetise investments effectively. KPMG believes that a shift in business culture is required for banks in order to improve their innovation capabilities, as APIs ecosystems, online services, workflow automation are becoming more and more important.

57% of Dutch banks spent more than 5% of their IT budget on innovation. Additionally, a majority of 71% stated they were not constrained by the budget. Despite their budgets, banks believe that they are not effective in innovation within their organisation. Possible explanations for this range from ‘culture’ to ‘expectation gap’ and ‘mindset’.

Some banks do have dedicated Innovation Managers employed, although formal innovation processes seem not widely adopted across banking organisations.

When asked how to improve on innovation, the cultural aspect was mentioned most often: ‘Change the culture’, ‘leadership engaged, we need to involve the rest of the organisation’, ‘Change the mindset: add it to day-to-day thinking’.

Collaboration with other organisations is one way in which banks are trying to become more effective. For challenger banks, creating alliances is key as they lack the funding to compete with the budgets of large universal banks. As one CIO stated: ‘We need to be very smart with our limited investment budget, we therefore try to leverage on technology firms that want to collaborate in bringing innovation’.

Goals of innovation

- Production (competencies, assets and technologies)
- Delivery (occasions, locations and channels)
- Markets (customers, needs and experiences)
- Offering (products, services and brands)
- Business model (networks, partners and pricing model)
- Other
Product-oriented innovation stands out among banks. “Can we bring innovative products to our clients?” was one of the answers heard. As for involvement in IT innovation, the CIO believes he or she is the designated person to stimulate innovation. Two of the banks surveyed have a dedicated Innovation Officer.

We believe that a shift in business culture is required for banks in order to improve their innovation capabilities.

**Involvement in IT innovation**

<table>
<thead>
<tr>
<th>Role</th>
<th>Score</th>
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<tbody>
<tr>
<td>Managing Board</td>
<td>5</td>
</tr>
<tr>
<td>CIO</td>
<td>5</td>
</tr>
<tr>
<td>Management team IT</td>
<td>4</td>
</tr>
<tr>
<td>Innovation officer</td>
<td>3.5</td>
</tr>
<tr>
<td>Marketing</td>
<td>3</td>
</tr>
<tr>
<td>A dedicated...</td>
<td>3</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
</tr>
</tbody>
</table>
Are bots the future for Dutch banks?

Over the last decades, banks and financial institutions have achieved significant efficiencies through outsourcing, offshoring and labour arbitrage. On top of this, the development of AI (artificial intelligence) and robotics (also known as ‘digital labour’) is so fast, that scientists from across the globe believe that it will profoundly impact and transform the workforce of the future across the financial sector entirely.

The spectrum of digital labour is very broad – ranging from automating simple cutting and pasting activities from one system to another, right up to cognitive solutions performing activities (such as decision making) which was previously performed exclusively by (highly educated) humans.

Nowadays, it is not uncommon that banks increasingly save billions in customer care costs simply by using chat robots to answer numerous of questions, as the days of customers relying on personal bankers to help with their day-to-day transactions are fading fast.

And as technology improves and machines become smarter, faster and cheaper, it is even possible to imagine a future in which other easily automatable parts of a financial institution follow a similar path, with current human employees training their robotic replacements to take their jobs. Areas likely to adopt (cognitive) digital labour are the current, usually human labour intensive, processes with limited IT support, like advice, reporting and (credit) approvals.

Based on the results from this survey, however, we see that this train of thought is not in line with current developments in the Dutch banking industry.

**Limited investing in cognitiverobotics**

The majority of banks indicated neither to invest in the application of digital labour in the banking industry nor to incorporate the digital labour agenda in the overall corporate strategy.

We found this quite surprising as we believe digital labour has the potential to disrupt the Dutch banking industry in the coming years. Especially since banks are being dogged by low margins, automation and technology that represents a long-desired chance to boost profitability, even if in the longer term they pose a near-existent threat to the banks’ old way of business. Furthermore, digital labour has low entry barriers for implementation and can be managed independently from the IT department, which questions the results even more.

Nonetheless, respondents argued that they would most likely invest in robotics process automation (RPA) as a robotics solution, rather than invest in enhanced process automation (EPA) and/or cognitive robotics. Cognitive robotics involves self-learning systems that use data mining, pattern recognition and natural language processing to mimic the way the human brain works.

Our survey results show that only one tier 1 Dutch bank is exploring opportunities to leverage cognitive abilities, such as artificial intelligence assets enabled with natural language processing in order to take the next step in the automation journey, i.e. cognitive learning to provide banking services.

The graph below illustrates that the majority currently only aims for RPA, with a focus on process:

**Investments in digital labour**

![Diagram showing investments in digital labour with RPA, Machine, and Cognitive categories](image)

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a They often sit on the desktop and run at the user level (i.e., they look to the environment to be a human user and have credentials to log on to systems as a user would).

b Enhanced process automation (EPA) leverages additional capabilities to RPA. EPA is a form of robotics which includes learning capabilities (e.g. “learning assist” by watching and recording) and the ability to work with unstructured data.
The results show that RPA is at the forefront of human-computer technology. It provides a virtual workforce that leverages capabilities such as workflow and rules engines to automate manual processes. RPA can imitate and implement repetitive human actions and processes through rule-based tasks, such as trading systems. Rules can be programmed to perform research on orders, resolve discrepancies and clear trades. While it takes a human five to ten minutes to reconcile a failed trade, RPA can do the same within a quarter of a second. This operational level type of process automation shows that digital labour is not a strategic topic. RPA is used to automate specific administrative tasks to deliver quick wins, without fundamentally changing the current way of working.

Is RPA the future of banking?
The results show that RPA is at the forefront of human-computer technology. It provides a virtual workforce that leverages capabilities such as workflow and rules engines to automate manual processes. RPA can imitate and implement repetitive human actions and processes through rule-based tasks, such as trading systems. Rules can be programmed to perform research on orders, resolve discrepancies and clear trades. While it takes a human five to ten minutes to reconcile a failed trade, RPA can do the same within a quarter of a second. This operational level type of process automation shows that digital labour is not a strategic topic. RPA is used to automate specific administrative tasks to deliver quick wins, without fundamentally changing the current way of working.

RPA is still in the preliminary stage. As Dutch banks are only beginning to understand its role within their organisation, the importance of cognitive automation in business is slowly evolving.

Cognitive automation requires huge investments in time and capital and has the greatest potential to disrupt the banking industry. Some experts believe that artificial intelligence will triumph over humans in time. What will stop Dutch banks from deploying digital labour tools for their clients?
Fear for work counsels is impeding robotics application

For RPA the banks mentioned the following challenges:

Challenges seen in digital labour

The results show that resistance from works counsel appears to be the most blocking issue for CIO’s to implement RPA within their organisation. As KPMG we see that maintainability on the longer terms can become a challenge, as digital labour usually is implemented on top of (legacy) systems and is not part of IT delivery processes with standards for testing, documentation, security, auditability etc. This has the potential to become the new ‘spaghetti’ if not managed properly.

In conclusion, respondents of the banking survey 2017 are customers who aim to robotise their processes by implementing a RPA solution in their organisation, but whom are facing challenges that stop them from deploying digital labour tools within their organisation.

However, in order to stay ahead of BigTechs (as they are increasingly experimenting in ways to combine new technologies, including cloud computing, artificial intelligence, Blockchain technology and digital labour, to help provide financial services), banks and other financial institutions need to take proactive steps to prepare for the coming technological changes, such as relating to PSD211, to the financial industry.

11 See “PSD2: a watershed moment for banks?” p. 12
Data privacy: Are banks over-confident in being compliant with GDPR?

With the upcoming GDPR (General Data Protection Regulation) becoming effective as of 25 May 2018, most banks are keen to become compliant. Banks who do not comply may be subject to high fines and reputational damage.

Banks indicated not to be afraid that GDPR requirements are not met on time, including the assignment of Data Protection Officers (DPOs), having an archiving policy regarding privacy sensitive data in place, and awareness of the storage location of sensitive data. The majority of banks has had a data policy in place for more than 2 or 5 years. Only one bank did not yet have a data classification policy in place.

Banks are positive on being compliant in time, but are they overconfident? There are challenges to be faced in the area of data governance and data quality, which are both directly related to being in control in the area of privacy sensitive data. As always, it boils down to execution. Banks breaching the GDPR will face penalties.

Overall, banks do not (yet) regard GDPR as a burden to manage and expect to remain on schedule. The situation is different for insurers who are also subject to GDPR and who will need a greater command over the customer or consumer personal data they hold, why it is held and how long it is held for.

Since when is policy in place for the usage of analysis of privacy sensitive information?

- Less than 6 months: 14%
- Less than a year: 14%
- 1-2 years: 14%
- 2-5 years: 15%
- Longer than 5 years: 43%

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Expected increase in cyber security investments

For large and small banks cyber security ranks high on their agendas. Both from an IT and business perspective, cyber security risk awareness is embedded in the organisational culture.

Based on recent developments, such as the ransomware attacks in early spring 2017 and the role of cyber security in struggles between nations, this topic becomes more and more relevant. The majority of banks is spending more than 4% of their IT budget on cyber security measures, including the frequent performance of cyber resilience testing. Banks are conscious that cost cannot increase forever and are looking for a mix of measures, such as innovative tooling and methodologies to control cyber risks at lower costs.

The most cited threats included malware, hacking, phishing and ransomware. Given the increase of these threats, think of the ransomware attack of early Spring 2017, the majority of banks expect to see an increase in cyber security investments in the coming years.

How is cyber security ranked within the organization’s culture?

<table>
<thead>
<tr>
<th>Rank</th>
<th>Business</th>
<th>IT department</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very high</td>
<td>70%</td>
<td>60%</td>
</tr>
<tr>
<td>High</td>
<td>20%</td>
<td>10%</td>
</tr>
<tr>
<td>Moderate</td>
<td>5%</td>
<td>10%</td>
</tr>
<tr>
<td>Low</td>
<td>5%</td>
<td>10%</td>
</tr>
<tr>
<td>Very low</td>
<td>5%</td>
<td>10%</td>
</tr>
</tbody>
</table>

The greatest drivers for cyber security risk

- Hacking: 21%
- Phishing: 24%
- Ransomware: 19%
- Malware: 15%
- Intellectual Property theft: 7%
- DNS: 7%
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