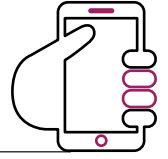




Automating The Smart Way

How To Get The Most Out Of Lean, Robotic Process Automation And Artificial Intelligence In Banking

1 With smart automation, banks can address the challenges of efficiency, customer centricity and growth



Over the past few years, banks have been constantly battling with slow growth, increasing capital requirements, unrelenting regulation and continued cost pressure. This unprecedented situation forced them to develop a culture of operational excellence – maximizing the efficiency of their processes, organization and tools – while maintaining regulatory compliance.

Regulation and cost pressure will always remain important topics, but banks are now facing new challenges - including digitally-empowered customers with increasing expectations and different

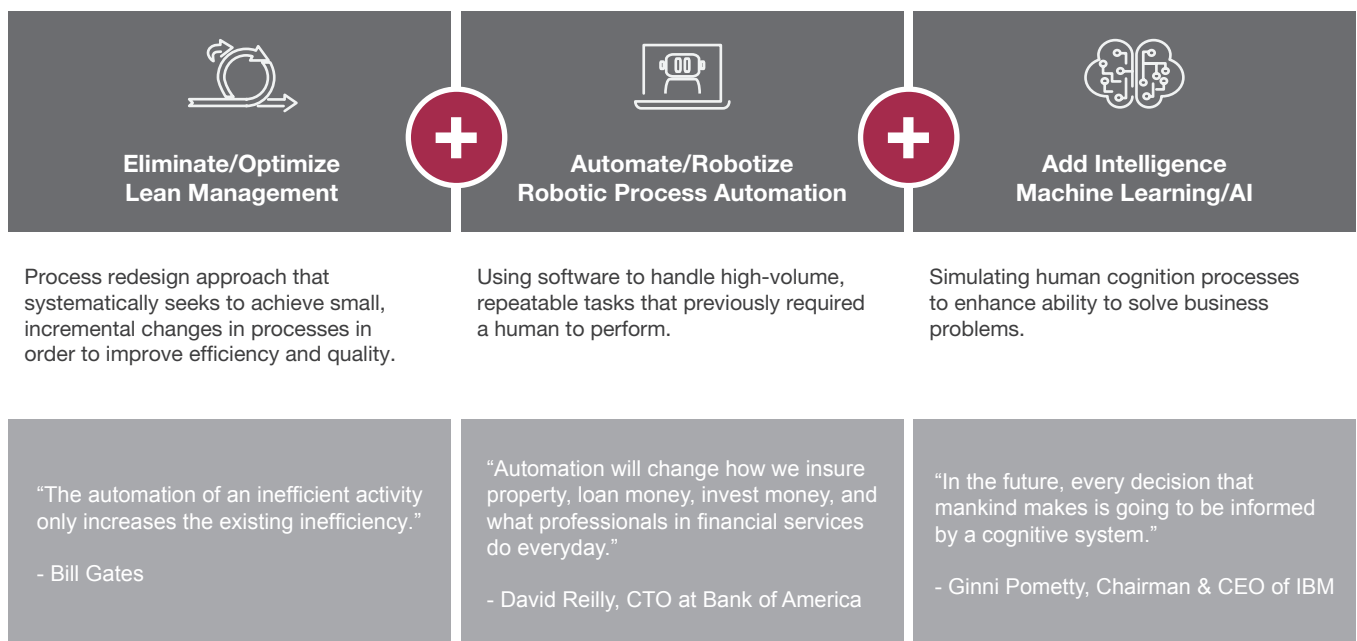
needs. Furthermore, with macroeconomic drivers and pent up thirst for profits, the industry is at an inflection point.

To address these numerous challenges and to stand out from the competition, banks must take advantage of the rise of automation technologies in smart way – such as Robotic Process Automation (RPA), Artificial Intelligence, Machine Learning and Cognitive Computing. Together, they can increase process efficiency, help build a new customer experience, unlock more opportunities, and ultimately help create sustainable growth.

Have a holistic approach towards automation

Capgemini has developed a holistic approach towards automation which helps banks to re-think, re-design and re-configure its core business operation. The approach combines Lean methodologies with Robotic Process Automation (RPA) and Artificial Intelligence (AI), and helps organization to work out where and how they should use these technologies – or not.

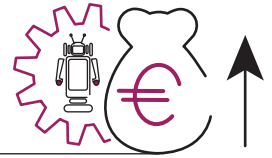
Figure 1: Our holistic approach towards Automation



In this Point of View, we will illustrate the concept of RPA and explore how Artificial Intelligence technologies such as Machine Learning and Cognitive Computing can be combined.

© Capgemini Consulting 2017

2 Banks have been investing in Robotic Process Automation (RPA) to increase their efficiency



RPA is an affordable technology bringing substantial benefits

RPA is a set of technologies using software as a 'virtual employee' to manipulate existing applications (e.g. ERPs) and to execute repetitive rule-based processes in the same way that a person completes a process. This virtual workforce helps to minimize (or even eliminate) human intervention in the execution of tasks and decision-making.

Many banks have already recognized the significant benefits of RPA and are investing heavily in this technology.

Improved effectiveness and quality

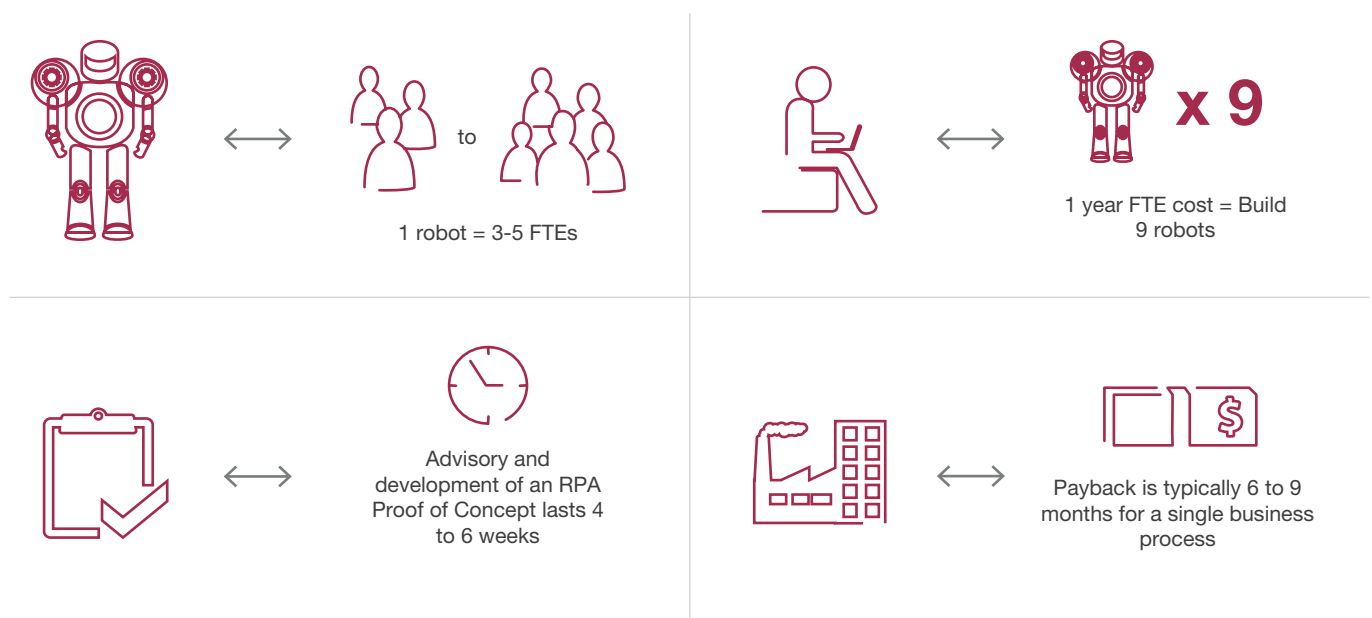
As banks have been seeking cost reduction strategies for several years, they have typically already conducted various process optimization projects and outsourced activities to lower costs. Now that most banks and insurers have reaped the benefit of these initiatives, they can use RPA to further reduce costs and transition from services-through-labor to services-through-software. As a result, process speed and process stability will improve significantly since robots can work faster and more accurately than humans. Where processes are complex yet highly rules-based, and

employees are prone to error, RPA can significantly reduce error rates and improve the quality of work¹.

Improved compliance

Reducing risk and increasing compliance is another valuable benefit from RPA. Once designed, virtual employees will follow the same routines 100% of the time. Consequently, robots maintain adherence to standards. They can even be used to monitor human transactions, prompting alerts for any out-of-the-ordinary activities, which reduces risks and fosters better compliance¹.

Figure 2: Our experience of RPA shows outstanding results



© Capgemini Consulting 2017

¹ Robotic Process Automation – Robots conquer business processes in back office, Capgemini Consulting 2016

Figure 3: Based on our experience, we have identified four key success factors for RPA projects in banking

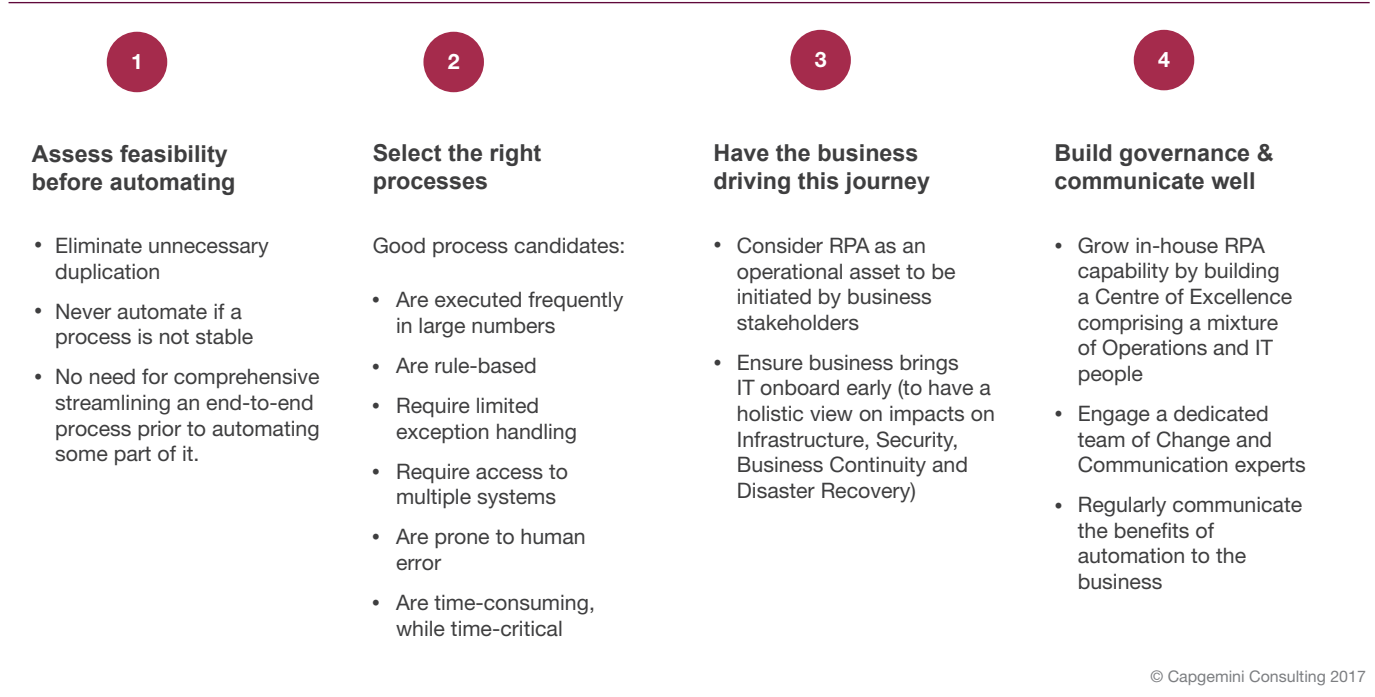
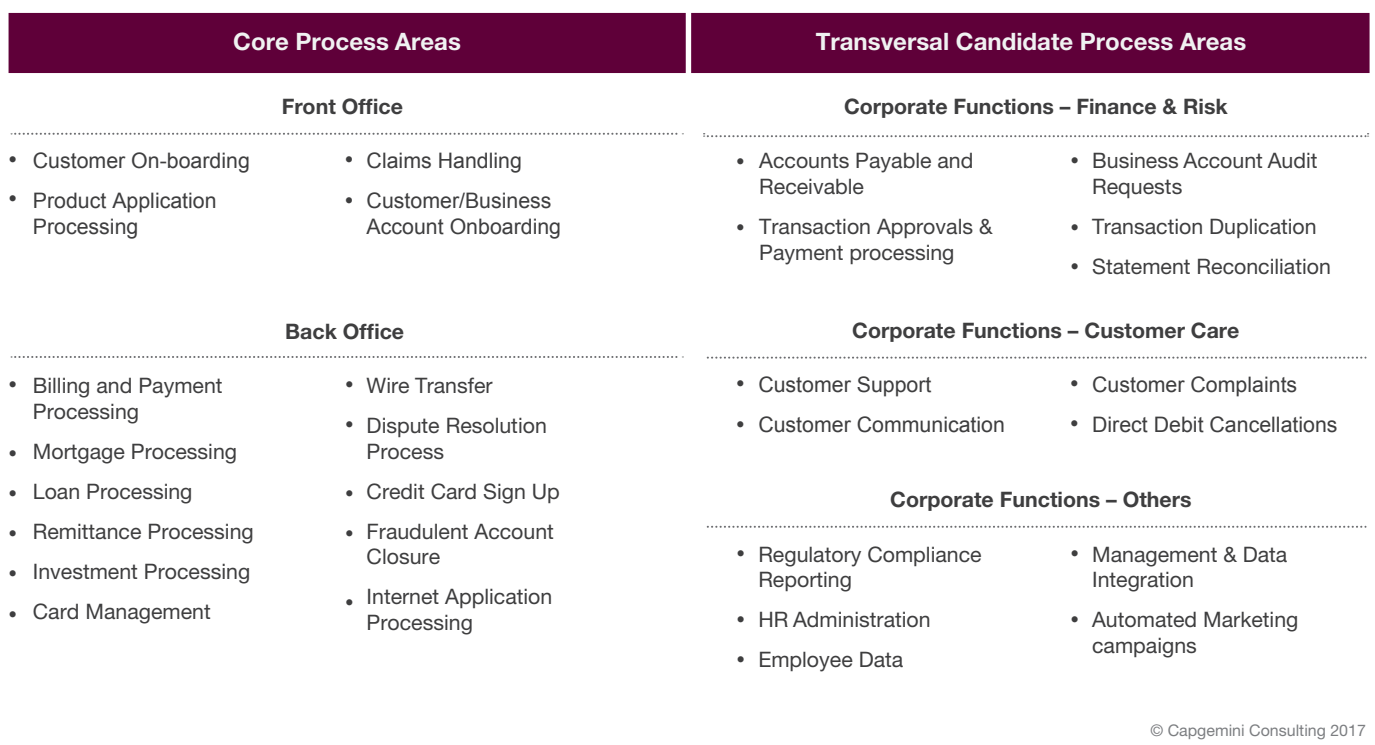


Figure 4: Our RPA experience in banking helps us identify potential candidate processes





3 With Artificial Intelligence, automation is going to the next level, giving banks a new challenge: lead or be left behind



A digitally disrupted world is rising

Are you familiar with concepts such as computer vision, speech recognition, machine/deep learning and natural language processing? If not, you may already be lagging behind.

This transformative set of technologies, subsumed under the Artificial Intelligence umbrella, takes automation to the next level: simulating human cognition processes to upgrade a business' capability to overcome the physical limitations of labor and open up new sources of value and growth.

The key is to consider AI as the hybrid of human and technology, which generates more value than either one of them alone. Not only does AI replicate labor activities at greater scale and speed, it can now

even perform some activities otherwise beyond human capabilities. Google's AlphaGo victory in Go, beating the top human player in this board game, is the most recent example of this.

To avoid missing out on the opportunity AI offers, bank leaders must work towards the future use of artificial intelligence. They need to look at AI not just as another productivity enhancer, but as a technology that can transform their business operating model and create sustainable growth through innovative products and services.

Capgemini groups AI algorithms into 4 main categories:

- Computer Vision – Algorithms enabling computers to process, analyze and gain high-level understanding of digital images or videos

- Speech Recognition – Technology that enables computers to recognize and translate human language so that machines can understand
- Machine/Deep Learning – A layer of self-learning algorithms through which data is analyzed and insights are assimilated by the AI without human intervention
- Natural Language Processing – Technologies that use intelligent systems in speech or text to communicate with a human being in natural language and syntax

It is also important to mention that big data is the foundation feeding into smart automation platforms that enable the implementation and exploitation of AI.



AI will drive benefits from digitization and lead innovative growth

Leveraging the power of AI and the surging popularity of cognitive technologies, financial service firms will be able to lead the digital transformation and unlock more opportunities.

Take efficiency gains to the next level

- AI equipped robots are capable of self-evolving and can process beyond structured rules and data. This will broaden the scope of automation and enable highly intelligent front office automation

- AI can support compliance checking and fraud detection in banks, preventing financial and reputational losses

For example, fraud specialists from MasterCard and RBS WorldPay have relied on AI to trace card usage and device or endpoint access. They can then analyze the behaviors of transactions and devices to prevent fraud.¹

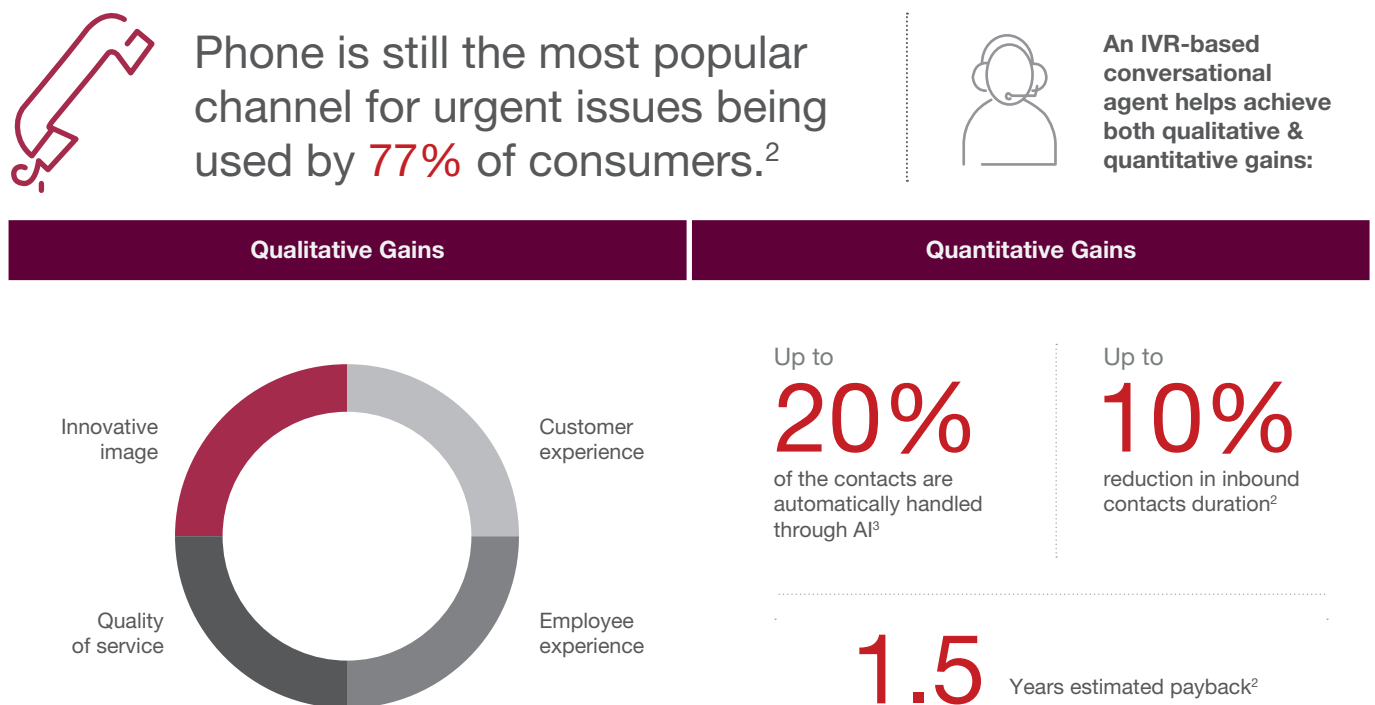
Revolutionize the customer experience

AI technologies enable chatbots and other humanoid robots to become smarter

and provide customers with personalized and dynamic interactions (see use case below).

Machine learning can help to personalize offers for customers at online portals or on the phone, making them more relevant. Amazon is an early adopter of a recommendation software which can guide shoppers towards the next best offer.

Figure 5: Implementation of AI on the phone channel offers significant and proven benefits



¹ <http://www.bankinfosecurity.com/webinars/how-to-fight-fraud-artificial-intelligence-intelligent-analytics-w-409>

² Source: Northbridge, State of Customer Service Experience 2015

³ Source: Capgemini Consulting

The future of AI and innovation¹

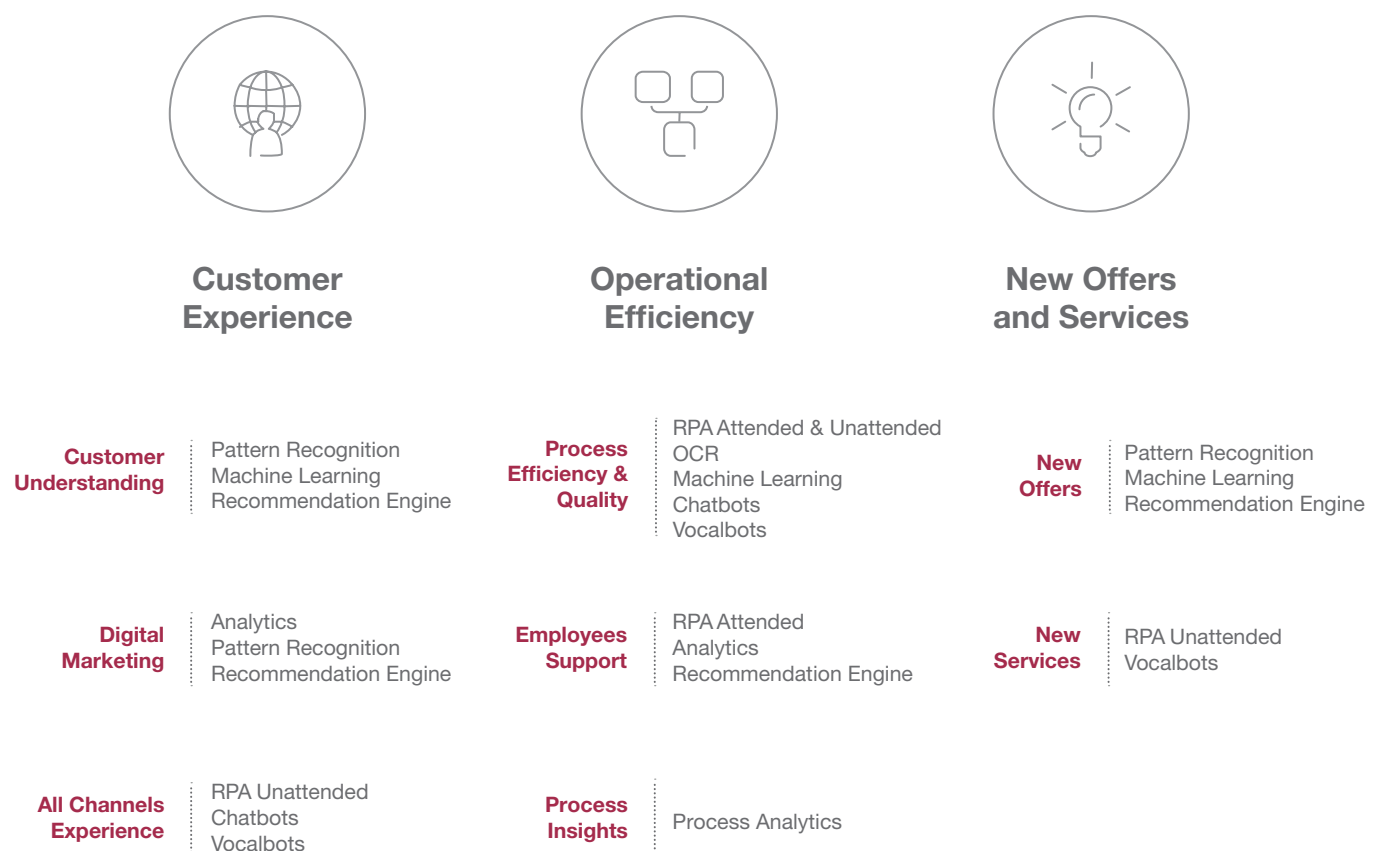
Undoubtedly AI will open up indefinite possibilities. In the future, AI will analyze what's out in the open digital world (internet), combine internal data and open data, and pursue ideas suggested by the AI algorithm.

For instance, a firm's CEO might ask his/her digital assistant (the AI program) how the firm can better innovate on products. The AI program might take the following actions:

- Access all internal data of the firm to identify where the problems lie
- Translate into a search algorithm and scan the web accordingly
- Read matches on the internet and refine results
- Take actions on results and integrate innovation into products



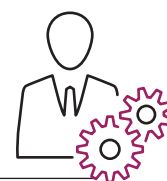
Figure 6: Capgemini can help to determine the right automation solution that supports your business strategies and needs



¹ <http://blogs.lse.ac.uk/businessreview/2017/02/08/crowdscanning-the-future-of-open-innovation-and-artificial-intelligence/>

4

Capgemini Consulting's Automation Capabilities



For the banking industry, the question is no longer whether you should consider adopting automation and AI in your strategy. The question is what your automation strategy should be and how to

implement it. As one of the world's leading consulting services firms, Capgemini has extensive experience advising on automation and advanced technologies to deliver end-to-end services. Capgemini can

help you work out where automation should be applied, and what type of automation it should be to help your organization achieve high performance and generate new sources of revenue.

End-to-End Solution

- Comprising four main disciplines, Innovation, Consulting, Technology, and Outsourcing, Capgemini delivers end-to-end insights-driven business transformation programs.
- We offer innovative Smart Automation solutions, including RPA and Artificial Intelligence, from opportunity assessment to implementation and maintenance.



Strategic Partnerships

- Capgemini's partnerships with technology leaders enable us to identify important trends and technologies.
- We are development partners of IBM Watson and we collaborate with RPA vendor partners including UiPath and BluePrism, chatbot partners such as Smartly.ai, Kore, and Sereneo, and Machine Learning partner WorkFusion.
- We leverage our industry knowledge and leadership in financial services technology, solution development and integration to align our partners' innovations with your specific business needs.



Centers of Excellence

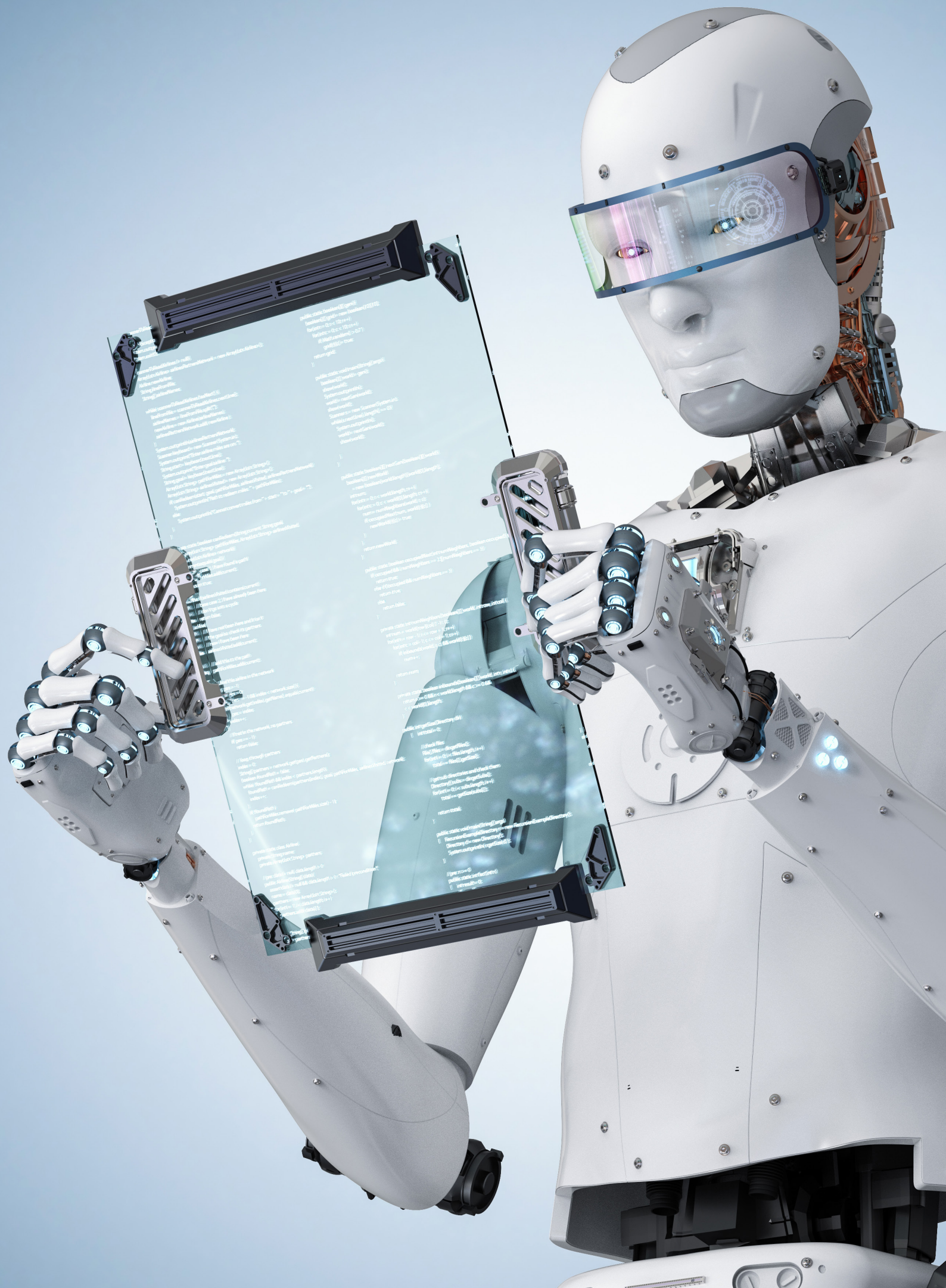
- Leveraging a core hub through our Centers of Excellence, we drive consistent global delivery across business sectors and industries.
- We help companies scale rapidly from single proof of concept to global industrialized automation delivery.



Global Talent Pool

- Using AI specialist skills in all major Insights and Data technologies and platforms, providing informed and technology-agnostic advice and implementation services.
- Drawing on over 50,000 consultants in the Financial Services industry and 2,000+ experts and consultants in Automation.







CC DACH

Sandra Ficht

Principal

Head of Digital Banking

sandra.ficht@capgemini.com

Wolfgang Enders

Principal

Corporate Excellence and Transformation

wolfgang.enders@capgemini.com

Volker Darius

Vice President

Head of Corporate Excellence and
Transformation

volker.darius@capgemini.com

Jörg Becker

Senior Manager

SPOC RPA Banking

joerg.becker@capgemini.com

CC North America

Jean-Baptiste Arnaud

Principal

Financial Services

jean-baptiste.arnaud@capgemini.com

Arnaud Remillieux

Manager

Financial Services

arnaud.remillieux@capgemini.com

Lars Boeing

Principal

Financial Services

lars.boeing@capgemini.com

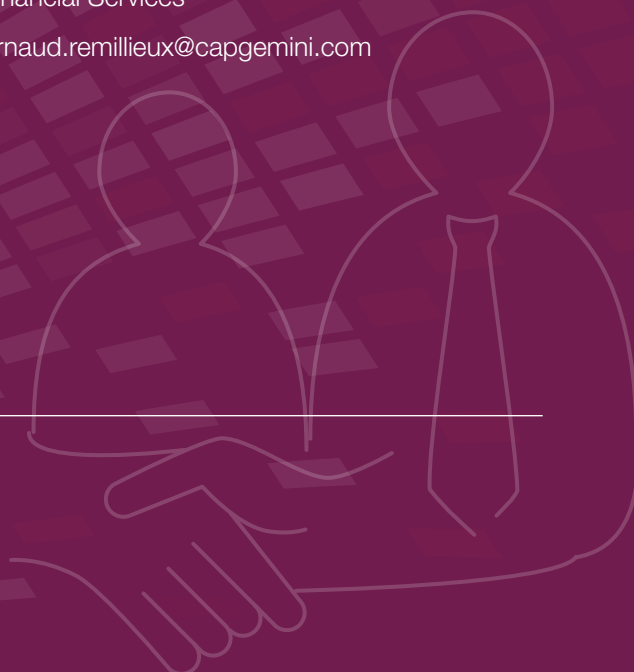
CC Netherlands

Jos Bel

Managing Consultant

Corporate Excellence and Transformation

jos.bel@capgemini.com





About Capgemini Consulting

Capgemini Consulting is the global strategy and transformation consulting organization of the Capgemini Group, specializing in advising and supporting enterprises in significant transformation, from innovative strategy to execution and with an unstinting focus on results. With the new digital economy creating significant disruptions and opportunities, the global team of over 3,000 talented individuals work with leading companies and governments to master Digital Transformation, drawing on their understanding of the digital economy and leadership in business transformation and organizational change.

Learn more about us at

www.de.capgemini-consulting.com

About Capgemini

With more than 190,000 people, Capgemini is present in over 40 countries and celebrates its 50th Anniversary year in 2017. A global leader in consulting, technology and outsourcing services, the Group reported 2016 global revenues of EUR 12.5 billion. Together with its clients, Capgemini creates and delivers business, technology and digital solutions that fit their needs, enabling them to achieve innovation and competitiveness. A deeply multicultural organization, Capgemini has developed its own way of working, the Collaborative Business Experience™, and draws on Rightshore®, its worldwide delivery model.

Learn more about us at

www.de.capgemini.com

Rightshore® is a trademark belonging to Capgemini