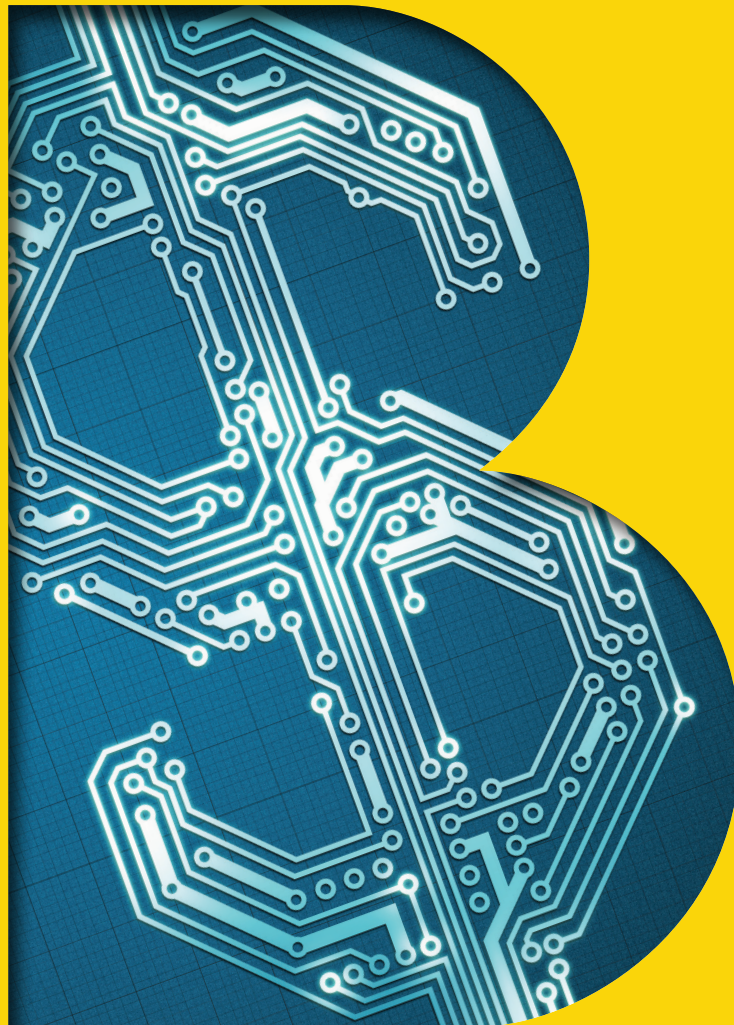


Roland Berger

Focus

June 2019

AI and financial services
How to tackle the big buzz



Management summary

Artificial intelligence has become a very real part of modern life. The hype that once surrounded it has now been replaced by hard use cases, from self-driving cars to robot advisors and the fight against cyber crime.

The financial services industry is no stranger to the technology. Many banks and insurance companies are busy testing the waters with standard AI use cases such as chatbots and next best offers. But, like many other industries, it is yet to fully embrace the opportunities AI presents. In years to come, AI-enhanced services are likely to turn the industry on its head, and time is running out for those who want to stay ahead of the competition.

But with little experience, limited internal expertise and an overwhelming number of increasingly powerful AI solutions, the difficulty for financial services providers is knowing where to start and how to plot a way forward. The purpose of this report is to help providers do just that.

First, we explain that, in our view, AI is more than just a technology to be implemented in random use cases – it is a mindset, and has the potential to completely transform the business model of financial services firms. This means companies need a strong AI strategy to succeed.

Then we present an AI framework setting out four approaches to AI. These range from the simplistic "Don't miss the hype" model, involving experimenting with standard AI solutions, to the advanced "Data is king" model, the transformative option in which most business functions are taken over by AI. In either case it is clear that the move to AI doesn't have to be sudden, disruptive and fully comprehensive from the start; it can be gradual, considered and focused.

Finally and most importantly, we help companies assess their current positioning within the AI framework, and provide guidance on which approach will best help them meet their strategic goals. We lay out key points to consider when choosing an approach, and provide recommendations and a roadmap to achieve it. These include vital factors such as HR challenges, data sourcing and cost implications.

In summary, this Roland Berger Focus report highlights the need to act quickly to benefit from AI-driven change – or risk being left behind.

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1. Not just a technology

Why financial institutions need a clear AI strategy

Everyone is talking about AI. But in most cases they do so only in terms of technology. We believe this is a mistake, and that AI is a strategic asset that permeates far beyond its technological uses – especially when it comes to financial services. This belief is deeply rooted in a vision of the role AI will soon play in our everyday lives. → **A**

However, AI is not the solution to all of the industry's requirements and problems. This means companies need to make a strategic decision about its use. In this chapter we highlight the three key arguments that could influence such a decision, and outline the way forward.

THREE REASONS TO STRATEGIZE

First, AI is a great fit for financial services. Banks and insurance companies have a strong focus on data and no tangible products of the kind found in other industries such as automotive or retail. This suits AI perfectly, as the technology is rooted in digital data, requiring a considerable amount to excel and outperform other analytics techniques.

Next, AI can generate significant savings. The industry is facing a range of cost pressures from low interest rates to growing regulation, complex legacy IT and increasingly burdensome branch networks. But AI could help cut costs and increase efficiencies via intelligent process optimization or the replacement of manual labor.

Third, AI can make money. It promises new revenue sources via personalized offerings, location-based customization or even completely new services.

But with opportunity comes risk: The financial services industry faces specific challenges related to AI. It is more difficult for tightly regulated industries to make use of the technology, for example, and firms face internal restrictions against on-premises solutions that don't ensure data security and protection.

The growing focus on data privacy is another complicating factor, especially as financial information is still a well-guarded secret for many people.

SO WHICH WAY FORWARD?

Several different approaches to AI are currently in place in the financial services market, from experiments with chatbots to using AI in credit scoring or fraud detection and next best offer solutions. → **B** But most of these appear ad hoc, reactive or opportunistic, with little sign of broader strategic goals.

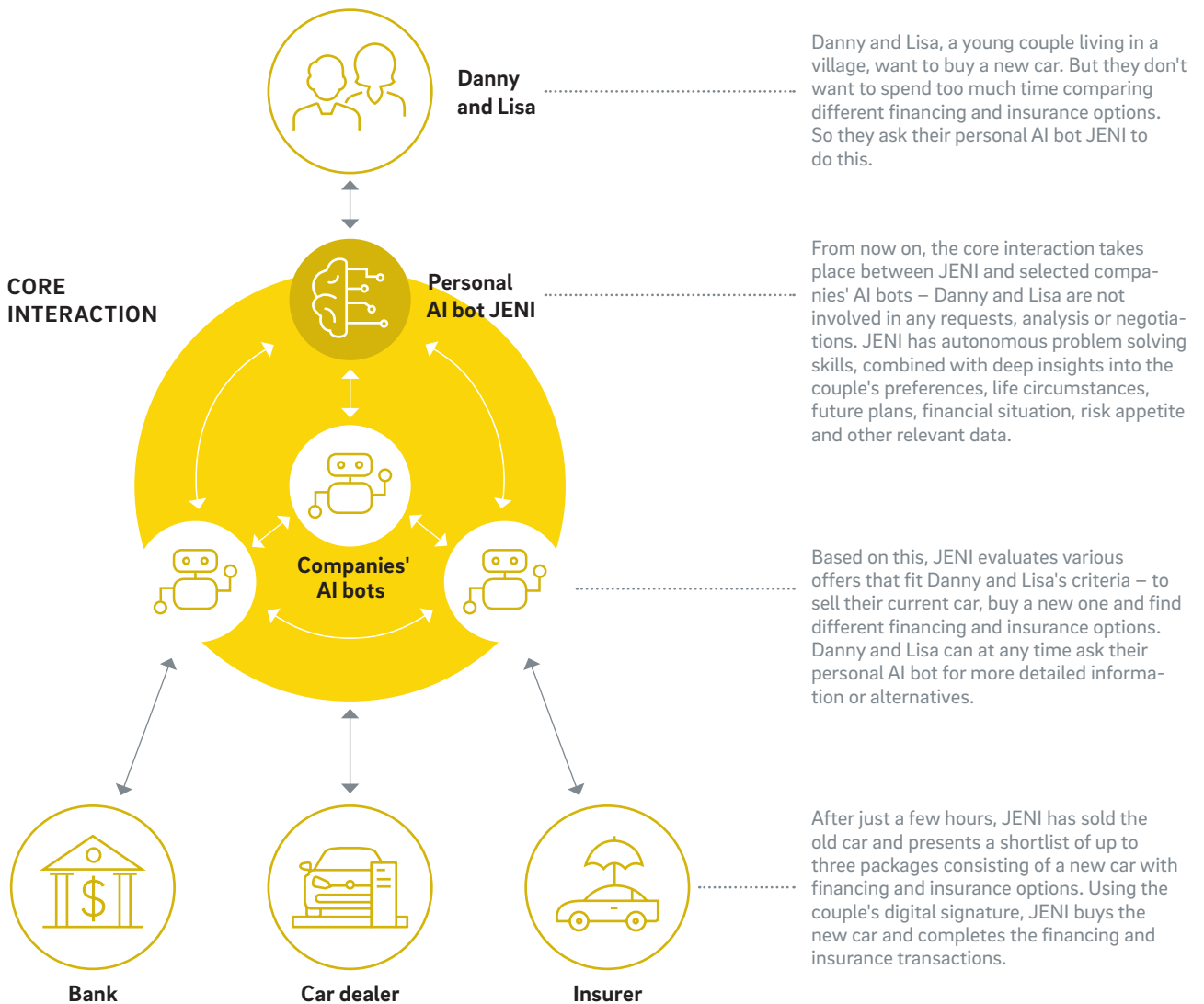
We believe that if financial services firms want to use AI as a vehicle, they must swap experimentalism for strategic self-clarification. So the purpose of this study is to give more clarity on the different approaches to AI by structuring them in a framework.

There is no right or wrong approach; it depends, among other factors, on the individual situation of each financial institution, its client base, internal competencies. The right way and its internal competencies can be evolutionary or revolutionary, small steps or all in.

The risks of implementing AI solutions must also be carefully taken into consideration. For example, operating an AI-run call center that communicates unsupervised with clients could mean significant workforce savings. But it could also mean risking client relationships and even your reputation if the technology falls short. To help you decide which approach is best for you, we suggest clustering the different possible positions in our AI framework.

A: Buying a new car

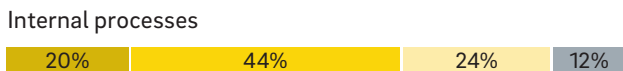
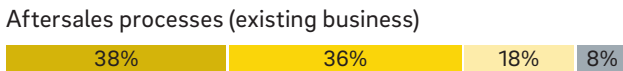
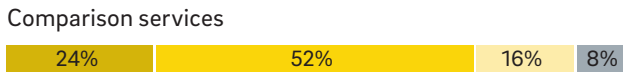
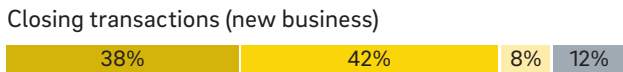
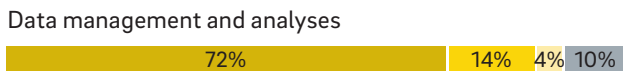
How AI can improve financing and insurance offers



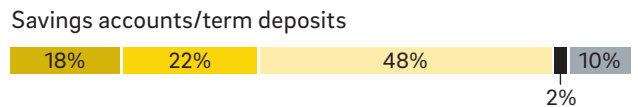
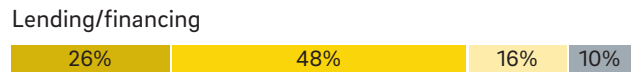
B: The end of the experimental phase

Relevance of current AI applications in financial services

AI RELEVANT FIELDS OF APPLICATION¹



AI RELEVANT PRODUCTS¹



Very relevant Relevant Less relevant Not relevant No answer

¹ Data base: All banks that see AI at least as a relevant trend with future potential (n=50)

Source: 3rd Roland Berger Retail Banking Survey

2. The right approach

Our AI framework for financial services companies

Our framework comprises four different business approaches to AI, each representing a different level of complexity and ambition. These range from "Don't miss the hype", involving off-the-shelf solutions for simple use cases, to "Data is king", in which AI becomes part of the DNA of an organization. In this chapter we describe each approach. → [C](#)

DON'T MISS THE HYPE

Most banks and insurance companies already have experience of "Don't miss the hype", the most simplistic approach to AI. It involves experimenting with the technology, mainly in opportunistic and standardized solutions. External providers with a track record of successfully implementing plug-and-play solutions supply all AI know-how and algorithms. Fraud detection and chatbots are typical use cases.

The strategy is driven by a reactive, risk-averse mindset: the goal is to not fall too far behind on AI while keeping risks minimal. It does not view AI as a key business success factor and implements AI only in limited use cases. Overall, AI has no significant impact on team structure, governance or corporate culture.

AUGMENTED HUMAN INTELLIGENCE

"Augmented human intelligence" is the next level of AI, with the technology used as a tool to enhance efficiency and performance. Players use data and smart algorithms to automate processes and support their employees, for example by suggesting the next best offer or creating real-time ratings.

But AI is not used to radically change the business model or value chain. Decision making is still strictly limited to humans. And as the company needs to be in full control of the AI augmentation of its workforce, there is a strong preference for in-house expertise. The corporate culture embraces cooperation between the two.

Thus, the player builds up a dedicated AI team, supported, where necessary, by external solution providers.

MACHINE KNOWS BEST

Banks and insurance firms in the "Machine knows best" category believe AI can fully replace manual processes and, to a large extent, human decisions. As such, it uses robots trained on sets of internal and external data in a wide range of use cases.

However, AI does not fundamentally change business processes – rather it radically alters the way they are executed. Risk is limited by implementing standard solutions internally or with external solutions providers, and the company avoids becoming strategically dependent on the latter. An automated call center could be a use case.

In addition, accumulated AI know-how is leveraged to differentiate from the competition and strengthen in-house teams.

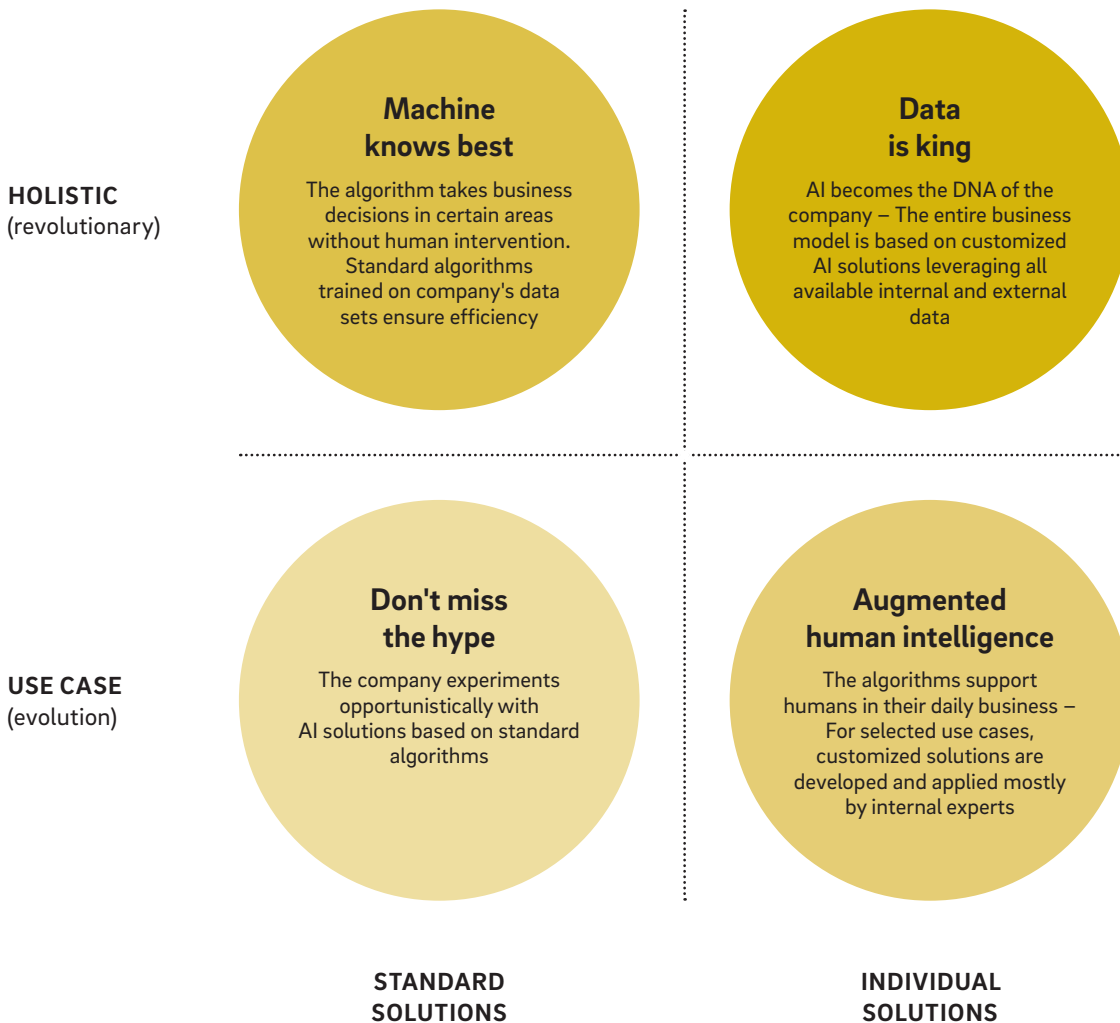
DATA IS KING

The "Data is king" approach is built around the vision that smart use of data can radically change the banking and insurance industries. AI becomes part of the corporate DNA, and the entire strategic business model uses data and AI to create value.

The player offers solutions that are not possible without AI, such as an assistant that takes over all financial decisions. It could even consider non-financial decisions, based on a customer's financial situation and preferences. Aggressive hiring of external talent enhances the company's technological skillset, and it acquires AI solution providers and startups. This again helps the company differentiate from the competition.

C: Approaches you can bank on

Our AI framework consists of four different AI strategies





INTERVIEW

AI in practice: An expert view on the rollout of AI in the financial services industry

Rasmus Rothe is a co-founder of Merantix, a German AI company active in the financial services industry

Roland Berger: How strong do you think the influence of artificial intelligence is in the financial services industry? And how strong will it be in the future?

Rasmus Rothe: As for the future, I think AI will have a very big impact. On the one hand, the financial services industry is very data driven and therefore highly suitable for the application of AI methods. On the other hand, it has many manual processes that can be supported by AI. All processes where data is standardized in some form – independent of the amount of data – can be readily automated.

How will customer expectations of financial services change as a result of AI?

I think you can offer customers a lot in the future by automating more, taking annoying decisions off their hands and processing more data so they get what they want in less time. AI strongly supports this.

Which approach to AI do you think most of Germany's financial institutions are taking?

If we take the framework you developed as a basis, then today I would largely place German institutions in the "Don't miss the hype" position. I think they have understood very well that AI will have a very big influence on their industry, but at the same time they are trying out standard solutions, such as in the area of chatbots and credit scoring. In other words, their thinking on AI is more evolutionary than revolutionary.

Of course, most financial institutions have already heard about the possibilities of AI. But often the IT infrastructure to support them is simply not there. We have worked with financial services providers who had more than 300 different databases, for example. You have to solve data problems and define your positioning at the same time as thinking about how to use AI.

What opportunities does AI present, especially in the "Data is king" approach?

The "Data is king" approach is extremely exciting for financial institutions, because there are really revolutionary possibilities. The idea is to pull together different data sources, such as location and customer purchasing data, in order to best understand what the customer is doing and what they want. Then you can do something that cannot be offered to the customer without AI. For example, if the customer wants to buy a new car, then the bank can intervene and say that not only can you afford car A, but perhaps also car B, because your financial background also makes that possible. I think it's very exciting for banks to think outside the box.

What role do standardized AI solutions play in the financial services industry? And how important will it be to develop individually tailored AI solutions?

There will undoubtedly be more and more standard AI solutions in the industry. The difficult thing is not to identify these, but to integrate them into your own processes, with your own data, and pull it all together so that it really works. You need people who understand the technology very well and also know which external solutions suit your company.

Is there a danger that technology companies like Apple, Google or Amazon will expand their AI offering to include financial services?

It is quite clear that if financial services providers continue as they are now, that is, experimenting with chatbots for the next 10 years in order to have a cool marketing case, then it's very likely that Google or Facebook will become active in this area and very quickly clean up the market.

3. The road ahead

How to choose and apply your AI approach

Our framework gives financial institutions a good idea of the different approaches available to exploit AI, and the interview above provides incentive to act quickly. But which approach is the right one for you, and how should you go about implementing it? In this chapter we seek to answer these questions and help plot a way forward.

There are three key steps involved, from assessing your current AI positioning to developing an implementation roadmap for the future. Below we provide guidance on each.

1. ASSESS YOUR CURRENT POSITIONING

The starting point should be to perform a true and fair assessment of your AI status by determining your current positioning in our framework and your existing AI capabilities. To do this, consider the following key questions:

- > Where do you currently apply AI?
- > What are the potential use cases? Where and how do you want to leverage AI in the value chain?
- > How does AI align with your overall strategy?
- > Who decides on the use cases and the application of AI and what does the decision-making process look like?
- > Which competencies do you have in the technology, and which don't you have?

2. DEFINE A TARGET APPROACH

Armed with answers to these questions and a good idea of your current AI status, the next step is to define a vision of your future AI positioning. This involves determining how AI affects the mid- to long-term goals of your company.

Companies need not automatically opt for the bold-est option. Rather, they should consider important aspects such as maintaining brand credibility, customer openness to AI solutions and honestly assessing internal capabilities and readiness for change. Ultimately,

their chosen approach should, above all, strengthen their USP and ensure profitable client relationships.

There are dangers here. While to succeed a company must clearly define its approach and resist the temptation of aiming too high, there is still a risk of overstretching itself. Specific risks need to be addressed and mitigated as soon as a strategy is chosen, such as setting clear review points that allow for "go" or "no go" decisions.

It is important to note that there is no generic "best fit" solution – different AI strategies will fit different business strategies. However, there is one non-solution: the "Don't miss the hype" approach, with its limited ambition, cannot be a real option for success. Instead, financial institutions should position themselves in one of the other three framework options dependent on their individual circumstances. Below we outline key points for consideration and action plans for each of these approaches.

A) Augmented human intelligence

This joint interaction whereby algorithms support human workers is in many ways a completely new mindset for employees of financial institutions. For example, imagine a traditional banking relationship manager who has his schedule and actions suggested by a machine. To achieve this mindset, you need to establish trust in the recommendations of the algorithm (is it a "can do" or "must do"?) and ensure reliability. So you need strong, well-trained AI and near real-time feedback to constantly improve the algorithms.

Augmented human intelligence can be widely applied within financial institutions, from giving product recommendations at the point of sale to advising on claim decisions. But the approach requires planning – you need to identify potential areas for application early and build up data sets quickly to develop trusted and reliable algorithms.

The integration of AI into IT systems is also key. Algorithms that support human workers across different business areas need to be integrated into either a diverse (consisting of several different applications, e.g. for sales, underwriting, claims management) or very rigid IT and system architecture (typically the core banking or insurance system). This makes early consideration of AI infrastructure in current systems and workflows vital.

This approach also requires fail safes. Even if AI does not execute final decisions, the complex integration and individual application of AI in this positioning mean financial institutions should have AI experts in house. They can intervene and readjust algorithms at short notice, avoiding, for example, consistently inappropriate suggestions for sales people that could impact the "trust" relationship between them and the AI assistant.

So what action should financial institutions considering this approach take?

- I. Identify areas in which humans and AI can best work together to reduce time-consuming manual activities or offer new client services.
- II. Recruit internal AI experts or identify external service providers early in the process to ensure the required mindset and expertise. Establish an in-house center of AI excellence.
- III. Evaluate available data sets in the chosen areas of application and define a data collection strategy for areas that have potential but insufficient data.
- IV. Develop the first algorithms in priority areas/use cases and test them with human workers. Start with "can do" rather than "must do" cases.
- V. Address the change in mindset that AI demands of an organization; demonstrate the benefits of algorithms and humans working together.
- VI. Constantly identify and evaluate new areas of application for AI. Implement these through the process of identifica-

tion, classification, assessment of potential and data history, build and test, feedback and improvement.

B) Machine knows best

Rather than merely augmenting human intelligence, this approach is about completely replacing humans in entire processes or functions. A wholly AI-run call center is a good example. But while it sounds appealing, this position requires radical changes to financial institutions' current business processes.

The strategic implications for companies taking the "Machine knows best" approach are manifold. This holistic use of AI means big changes in company staffing, for example, with the technology able to replace whole teams. Fewer and fewer employees will be required over time, and those that remain will have a difficult transformation path ahead of them as they adapt to new AI-driven tasks. Ultimately they will also be responsible for AI-based decisions, meaning a new set of KPIs may be necessary to enable them to critically assess these.

As this approach requires a strong reliance on external providers, another key consideration is finding the right partners – and price. You must decide whether to employ a patchwork AI solution from a variety of providers, or establish deeper links with only a few. A critical success factor here will be the compatibility of the AI solutions, and how they are able to work with a common data pool. Interfaces and systems that ensure a seamless, uncomplicated interaction and exchange of data will be vital.

How the data is collected is also important. In order to outsource entire processes and functions to AI solutions, you need strong training data. This means storing all possible training information and data so that AI can access it. Data collection in general will also need to expand so that it covers not just customer information but also information about the company itself.

The "Machine knows best" approach has external implications, too. The more financial institutions use AI, the more uniform they will become. So firms taking this approach will need to differentiate from competitors running the same standard AI solutions. In short, they will need a USP to compete.

After considering these points, we suggest the following action plan:

- I. Have a clear grasp of your processes and functions and know where you can create the greatest value and benefits.
- II. If you cannot make clear cuts, redefine processes and organizational design so that outsourcing to AI is possible in the near future.
- III. Develop a clear transformation path for your workforce. Create dedicated roles to "control and steer" AI solutions (especially in the transition period) while also developing an incentive system that keeps your workforce motivated.
- IV. Start data collection as soon as possible. Be aware that this may become a substantial time and cost driver, especially at the beginning.
- V. Ramp up your procurement department and reach out to potential suppliers of standard AI solutions. Choose wisely.
- VI. Think how you will differentiate – having more and better data is good, but to truly outpace rivals you will need to find clever ways to keep clients loyal to your company.

C) Data is king

This position is the most radical in the framework – "Data is king" companies will have few things in common with financial institutions as we know them today. Instead of experts in asset management, real estate financing or personal liability insurance, they will count highly sophisticated AI solutions and specialized AI technicians as their most valuable resources.

Naturally, opting for this position requires a strong will and ability to change. Unlike the other approaches, the attitude should be "where does AI not fit?". In the long term, humans will fulfill only control and AI expert functions, while AI will run everyday business – up to strategic decisions at management level. Decision makers could become superfluous – if regulators allow it. → **D**

But first consider the shorter-term effects. Corporate culture will have to shift quickly: as AI begins to replace employees, there will be an increasing demand for IT experts, consigning the traditional model of financial institutions as stable employers to history. Longstanding values such as hierarchies, risk aversion or loyalty may also be swept away by an entrepreneurial, tech-savvy mindset. Ensuring continued cooperation between the old and new worlds will be critical.

The move to AI will fundamentally change the company's DNA, meaning employees, management, shareholders and customers must be on board. As such, clearly map out the transformation for stakeholders and explain that it will be an evolutionary rather than sudden process.

Strategic investments and M&A should receive particular attention. Companies can't build up tailored AI solutions using only external partners, necessitating the scaling up of in-house capabilities through acquisitions. As with Google's takeover of DeepMind in 2014, firms must be willing to invest boldly in specialized AI boutiques.

As the name of this approach suggests, huge data volumes will become your company's single most valuable resource. This may mean buying data from external parties or collecting it yourself. Sales channels and interactions with customers offer many potential sources of data – and there are many more if you think outside the box. Accessing customers' behavioral data to understand how they make decisions is one example. But before embarking on such initiatives, draw up a clear data collection strategy to ensure the right mix of data and a universally accessible central data pool.

D: Taming the machines (or not)

Competition through regulation

"Skeptics" of an AI-driven financial services offering will point out the limitations of current regulation. They are right: regulation will have a significant impact on the way in which and the pace with which AI solutions are implemented. However, AI and regulation is clearly on the agenda of the financial regulators, though there is still no dedicated and formal regulation.

Developing a sound and suitable regulatory framework quickly can and will be vital for the competitiveness of the addressed institutions. For example, more "relaxed" approaches by the Asian regulators could strongly benefit the Asian financial services providers in building seamless and AI-driven offerings. Similar developments as currently seen in social scoring or payments could be the logical consequence.

FCA

"**The next big step is to apply intelligent technologies – like AI**, robotics, natural language processing and machine learning – so that firms can spot suspicious transactions in real time from unstructured account and transaction data."

"How should machine learning sit alongside human decision making? We see it as **complementing**, not replacing, human judgment."

BaFin

"From BaFin's point of view, it is of fundamental importance that the **machines can't be allowed to assume responsibility**, even in automated processes. Responsibility definitely remains in the hands of management."

WEF

"AI-based transaction monitoring models have a **demonstrated advantage** over the status quo."

ACAMS

"By leveraging high-quality AML data and restructuring IT systems to accommodate the new wave of artificial intelligence-powered regtech applications, **financial institutions can ensure more accurate and effective customer identification** at the front end."

Finally, be patient. The transformation into a fully AI-driven "Data is king" financial services provider will take time. Many requirements may also appear unrealistic, especially when faced with current regulatory hurdles. But it's worth staying optimistic: just 20 years ago few would have predicted that the most treasured asset of today's most valuable companies would be data.

The transformation need not take place at once, although you should initiate the first steps today to avoid becoming the next Blockbuster Inc.

- I. Identify AI target areas and define the roles and control points requiring human intervention. Agree on a concrete target vision and ensure relevant decision makers are signed up to it.
- II. Draw up a transition timetable to meet the target vision. Set ambitious goals for AI solutions to take over functions and processes. Create a convincing storyline for this plan, and communicate it clearly to shareholders.
- III. Develop a sound communications strategy to engage employees and the workers' council. List jobs seen as viable in the future, and agree plans for those jobs that will likely become redundant or refocused toward AI tools.
- IV. Set up a data collection task force as early as possible. Identify potential data sources, both internal and external. Think creatively beyond current data collection norms; for example, some lending companies already analyze customer mouse speed and movements during credit applications as an indicator of credit default rates.
- V. Become active in the M&A market. Acquiring entire teams or companies will become necessary to gain the skills needed to become a "Data is king" company. Have a clear strategy on how to integrate acquisitions.
- VI. Develop a lobbying team. Regulators will not readily allow for "black box" AI decision making, and may want clear explanations of decisions. Start the necessary dialogue early and be persistent.

3. DEVELOP A CLEAR ROADMAP

You've assessed your own AI capabilities and decided on an approach from our framework. Now what? Independent of the target model and current starting point, a clear roadmap is required to ensure successful execution of the chosen strategy.

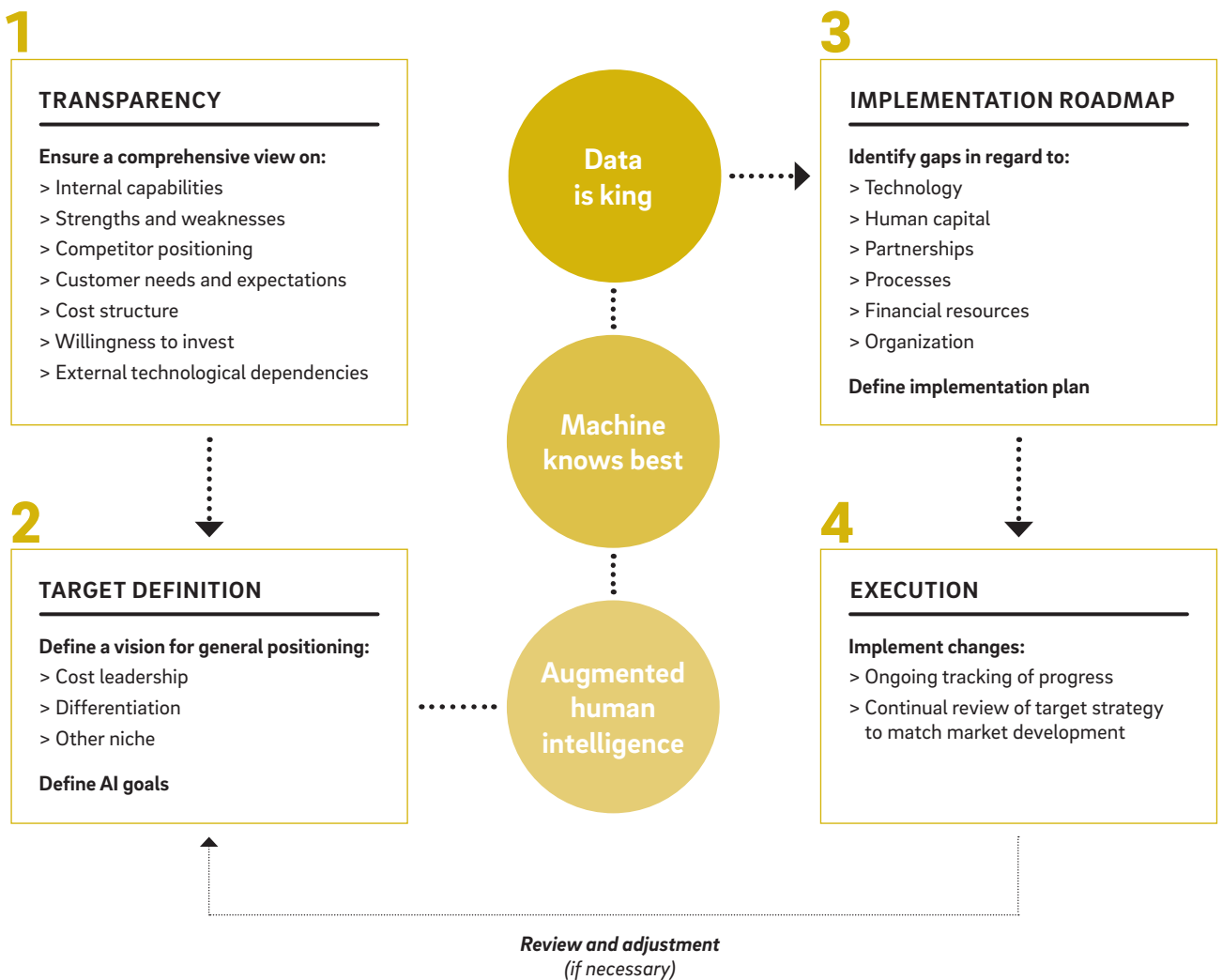
Derive your implementation roadmap from the gap between the AI status quo at your company and your target approach. Critically assess dimensions such as technology, human capital, financial resources and organizational flexibility to develop a clear plan. Be aware that there are complex dependencies at work – be it between the dimensions or additional factors such as economic developments or technological breakthroughs. To navigate these, establish periodic review points to ensure enough flexibility to react to unforeseen developments.

Most importantly, don't hesitate to begin implementation. Insurers and banks deal in intangible and data-driven products, making their industry one of the most susceptible to attack by tech-savvy AI players.

Ultimately, it's clear that up until now, a "Don't miss the hype" strategy might have been sufficient to keep clients, employees and shareholders happy. But with big data, cloud computing and machine learning advancing at an unprecedented pace, financial services may be overhauled much more quickly than most players would like. To remain competitive, they must act just as quickly and begin work on a more advanced approach – a decisive strategy to tackle the big buzz. → **E**

E: The road to AI success:

Our roadmap outlines the steps needed to achieve AI implementation



WE WELCOME YOUR QUESTIONS, COMMENTS AND SUGGESTIONS

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