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REVOLUTIONIZING CUSTOMER EXPERIENCE

The Role of AI in Banking

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Executive Summary

The rapid development of **Artificial Intelligence (AI)** is fundamentally transforming the banking sector. Technologies such as **Generative AI**, **Machine Learning**, and **Natural Language Processing** enable banks to streamline processes, manage risks more effectively, and create personalized customer experiences. **This whitepaper examines the current state of AI in banking, as well as the challenges and future prospects associated with its adoption.**

Customer Experience (CX) refers to the totality of experiences and interactions customers have with a company and is a crucial success factor in today's digital world. CX trendsetters – companies that have adopted AI early and strategically – are redefining financial industry standards. By leveraging key technologies, these trendsetters can more precisely analyze customer data, create personalized interactions, and address customer needs in real time. As a result, they not only achieve operational efficiency but also strengthen customer loyalty.

To unlock these benefits, banks must address **core challenges** of AI implementation: **regulatory requirements** such as the EU AI Act and the Cyber Resilience Act, **outdated IT infrastructures**, and **cultural barriers** all pose significant hurdles. The **solution requires targeted measures**: clear **governance frameworks** to provide essential guidelines, **investments** in modern IT solutions to establish a robust technological foundation, and the **automation** of repetitive processes to free up resources and focus on valuable customer interactions.

This whitepaper offers practical recommendations and shows how banks can deploy AI strategically to remain competitive and sustainably inspire and retain their customers. With a clear roadmap, banks are not only able to master current challenges but also to actively shape the future of banking.

EFS Consulting accompanies banks on this journey – with strategic expertise, practical solutions, and a holistic approach that combines technological innovation with human empathy.



AI is a broad term that encompasses various technologies; often, discussion focuses solely on Generative AI or **Large Language Models (LLMs)** such as ChatGPT. However, other AI technologies – including machine learning, deep learning, and computer vision (e. g., image/voice recognition) – offer transformative potential across industries.

AI DEFINITION

AI system means a machine-based system that can operate at different levels of autonomy, possibly showing adaptability after deployment, and – for explicit or implicit goals – derives from the inputs received how outputs such as predictions, content, recommendations, or decisions can be generated, which influence physical or virtual environments.

Artificial Intelligence Act: Article 3. (2024)

Background & Motivation

With the introduction of Large Language Models (LLMs) (e. g., ChatGPT), a new era has dawned, one that raises crucial questions for the banking sector. How does Artificial Intelligence (AI) revolutionize the banking sector? Can banks meet rising customer expectations through technological innovations while simultaneously optimizing their internal processes? The rapid development of AI has already brought about profound changes in the financial world:

75 % | surveyed experts confirm that AI plays a **central role** in their **banks' strategies**.¹

73 % | of **customers** expect improved personalization through **technological advances**, & 74 % would share more data for such personalized services.²

90 % | of the **surveyed experts** believe that AI leads to more **individualized customer experiences**.³

¹ Rührlechner, N. (2024)

² Statista (2024)

³ Rührlechner, N. (2024)

1

Introduction

These figures highlight the immense importance of AI for the future of banking and underline the need for banks to act now to remain competitive and meet the changing needs of their customers.

This whitepaper shows how AI can change banking operations. You will discover how to not only improve the Customer Experience through the use of AI but also make internal processes more efficient. The whitepaper delivers actionable insights on:

Understand the current situation and the importance of Customer Experience in the banking sector

Learn why excellent customer experiences are the key to success in a highly competitive environment, and how AI can further optimize these.

Identify the challenges and opportunities of AI integration

Get to know the key challenges, such as rising customer expectations, regulatory requirements, and technological hurdles, while simultaneously discovering the diverse possibilities AI offers.

Develop effective AI strategies

Learn how to design tailored AI solutions that are precisely aligned with the needs of your company and your customers.

With practical case studies, current research insights, and actionable recommendations, this whitepaper offers strategic frameworks to harness the potential of AI in a targeted way and to sustainably secure the long-term competitiveness of banking institutions.

Methodology & Databasis

The findings are based on interviews with international AI experts and individuals from middle to upper management of the international banking sector, as well as a survey of 163 retail bank customers. This data basis is supplemented by a meta-analysis of previously published studies.

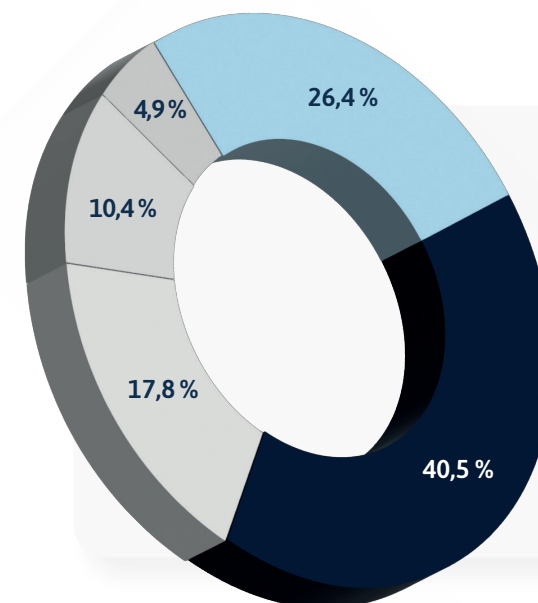
PARTICIPANTS OF THE EXPERT INTERVIEWS

4 AI experts from South Africa, the USA, Singapore, Finland

14 members of middle-to-upper management from banks in the DACH region (Germany, Austria, Switzerland)

up to **25** years of professional experience in the financial industry with a focus on AI

Figure 1: Overview of Expert Interviews (N= 18)⁴



PARTICIPANTS OF THE BANK CUSTOMER SURVEY

26,4 % | 18 - 25 years

40,5 % | 26 - 35 years

17,8 % | 36 - 45 years

10,4 % | 46 - 55 years

4,9 % | 55 + years

47 %
WOMEN / MEN
53 %

Figure 2: Demographics of the participants of the bank customer survey⁵

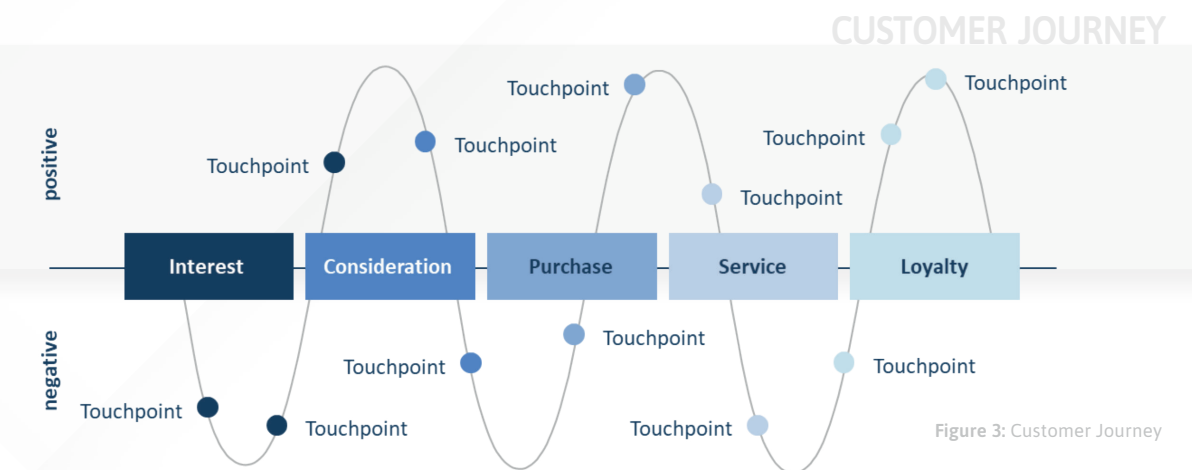
⁴ Rührlechner, N. (2024)

⁵ ibid

2 Current Situation in the Banking Sector

The Importance of Customer Experience (CX) in Banking

Customer Experience (CX) describes the perception customers have of a brand or a company. It encompasses all the experiences and interactions customers have with the brand across various touchpoints (the Customer Journey).



The banking industry has a long history of innovation, continually aimed at meeting customer needs and adapting to technological progress. Examples such as the introduction of ATMs and card-based payments in the 1960s and 1970s mark significant milestones in improving customer experience and accessibility.^{6,7}

With the introduction of the first versions of online banking in the late 1990s and mobile banking in the early 2000s, interactions between banks and their customers changed fundamentally. Around-the-clock access to banking services marked a milestone that redefined customers' expectations and accelerated the need for digital transformation in the banking sector.^{8,9}

Today's demand for seamless, fast, and efficient services continues to drive digitalization forward. Banks are increasingly relying on modern technologies to optimize their internal processes while simultaneously offering a personalized customer experience. Online and mobile banking have long been the standard. Integrating advanced digital solutions has enabled banks to remain competitive and meet rising customer demands.

⁶ Rührlechner, N. (2024)

⁷ Scalefocus (2024)

⁸ Rührlechner, N. (2024)

⁹ Visium (2024)

The Expectations of Today's Bank Customers & the Role of AI

AI opens up new possibilities for banks to improve their services. But what do customers really want? What concerns and wishes do they have regarding AI?

THE FOUR MAIN EXPECTATIONS OF CUSTOMERS

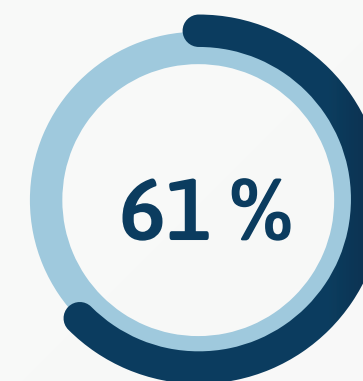


Figure 4: The four main expectations of customers

Bank customers value customized recommendations, especially in the area of financial advice. AI offers the possibility of **hyper-personalization** that goes far beyond classic recommendations: AI can analyze data and provide individually tailored tips, recommendations, and alerts precisely aligned with customers' needs and life situations.

CX trends for 2025 show that **61 %** of consumers expect that AI will further improve personalized services.¹⁰ Customers also hope for seamless integration of this advice into their everyday lives – accessible anytime and anywhere. **70 %** of customers also demand that their contact persons in customer service be aware of the complete context of their previous interactions.¹¹

In reality, these high expectations are often not met: **31 %** of customers doubt the accuracy of AI-driven recommendations. **43 %** are uncertain whether personalized offers from AI are truly better than standard solutions. Particularly customers with higher education and more complex financial needs are skeptical, preferring a combination of individual tailoring and human empathy that purely AI-based interactions often cannot provide.¹²



61 %
OF CONSUMERS
EXPECT THAT AI WILL
FURTHER IMPROVE
PERSONALIZED SERVICES

In addition to personalization, **72 %** of customers expect immediate service from AI in the form of quick, precise answers – especially for routine inquiries. These expectations, shaped by services such as Uber and Amazon are now being demanded from banks as well.¹³ Especially in mobile banking, “Fast Banking” is seen as a competitive advantage.

Data protection remains a central concern for bank customers: **46 %** of respondents cited personal data security as their top worry.¹⁴ Critically viewed is, in particular, the extent to which sensitive financial data might be collected and used. **64 %** of consumers indicate they will only trust AI-based services when transparency and data protection standards are guaranteed.¹⁵

Customers demand clarity in AI-driven decision-making processes – whether for loan approvals or investment recommendations. A lack of transparency can undermine trust in the bank and reduce the positive effect of AI use.

These requirements vary by **demographic** group, meaning the different expectations of various customer groups become an increased challenge for banks. Highly educated customers and those in rural areas prioritize human interaction and security measures more than less educated demographics. In urban areas, the efficiency and accuracy of AI come to the forefront.¹⁶

Despite the many advantages offered by AI, **human interaction remains central**. Particularly in sensitive or emotional matters, customers expect a balance between digital efficiency and personalized service. This is the case across all demographic groups, but especially important in rural areas and among older customers.

So, AI offers enormous potential to meet **customers' expectations**, but banks must strategically balance three critical CX components: advanced technologies, transparency, and human empathy.

¹⁰ Zendesk (2023)

¹¹ Zendesk (2024)

¹² ibid

¹³ Zendesk (2025)

¹⁴ Rührlechner, N. (2024)

¹⁵ Zendesk (2024)

¹⁶ Rührlechner, N. (2024)

3

Challenges & Possible Barriers

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To **benefit** from the **advantages of technology** and meet the **rising demands of the market**, banks must drive **technological innovation** while overcoming internal and external barriers.

Banks are increasingly using AI to improve their services and meet growing customer expectations. More and more decision-makers are using AI to optimize various processes, with **17 %** focusing specifically on investment personalization. However, only **35 %** of banking executives report satisfaction with their digital transformation progress, underscoring a discrepancy between digital ambitions and actual implementation.¹⁶ This disconnect is visible to customers as well – **70 %** perceive significant differentiation between AI-advanced institutions and leggers, intensifying competitive pressure on banks to remain technologically competitive.¹⁷

In practice, progress often lags behind expectations because introducing innovative AI solutions requires complex adaptations and a deep understanding of customer needs. Based on the interviews conducted, there are four primary challenges to be overcome to close the gap between expectations and progress and to implement AI initiatives successfully:

THE FOUR MAIN CHALLENGES



REGULATORY REQUIREMENTS & COMPLIANCE

- GDPR: Data protection, transparency, "black-box" models
- EU AI Act: Risk-based regulation
- Cyber Resilience Act: Security requirements, "secure by design"



DATA QUALITY & ETHICAL CONCERNS

- Bias & fairness: Avoiding discrimination
- Transparency & explainability
- Data protection: Customer concerns, ethical standards
- Challenges in AI governance
- Data quality: Impact on AI results



TECHNOLOGICAL CHALLENGES

- Integration with legacy systems
- Shortage of skilled professionals



CULTURAL & ORGANIZATIONAL CHANGES

- Employee acceptance: Fears, resistance
- Skill gaps: Building AI expertise

Figure 5: The four main challenges¹⁸

¹⁶ Latinia (2024)

¹⁷ Zendesk (2025)

¹⁸ Rührlechner, N. (2024)

Regulatory Requirements & Compliance

As AI systems process increasing volumes of sensitive customer data, compliance with existing regulations – such as the General Data Protection Regulation (GDPR), the EU AI Act, and the Cyber Resilience Act – is essential.

GDPR & AI: The Challenge of Transparency

The GDPR requires strict measures for collecting, processing, and storing data, such as explicit consent and the right to erasure.¹⁹ AI systems that rely on large data-sets find it challenging to ensure transparency and traceability, since many machine learning models are regarded as “black boxes.”

The EU AI Act: Risk-Based Regulation^{20,21}

To address these issues, the European Union drafted the EU AI Act, a comprehensive legal framework for regulating the use of AI systems within the EU. It follows a risk-based approach that classifies AI systems into four risk levels: prohibited systems, high-risk systems, systems with low risk, and systems with minimal risk. This makes it possible to tailor regulation to the potential harm that each AI application could cause.

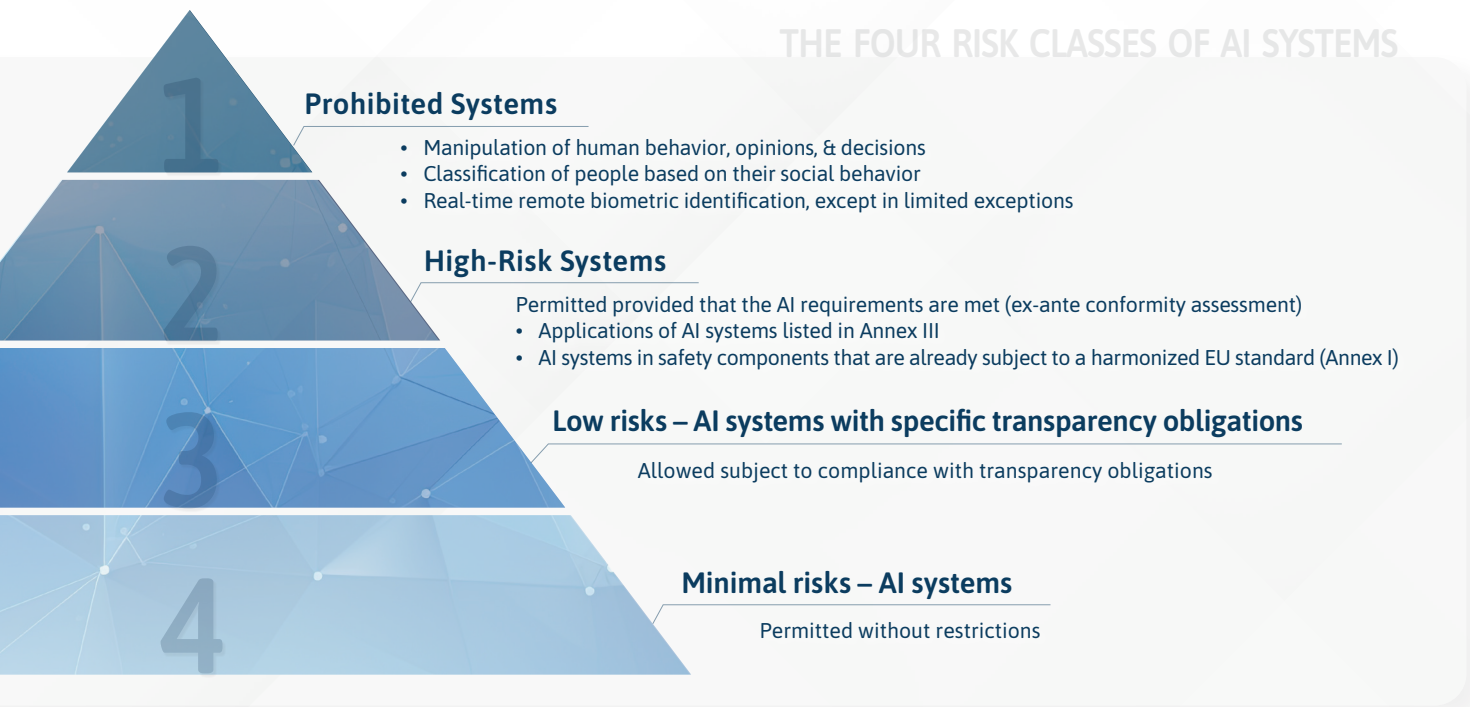


Figure 6: The four risk classes of AI systems

High-Risk AI-Systems

For financial service providers, high-risk AI systems are particularly critical, as they are often used in sensitive areas like credit scoring or anti-money laundering. The EU AI Act requires comprehensive documentation and risk mitigation strategies for these applications, along with ensuring human oversight. Meeting these requirements is vital not only for legal compliance but also for building customer trust in AI-powered banking services.

Many banks, however, are still in the early stages of implementing AI systems and remain uncertain about the specific requirements the EU AI Act imposes on them. Repeatedly in the interviews, the ongoing challenges in AI governance and data management were emphasized.²²

One interviewer stated that building robust AI governance systems is a multi-year transformation journey:

“We are not only not done with it – you can’t be done with it.”²³

COMPLIANCE DEADLINES & PENALTIES				
APRIL 2021	JUNE 2023	MARCH 2024	FEBRUARY 2025	AUGUST 2027
Presentation of the Act	Draft & Negotiations	Deadline for Finalization	First & Final Compliance Deadline	

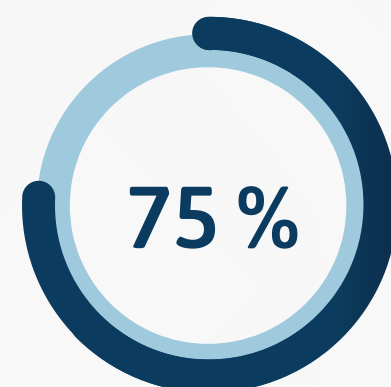
Figure 7: Compliance Deadlines & Penalties²⁴

¹⁹ DSGVO Gesetz (2018)
²⁰ Artificial Intelligence Act (2024)
²¹ Walter, W. (2024).
²² DSGVO Gesetz (2018)
²³ Rührlechner, N. (2024)
²⁴ Artificial Intelligence Act (2024)

Compliance with the EU AI Act presents the banking sector with significant challenges, as concrete deadlines are already established. The legislation officially entered into force on August 1st, 2024. Certain parts of the legislation, including prohibitions on specific AI systems and requirements for AI competency, became applicable in February 2025. By August 2025, member states must designate national authorities responsible for enforcing AI regulations. Additional rules, including provisions for designated bodies, General Purpose AI (GPAI) models, governance, confidentiality, and sanctions, will also take effect at that time.

Companies have until August 2027 to achieve full compliance with the EU AI Act's requirements, including obligations for providers of GPAI models commercialised prior to 2nd August 2025. Violations can lead to significant penalties – up to 7 % of the global annual revenue for breaches

Regulatory guidelines, especially GDPR and the AI Act, set high standards for banks. Compliance requires technological modifications and proactive measures to balance **compliance, innovation, and transparency**. Banks that succeed in doing so not only minimize legal risks but also strengthen confidence in securely deployed AI solutions.



75 %
OF THE INTERVIEWERS
CITED REGULATORY
REQUIREMENTS AS ONE OF
THE BIGGEST HURDLES²⁵

involving prohibited AI applications, and up to 3 % for noncompliance with other obligations.^{26,27}

In addition to the EU AI Act, the **Cyber Resilience Act**, which came into force at the end of 2024, influences AI integration in the banking sector. Starting December 2027, networked products must meet specific cybersecurity requirements. This highlights the need to develop AI systems “**secure by design**” from the outset to minimize vulnerabilities and ensure protection.

Technological Challenges

From the qualitative interviews and literature research, it is evident that many banks operate on outdated IT infrastructures that are not designed for AI technology integration. These legacy systems hinder full AI potential realization due to frequent incompatibility with modern solutions.

Integration with Legacy Systems

Worldwide, 59 % of traditional CX players – those relying on conventional CX tools rather than innovative market trends – plan to integrate AI more strongly by 2025. This indicates that even traditional CX players – similar to the forward-thinking CX trendsetters – recognize AI's strategic value and are willing to harness its potential.²⁸ However, approximately 50 % of respondents report challenges when integrating AI with existing systems.²⁹

“Many banks still run outdated infrastructure that was never designed for AI.”³⁰

Modernizing these systems requires substantial investments in both time and capital, posing financial and operational burdens for many banks. System adaptation presents additional complexities that may cause business process interruptions, further delaying AI implementation.

Additionally, the technical complexity of AI, combined with talent shortages in areas like data science and machine learning, complicates the implementation of modern AI solutions. Smaller banks or those with limited budgets especially face the challenge of providing the necessary financial and operational resources.

These technological challenges demonstrate that introducing AI is not just a matter of acquiring software but requires a comprehensive technological transformation.

²⁵ Rührlechner, N. (2024)
²⁶ European Parliament (2023)
²⁷ Artificial Intelligence Act (2024)

²⁸ Zendesk (2025)
²⁹ Rührlechner, N. (2024)
³⁰ ibid

Data Quality & Ethical Concerns

Implementing AI systems in banks raises significant ethical considerations that directly impact customer trust. Topics such as fairness, transparency, and avoiding bias in AI models are central here.

DATA QUALITY & ETHICAL CONCERNS



Figure 8: Overview of Data Quality and Ethical Concerns

Algorithmic Bias & Fairness

AI systems can unintentionally contain biases originating from the underlying data. In sensitive financial domains such as lending, credit scoring, and financial service accessibility, there is a risk that certain groups may be disadvantaged. This can intensify existing socioeconomic disparities or introduce new forms of discrimination.



© Adobestock: Thanapong

We need to ensure that our AI models are fair & transparent to avoid reinforcing bias.³¹

Transparency, Explainability, & Reliability

Trust is fundamental for successful AI adoption. Insufficient transparency regarding AI system operations and which data they use amplifies customer skepticism. Studies show that customers are more willing to adopt AI if they understand the technology's benefits and functionalities.³²

The lack of transparency and explainability in AI systems, especially those using deep learning technologies, is a significant challenge. Many AI models act as a "black box," making it difficult to understand how decisions are arrived at. In the financial sector, where regulatory compliance and consumer trust are paramount, this intransparency can lead to distrust. Customers demand clear explanations for adverse decisions, especially those impacting their financial wellbeing.³³

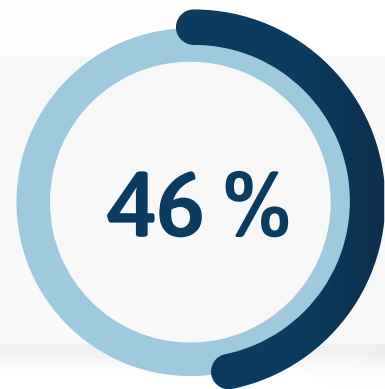
AI reliability equally influences trust. Faulty or inaccurate algorithmic outputs can permanently damage customers' trust in the technology. The customer survey shows that, especially in the area of service personalization, the results often do not meet customers' expectations. This leads to rejection of AI solutions. Some respondents expressed concerns about the accuracy of AI and feared systemic biases, particularly in lending.³⁴

³¹ Rührlechner, N. (2024)

³² Ameen, N. (2021).

³³ Rührlechner, N. (2024)

³⁴ ibid



NAMED DATA PROTECTION
AS THEIR PRIMARY CONCERN
REGARDING AI IN BANKING³⁵

Transparency, Explainability, & Reliability³⁶

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Customer Data Privacy Concerns³⁷

Protecting personal data is a central issue for AI adoption. Many customers express concerns that their sensitive information might not be sufficiently protected. In the survey, **46 %** of respondents named data protection as their primary concern regarding AI in banking. Additionally, **79 %** indicated that data security is especially important, particularly among rural and less-educated demographics.

Customers question whether AI systems provide equivalent protection levels to conventional methods, and that data usage might occur to their disadvantage. Some are concerned that AI systems collect and analyze their data without their knowledge or consent, leading to general mistrust of automated systems.

Challenges in AI Governance

AI governance structures are still under development, and challenges remain in the area of data management as well. The lack of transparency and the complexity of AI systems make it difficult to ensure accountability. Four interviewees pointed out that governance of AI systems is an ongoing process requiring clear guidelines and continuous oversight.

Ensuring high data quality is crucial for AI success. Inaccurate data can lead to errors & undermine customer trust.³⁸

In many cases, it is not just about the governance of company-approved AI tools but also about „Shadow AI“ – unauthorized AI applications deployed without organizational approval. The rising use of shadow AI poses major security risks for sensitive customer data. Within the financial services sector, the use of such tools has increased by **250 %**, underscoring the critical need for robust governance structures.³⁹

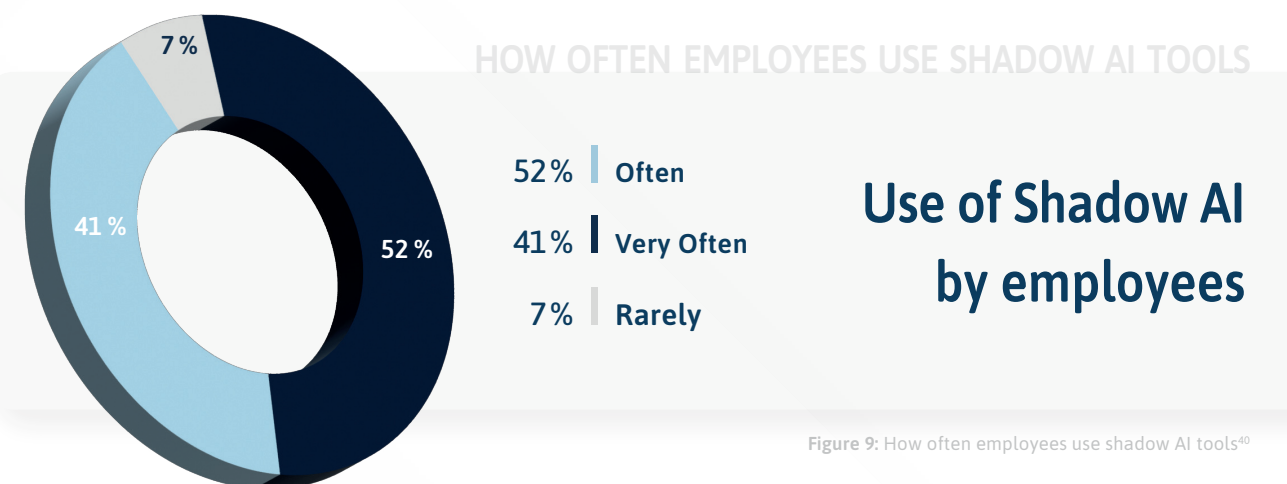


Figure 9: How often employees use shadow AI tools⁴⁰

³⁵ Rührlechner, N. (2024)

³⁶ ibid

³⁷ ibid

³⁸ Rührlechner, N. (2024)

³⁹ Zendesk (2025)

⁴⁰ ibid

Cultural & Organizational Challenges

AI won't replace humans, but humans using AI will.

Fei-Fei Li, Stanford Human-Centered AI Institute

Introducing AI systems in banks requires not only technological adjustments but also far-reaching cultural and organizational transformation. These affect both the employees and the organization as a whole, presenting significant implementation challenges.

Implementing AI can raise employees' concerns about job security. Some fear their roles might be replaced by automation. In the interviews, about **80 %** of respondents stated that cultural changes and staff concerns are currently among the biggest challenges.⁴¹

Existing reservations about AI can also stem from a lack of understanding of how AI will shape day-to-day work in the future. Without transparent communication and appropriate training opportunities, employees may not understand the advantages of AI. Experts emphasize the importance of developing a bank-wide vision for growth with AI and cultivating a **culture of continuous learning**.⁴²

It's very important that there is a fundamental understanding at all levels of what is happening.⁴³

The key is to view AI as a tool that enhances human work, not replaces it.⁴⁴

To facilitate the transition, some banks are relying on comprehensive training programs. These are designed to raise employees' awareness of AI and equip them with the necessary skills. It is particularly important to offer training at all levels, from newcomers to senior management.⁴⁵

40 %

**OF OFFICE EMPLOYEES
DO NOT KNOW HOW TO USE
GENERATIVE AI EFFECTIVELY
IN THEIR WORK.**⁴⁶

Moreover, involving employees in the AI implementation process is crucial. Some banks organize workshops and brainstorming sessions to demonstrate AI's role in augmenting workflows. This not only improves understanding but also acceptance of the new technologies. Additionally, employees are encouraged to see AI as a complement to their skills rather than a job replacement.

Without this cultural shift, banks may struggle to integrate AI successfully and fully exploit its benefits.

⁴¹ Rührlechner, N. (2024)

⁴² ibid

⁴³ ibid

⁴⁴ ibid

⁴⁵ ibid

⁴⁶ Salesforce (2023)

4

Increasing Competitive Pressure from FinTechs & BigTechs

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The rapid growth of FinTech and BigTech companies is transforming the financial sector and establishing new standards by defining innovative bank services focused on technology and customer needs.⁴⁷ For traditional banks, this increases competitive pressure, especially regarding AI implementation, to remain competitive in this dynamic environment.

FinTechs like Revolut, and BigTechs like Amazon, Google, or Apple have revolutionized the financial sector with their innovative, highly digitized offerings. They often act more flexibly and quickly than traditional banks, giving them a significant competitive advantage. By emphasizing user-friendliness, fast digital access, and personalized services, they are gaining increasing market share, particularly among tech-savvy customers.

For traditional banks, this means they are no longer only competing among themselves but also with these technology-driven companies. FinTechs and BigTechs use AI to make their services more efficient and personalized, thus meeting the expectations of an increasingly digital customer base.⁴⁸

While FinTechs and BigTechs drive technological innovations, traditional banks face the challenge of modernizing their existing processes and infrastructures. The speed at which FinTechs and BigTechs launch new services to the market intensifies the pressure on banks to not only upgrade technology but also transform their core business models. The key question is whether banks can align their comparatively lengthy decision-making processes with the agile structures of their competitors.

Another aspect of competitive dynamics is the collaboration between traditional banks and FinTechs. Many banks enter into partnerships with BigTech or FinTech companies to boost their innovation capabilities and gain access to new technologies. Such alliances provide the opportunity to innovate more quickly and increase flexibility to meet the growing market demands.

The prevailing challenges cannot be addressed in isolation but are always interconnected, requiring a holistic approach to successfully address them.

⁴⁷ Leitner, J. (2024)

⁴⁸ ibid

5

Identifying AI Potentials & Non-Potentials

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Many companies view AI as a “magic bullet” for virtually every challenge and expect revolutionary solutions in widely varied fields. However, just as crucial as understanding where AI can be applied effectively is recognizing where it might not be the optimal solution. In many instances, more traditional technical solutions are not only more cost-efficient and faster but also entirely sufficient to accomplish certain tasks.

The Need for Targeted AI Implementation

Which use cases are suitable for AI deployment, and how can maximum benefit be derived from them? Where might conventional solutions be more sensible and efficient? And how can one determine which use cases actually create added value? For businesses, a strategic approach to identifying the right areas of AI application and implementing them successfully is paramount.

Targeted AI implementation begins with a **structured identification and prioritization** of relevant use cases, carried out in multiple steps:

NECESSARY PHASES OF TARGETED AI IMPLEMENTATION

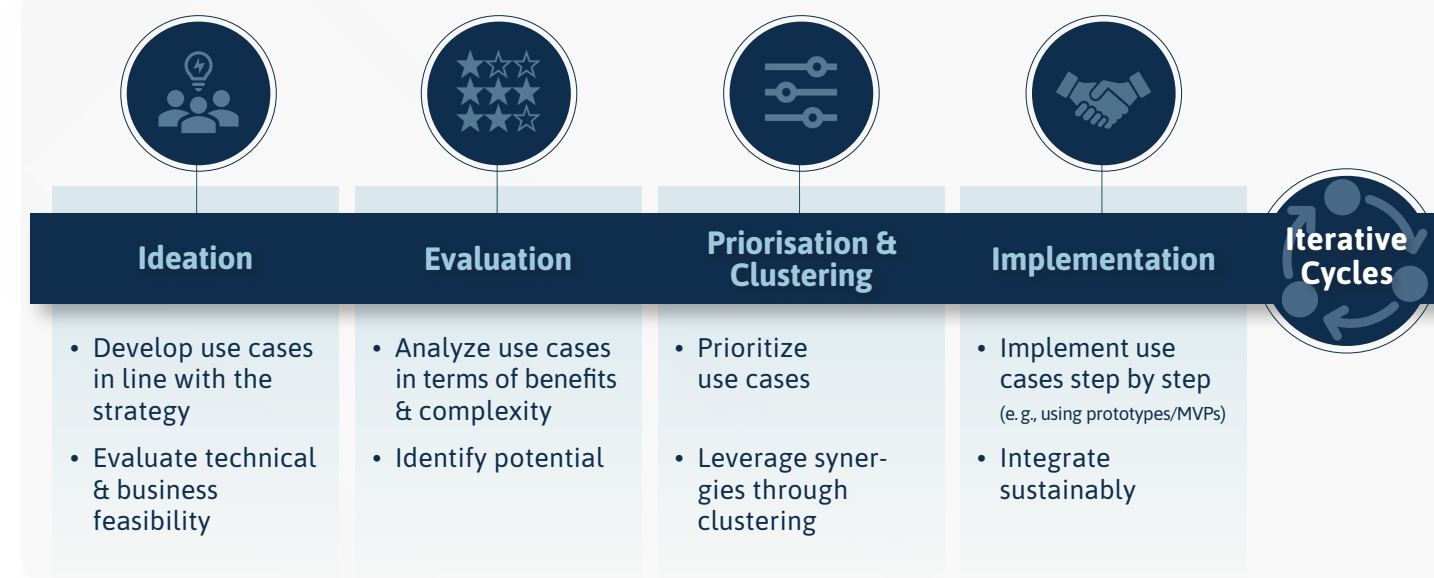


Figure 10: Necessary Phases of Targeted AI Implementation



Ideation: In the first phase, potential use cases that align with the company's strategy are identified. Early incorporation of both technical and business expertise is critical to evaluate each case's feasibility and projected value. By combining the expertise of domain specialists and business owners, ideas can be developed that are tailored to the specific needs and goals of the organization.



Evaluation: After ideation, the identified use cases are evaluated in detail. They are analyzed in terms of value and complexity to determine where AI offers the greatest added value. Economic benefits, strategic alignment, and technical feasibility play key roles here. A clear evaluation helps identify the use cases with the greatest potential.



Prioritization & Clustering: In the prioritization phase, the most promising use cases are organized and placed in a prioritization matrix. This matrix takes into account the attractiveness and feasibility of the use cases and allows the exploitation of synergies by grouping related use cases into clusters. In this way, resources can be used efficiently, and redundant efforts are avoided.



Implementation: The prioritized use cases are finally put into practice. In some instances, it can help to begin with prototypes or minimal viable products (MVPs) and only then scale up. This ensures that the necessary infrastructure and team support are in place for successfully transferring the use cases into operational processes. Clear planning and targeted provision of resources enable smooth integration into company procedures.

This implementation approach can be repeated in **iterative cycles** and offers companies the opportunity to **continually optimize their AI strategy** and **adapt to new insights**. Through regular review and adjustment of use cases, AI deployment remains precisely targeted where it delivers **maximum added value**. In this way, the company gains optimal benefit from every stage of the implementation process.

In summary, a well-thought-out selection and prioritization of use cases is crucial for the success of AI projects. By systematically executing the outlined phases and clarifying open questions early on, AI can be used not just as a technological innovation but as a strategic tool for value creation.

AREAS WHERE AI MAKES SENSE

Certain business fields benefit significantly from AI solutions. The ideal domains for AI use include:

- **Data-Intensive Processes:** AI can efficiently analyze large amounts of data and detect patterns that are valuable for decision-making
- **Repetitive Tasks:** Automating repetitive tasks increases efficiency while minimizing error rates
- **Personalization:** By analyzing customer data, AI enables customized customer experiences and strengthens customer loyalty
- **Real-Time Decisions:** In time-critical scenarios, AI can facilitate quick and accurate decisions

AREAS WHERE AI SHOULD BE AVOIDED

Equally important is avoiding AI in areas where it may do more harm than good or where traditional solutions might be better suited:

- **Emotionally Complex Decisions:** Human empathy and complex decision-making are difficult to replace with AI
- **Poor Data Quality:** AI solutions rely on high-quality data. If data is unclear or incomplete, results will be unreliable
- **High Regulatory Risk:** In heavily regulated areas, AI use can lead to legal problems
- **Transparency Requirements:** AI algorithms are often complex and hard to explain, making compliance with transparency requirements difficult
- **Areas Where Traditional Solutions Are Sufficient:** In many cases, a simpler, conventional technology can be more cost-efficient and quicker in achieving the desired result without invoking the extra complexity and potential risks that come with AI

6

AI in Banks: Current Use Cases & Future Visions

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Once potential AI application areas are identified, questions emerge: Where are banks currently deploying this technology, what innovations are in development, and what use cases does the future hold? This chapter provides an overview of successful applications, ongoing developments, and visionary ideas.

Current Use Cases of AI in Banks

AI creates the greatest benefits for banks in the following **six application areas**:

Personalizing Services & Products



AI enables highly individualized customer experiences by tailoring financial products and services to customers' needs and goals. Examples include personalized credit offers, customized savings plans, and targeted product recommendations based on transaction data. Real-time analytics also help anticipate customer needs – for instance, by suggesting retirement products or financing during life stages such as parenthood.

Identifying New Business Opportunities



Using AI, banks can detect patterns in customer data that point to previously untapped business opportunities. Analyzing market and transaction data allows the identification of new target groups or the exploitation of regional market opportunities. AI-powered tools also help to identify trends such as sustainable investments early and offer corresponding products.



Forecasting & Detecting Risks & Fraud

AI is also used intensively for fraud detection. It recognizes unusual patterns in real time, analyzes transactional anomalies, and helps mitigate potential risks. Credit risks can be precisely assessed by analyzing financial histories, income, and potential expenditures. Banks also use specific algorithms to identify and fend off threats such as cyberattacks at an early stage.



Improving Decision-Making

AI supports managers by analyzing data in real time and providing well-founded recommendations. This includes market forecasts, investment decisions, and portfolio optimization. Banks benefit from data-based insights that help them evaluate opportunities and risks more quickly.



Optimizing Processes

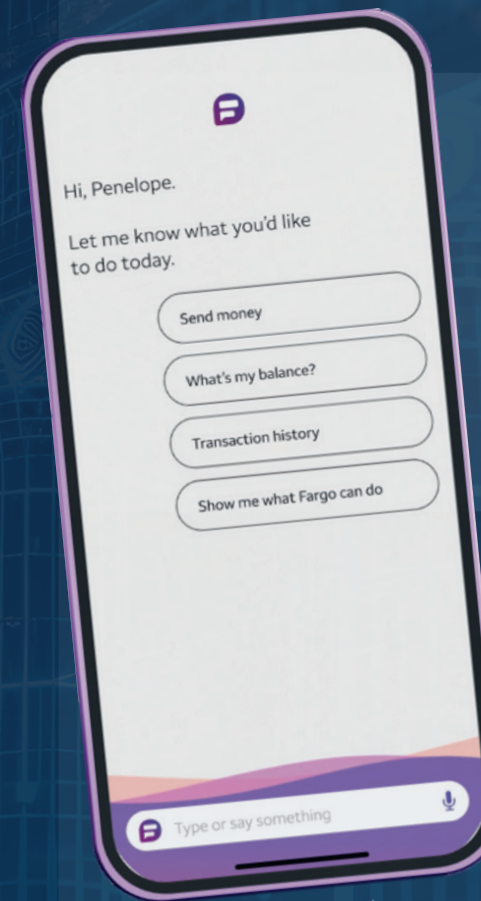
Processes like document verification, compliance checks, and customer onboarding are handled faster and more efficiently with AI. For instance, identity checks and KYC (Know Your Customer) procedures can be optimized by automatically comparing documents with real-time captures. AI is also used for voice biometrics. Additionally, automated workflows shorten credit application processing times and optimize back-office resource allocation.



Efficiency in the IT Area and Customer Service

LLMs help developers in IT departments significantly reduce development time through automated code generation and intelligent error diagnostics. LLMs also facilitate customer service by providing quick access to knowledge bases, answering complex questions in real-time, and supporting human agents in their work. This includes automating repetitive back-office tasks with LLMs. By rapidly processing and analyzing voluminous documentation, delivering dual benefits of time efficiency and improved accuracy.

CASE STUDIES



"Fargo" Assistant

Bank "Wells Fargo"⁴⁹

Virtual Assistant "Fargo"

25-30 %

reduction in costs for routine banking operations

Bank "Bank of Montreal"⁵⁰

AI-Powered Risk Detection

75 %

reduction in processing time for third-party risk assessments

Figure 11: Case Studies

⁴⁹ Wells Fargo
⁵⁰ Bank of Montreal

The Development of AI in the Banking Sector: Near Future & Distant Visions

Experts predict transformative shifts across in the financial sector, from superintelligent bank assistants that provide customers with individual support all the way to integrating technologies like virtual reality into banking experiences. Many banks are pioneering innovative AI applications to redefine industry standards.

Near Future: Concrete Innovations

In the coming years, banks will significantly expand AI use and introduce practical, customer-centric solutions:

Personalized Advice & Proactive Outreach: AI-based systems analyze customer data in real time to generate financial strategies and product recommendations perfectly aligned with individual needs.

Automated Contract Analysis: Systems that can analyze and simplify complex documents enable more efficient processes while improving client communication.

Fully Automated Decisions: First AI applications that approve loans or optimize investment portfolios within minutes are becoming market-ready.

Branches as Hybrid Centers: While traditional branches remain, they might focus more heavily on personal consulting for affluent private customers and corporate clients.



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Distant Future: Visionary Developments

A forward-looking perspective reveals groundbreaking concepts that could fundamentally transform the banking sector:

Banking Without Websites: Customers might interact exclusively with personalized AI assistants that handle transfers or modify account settings through voice control.

Virtual Reality (VR) in Branches: Branch visits could be replaced by VR consultations, allowing customers to conveniently hold advisory meetings from home in virtual rooms.

AI with Decision Autonomy: AI systems might not just analyze data but make fully autonomous decisions, for instance issuing loans in real time.

These innovations demonstrate that AI will soon have a noticeable impact on the way banks deliver services and meet customer expectations.

7

CX Trendsetters & the Path into the AI-Supported Future

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While many banks are still in the early stages, CX trendsetters are establishing new standards by using AI in a targeted manner to achieve efficiency, innovation, and lasting customer loyalty.

The success of these pioneers is reflected in clearly measurable advantages: For CX trendsetters, it is **128 % more likely** that they will achieve a high ROI from their AI-based CX tools. By leveraging key technologies like **AI agent personas***, sentiment analysis**, and **workforce management** with up to **3.8 times the likelihood**, not only boosting efficiency but also leading to superior customer experiences. This strategic advantage shows that early and targeted use of AI is crucial for sustainable success in modern banking. Forward-thinking pioneers integrate AI deeply into their CX strategies and focus on technologies that strengthen the human connection and optimize processes.^{51,52}

CX TRENDSETTERS VS CX TRADITIONALISTS

CHARACTERISTICS OF CX-TRENDSETTERS

Adopted AI early as pioneering implementers

Prioritize technologies that enhance human connections

Integrate AI deeply into their CX strategies

Work proactively to stay ahead of changing demands

CHARACTERISTICS OF CX-TRADITIONALISTS

Want to go beyond outdated practices but have not fully integrated AI

Do not know how to maintain the human aspect when using AI

Struggle with uncertainty about how AI can be integrated

Experience challenges in training teams to use AI tools effectively

VS

MEASURABLE ADVANTAGES AS A CX TRENDSETTER

ROI Increase

128 %

Higher return on their investments through successfully integrated AI.⁵³

Efficiency Increase

90 %

of CX trendsetters believe that **80 %** of problems can be solved without human intervention in the coming years.⁵⁴

Figure 12: CX Trendsetters vs CX Traditionalists

⁵¹ Zendesk (2025)

⁵² Applied AI Use Cases (2024)

⁵³ Zendesk (2025)

⁵⁴ ibid

* AI Agent Personas are virtual AI-driven assistants that create personalized interactions

** Sentiment analysis is an AI technology that detects emotional responses in customer interactions and categorizes them to identify moods and trends



Recommendations & Next Steps

CX trendsetters prove that the targeted use of AI not only increases efficiency but also strengthens customer loyalty in a lasting way. How can banks now tackle the central challenges of trust, internal acceptance, and technological integration to use AI effectively? Which concrete measures are needed to test MVPs, achieve quick wins, and build trust among employees and customers alike through targeted training, information campaigns, and user-friendly AI tools such as LLMs?

The **most important recommendations** for action that help banks on their way to successful AI integration are:

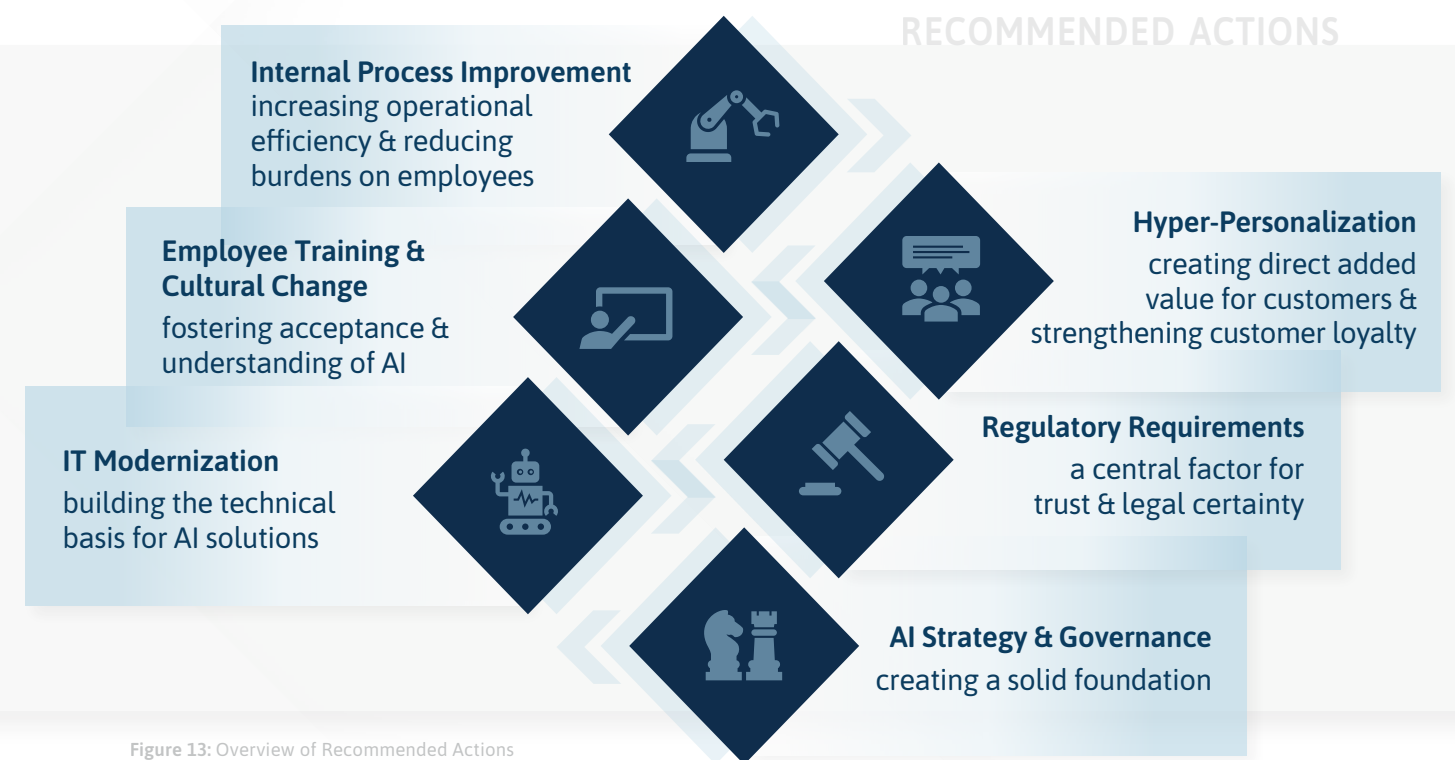


Figure 13: Overview of Recommended Actions

DEVELOP A CLEAR & COMPREHENSIVE AI STRATEGY



Goals and measures should be defined and communicated across departments. Governance frameworks ensure responsible and transparent AI use. Explainable models and clear guidelines fulfill regulatory requirements and build trust among both customers and employees.

ESTABLISH REGULATORY COMPLIANCE



Early measures to comply with regulations such as GDPR and the EU AI Act mitigate risks in AI implementation and support the development of long-term compliance processes. These should account for both legal requirements and ethical standards.

MODERNIZE IT INFRASTRUCTURE



Upgrading outdated systems and ensuring structured, accessible data formats provide the technical foundation for advanced AI solutions. A robust infrastructure allows the seamless integration of machine learning and generative AI models into existing processes.

IMPLEMENT CHANGE MANAGEMENT & TRAINING PROGRAMS



Employees should be prepared for AI use through targeted training. Transparent communication reduces fears and promotes cross-departmental collaboration. Innovation centers can facilitate the exchange of ideas, drive new solutions, and establish a data-centric organizational culture.

AUTOMATE REPETITIVE TASKS



AI makes it possible to increase efficiency by automating routine processes such as data processing and simple inquiries. This creates space for complex, strategic activities where human intervention is crucial, while maintaining essential human engagement in customer interactions.

ENABLE HYPER-PERSONALIZATION



AI powered real-time analytics create opportunities to develop customized product recommendations and financial advice. Machine learning models integrated into CRM systems identify trends and optimize offerings precisely for individual requirements and preferences.

9

EFS Expertise: Support in All Phases of the AI-CX Journey

The journey toward successful AI integration is complex and requires a clear vision, structured approaches, and continuous adjustments. Banks face the challenge of transforming processes, empowering employees, and cultivate customer confidence in AI-enabled services.

By executing a phased **roadmap** – from analysis to strategy development to implementation – banks can not only overcome challenges but also seize new opportunities in a targeted manner.

AI-CX-ROADMAP

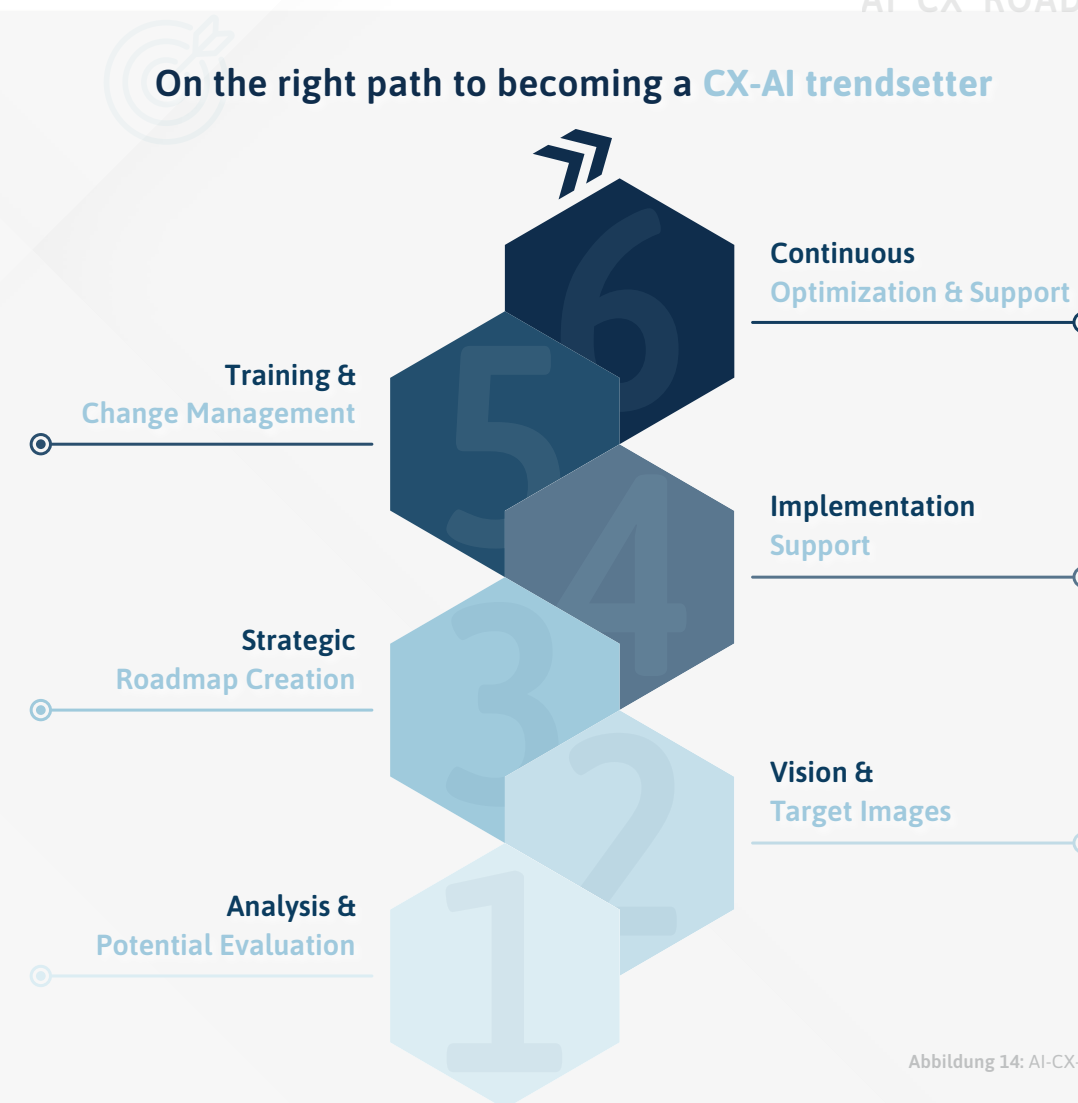


Abbildung 14: AI-CX-Roadmap

AI INTEGRATION ROADMAP

1

ANALYSIS & POTENTIAL EVALUATION

With our **AI Maturity Assessment**, we evaluate the current state of AI usage, check data quality, and identify specific use cases. We help uncover potential and define areas where AI is sensible – or intentionally avoided.

2

DEVELOP VISION & TARGET IMAGES

We develop **customized target images** that provide a clear perspective on the possibilities of AI and realistically reflect your business objectives. This vision serves as a guide for all further steps.

3

STRATEGIC ROADMAP CREATION

Based on the analysis, we create an **individual AI-CX roadmap** that prioritizes measures, integrates compliance and ethics, and structures the digital transformation lifecycle. **Agile planning** ensures flexibility in the face of change.

4

IMPLEMENTATION SUPPORT

We guide technology selection and system integration. Through **agile implementation strategies**, we ensure that projects are optimally adapted to complex requirements.

5

TRAINING & CHANGE MANAGEMENT

Through targeted **training programs** and change management measures, we promote employee acceptance and accompany the cultural transformation toward a data-driven organization.

6

CONTINUOUS OPTIMIZATION & SUPPORT

Long-term guidance through **KPI monitoring and regular system adjustments** ensures that your AI initiatives remain successful over the long term.

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AI is the key to the future of the banking-sector for more efficient processes, personalized customer experiences, and long-term competitive advantages. Banks that act now not only shape the industry but also secure a top position in an increasingly AI-driven world.

Together, we develop strategies, drive projects forward, and accompany every phase of the transformation – with clear concepts, innovative solutions, and practical expertise. Actively shape the future and get your bank ready for the next generation of banking.

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