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AI in Finance: Bridging the Inclusion Gap

Leveraging Data and Technology to Drive Growth, Efficiency, and Innovation in Financial Inclusion



The benefits of digital transformation have been acknowledged globally across almost all industries, and especially in financial inclusion, while acknowledging the fact that digital channels' adoption has fallen back to pre-pandemic levels in many instances. The recent acceleration, availability, affordability, and accessibility of Artificial Intelligence (AI) tools have ushered in another digital revolution, not seen in decades, for almost all industries globally. AI can have an out-sized impact on financial inclusion by helping financial service providers become more agile, efficient and grow to serve people better. The field is complex, and much of it is being hyped up. This paper sets out the key practical aspects and considerations of what is AI, why is it useful, how to begin, and which tools should be kept in mind while embarking on this journey. This paper does not cover the organizational change management that is always required to make all transformation projects successful.

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EMpact is helping build AI Labs within our partner organizations as a part of our effort to accelerate digital transformation of agricultural value chains and relevant financial services.

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Data is creating Big Opportunities. For everyone.

Data-driven decision-making in the banking sector has a rich and intriguing history that can be traced back from ancient times in China, India, Egypt, Rome, and medieval Italy, to the modern era. However, despite the significant changes in methods and technologies over the centuries, the fundamental principle of using data and algorithms to make business decisions for the provision of meaningful services has not changed.

“Big” data, as it has been known, is large amounts of data available from sources that are typically external to the organization. The sheer volume of data produced today is staggering. The [amount of data](#) generated by mobile app users, things connected to the internet, video, weather system monitors, political campaigns, social media, etc., annually has grown, in the space of 13 years, by an estimated 60x. And this is just going up, creating opportunities for businesses to revamp their models by understanding and leveraging data better.

Advances in data analytics and computational power are allowing firms to exploit data in an easier, faster, and more reliable manner, and at a [larger scale](#). Using [big data](#), financial firms and new entrants from other sectors can create highly personalized financial products and services, such as individualized investment portfolios, embedded supply chain finance, and pay-as-you-go insurance policies. According to recent [research](#), financial institutions may see an increase in revenue of 5-15% if they implement data-driven customization strategies.

Small data is the key ingredient of the Secret Sauce.

But it isn't just big data that can help extend high-quality financial services to those who are underserved by the world's financial sector: data of all shapes and sizes can help financial service providers improve operations and accelerate financial inclusion.

Many, if not most, financial services providers focused on financial inclusion (banks, microfinance institutions, Co-operatives, non-bank financial companies, etc.), which are referred to collectively as “FSPs” in this paper, have been in operation for more than a decade. The richness of data collected by the FSP on its *credit application form*, albeit a snapshot, is a massive asset available only to those who took the time to get to know their clients. These internal or “small” data is where the secret sauce of the company lies – why and how certain credit decisions were made? What was the usage and behavior by customers? How did customers' preferences change over time? What were their real-world social networks?

Many leaders of FSPs feel that large companies and e-commerce platforms have a lot of data available to make decisions and serve their customers better, making them difficult to compete with in the digital world. On the contrary, it is important to note that FSPs are sitting on a treasure-trove of in-depth data owing to their high-touch model.

Data-driven solutions will unlock new possibilities.

The ability to access, analyze and use data at historically low price points, create two major opportunities for FSPs: first, the ability to access data from partners (e-commerce, gig platforms, supply chain, governments, to name a few) to make more meaningful solutions and engagement to help businesses run better, buy better and sell better; and second, unlocking small data within the institution can create a strong competitive positioning against the incumbents. Artificial intelligence (AI) tools can help unlock these data sources and open doors to new possibilities that may not have been feasible earlier.

What is AI?

Processing data into usable information is at the core of any “intelligence” model, be it biological or technological. AI is the field of study and application of tools that simulate human intelligence processes in

computer systems. In general, “training” AI systems work by ingesting large amounts of data, analyzing it for correlations and patterns, to make *predictions* about future states or *generate* entirely new data.

AI tools have been around since the 1980s. Early iterations of the now familiar AI applications were built on traditional statistical analysis models, based on the work of Sir Ronald Fisher between 1925 and 1935. Even though AI’s rapid progress was evident in the technology community, OpenAI’s big splash release of ChatGPT in November 2022 brought AI to the forefront and caught the imagination of the public globally. And this trend is here to stay, as evidenced by the fact that AI based startups received over 25% of investments in 2023 and Goldman Sachs [projects](#) that private investments in AI will grow from \$92 billion in 2022 to over \$200 billion in 2025.

There are several subsets within the field of AI, based on their input mechanisms, processing approach and output types. Figure 1 showcases the most relevant to financial inclusion.

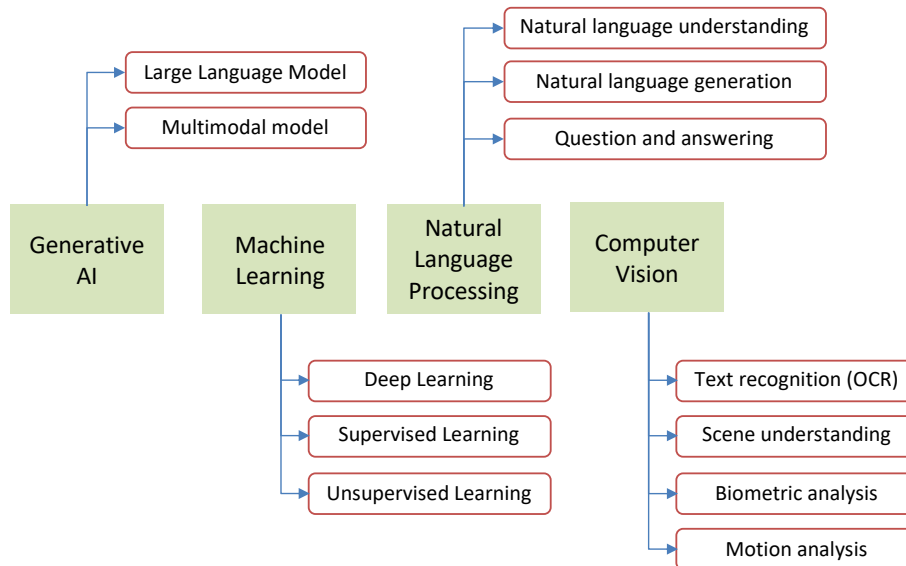


Figure 1: There are several types of AI and some more relevant to financial inclusion than others

Machine learning (ML) is a subset of AI that enables computers to autonomously learn without being explicitly programmed. ML models are created from machine learning algorithms, which undergo a training process using either labeled, unlabeled, or mixed data. FSPs will find this technology useful for credit approvals, fraud detection, process improvements, increasing channel usage, among other things. Indeed, these tools have been in place at many FSPs for a while already.

Natural language processing (NLP) deals with the ability of computer systems to understand and generate human language – spoken or written. NLP algorithms are used to analyze text, comprehend, converse with users and perform tasks like language translation, sentiment analysis, and question answering. This is useful for creating chatbots over WhatsApp for example that are voice-based to overcome literacy challenges.

Computer Vision (CV) empowers computers to ‘see’ and comprehend the visual world, analyzing images and videos like humans. CV algorithms analyze images and videos and FSPs can use this for tasks like Know-your-Customer (KYC) management, biometric/face recognition, and document management.

Generative AI creates new and unique outputs, such as images, texts, music, or even computer code by learning from data patterns. Gen AI is unlike other forms of AI that are usually designed to perform specific tasks. FSPs can leverage Gen AI for tasks such as training staff, financial education of customers, innovating products, and process improvement recommendations.

AI can help accelerate financial inclusion.

Given the vast array of possibilities, it can be confusing to navigate the AI universe. A framework that FSPs can use to determine the key areas of focus is three layered: **AI for business growth**, **AI for operational efficiency**, and **AI for product innovation**. Figure 2 showcases some examples of how AI might support financial inclusion by helping make the FSP more efficient.

| To support business growth, AI can help with... | To increase operational efficiency, AI can help with... | To support product innovation, AI can help with... |
|--|---|--|
| Identification of potential customers through alternative segmentation models based on pattern detection | Recommending modifications to risk scorecards based on transaction patterns | Rapid analysis of ecosystem partner data offered via API connections to suggest product changes – for example supply chain finance |
| Widening the pool for selection of customers based on patterns detected from historical data | Reducing costs of customer support by using text and voice chatbots in customers' vernacular language | Suggesting products based on external data sources for example climate change for insurance |
| Recommending cross-sell and up-sell opportunities like insurance, remittances, and advice for business improvement | Rapid fraud detection based on deviation from expected patterns Optimize partnerships based on transaction pattern detection | Suggesting changes to products on a geographic or segmented basis by analyzing data patterns |
| Recommending tactics to respond to competitor products and positioning | Create IP by analyzing scanned documents | Monitoring usage of advisory services to create tailored products |
| Increase customer engagement via tailored loyalty schemes | Recommending customized training to staff based on performance | Building a "super app" that can curate products specific to the customer |

Figure 2: Examples of how AI might support financial inclusion

The following sections discuss the practical steps to consider and use AI tools. This paper does not cover the organizational change management that is required to make all transformation projects successful.

Step 1: Start with the customer's journey.

The good news is that, like any technology, business needs should be in the driving seat before launching into an AI project. Using a customer journey map, as showcased in figure 3 is a powerful way to define which AI tools can be leveraged to make processes more efficient, giving rise to the business needs.

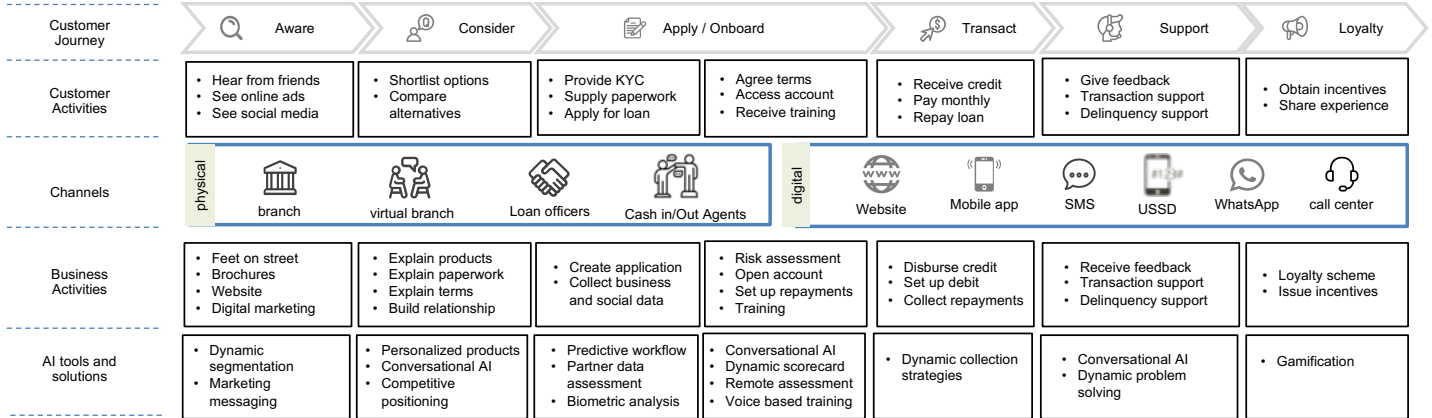


Figure 3: User journey map and tools that suggested AI tools

Step 2: Map the ideas against the complexity of implementation.

The brainstormed ideas need to be mapped against the effort of design and implementation. At this stage, take a high-level view of the complexity of building the solution keeping in mind availability of data internally or externally, partnerships needed, skills required and system requirements. Figure 4 showcases the relative complexity of design and implementation of the solution versus the impact on customer engagement. This type of analysis is key to prioritization of solutions as part of the business case to justify the investment in the creation of these solutions.

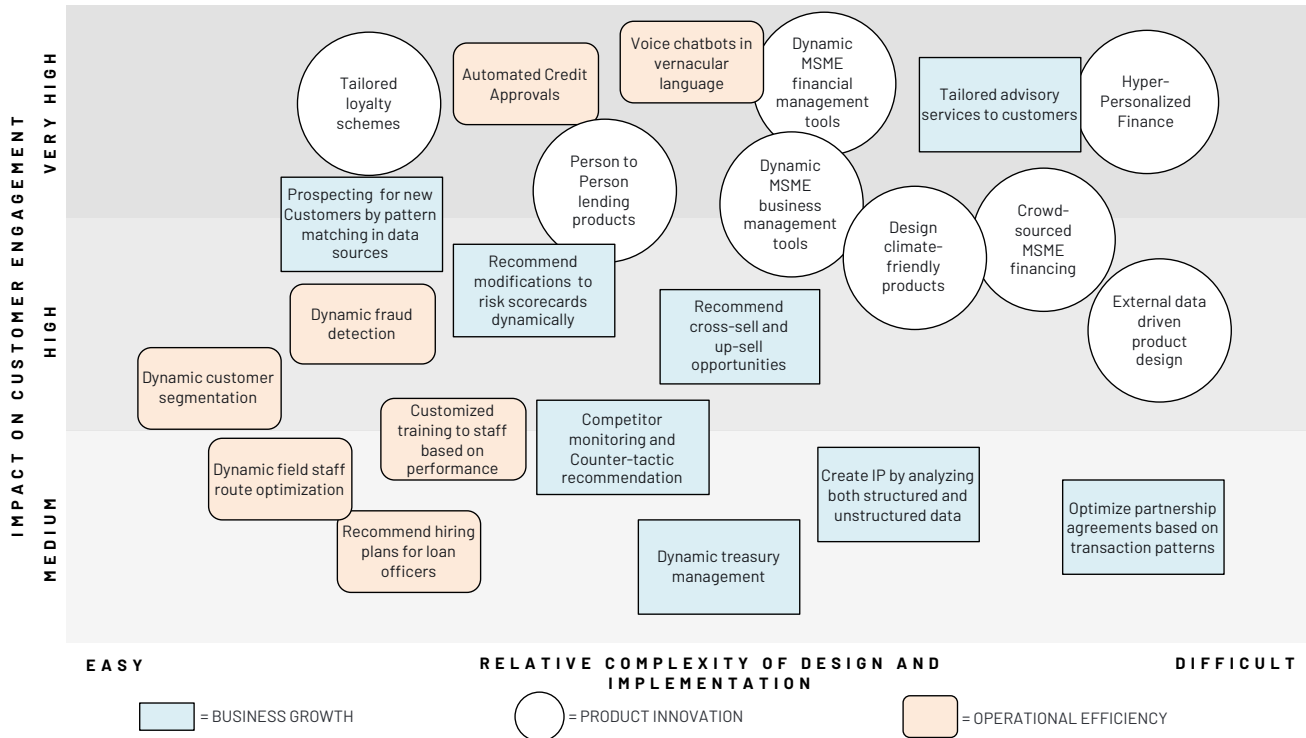


Figure 4: Examples of how AI might support financial inclusion

Step 3: Compelling business cases will help prioritize the work.

As is the case with any program, it is nearly impossible to do everything at the same time. Creating a high-level business case per idea will help prioritize the shortlisted suggestions.

The key drivers of a business case for any innovation are a) revenue growth through customer engagement – will customers be willing to use and pay for the services offered (directly or indirectly) and b) savings through operational efficiency (reduced staff hours, better risk management, etc.)? It should be noted that it is easier for organizations to build business cases that identify direct cost savings rather than innovation driven revenue growth without demand research.

While it is impossible to develop a complete (and generic) business case for each type of solution, figure 5 showcases a list of suggested drivers, pre-requisites and examples that can be used as food for thought while building a business case for the FSPs' specific use cases.

| Use case | Business case drivers | Pre-requisites | Example |
|--|--|--|---|
| Recommend product improvements | Increased product adoption, increased retention, increased transactions | Product descriptions, usage data, performance data, customer data, AI platform | Nomanini uses AI to analyze customer data and deliver personalized recommendations. |
| Implement AI-powered voice and text chatbots customer support | Reduction in operational costs, improvement in process efficiency, increased customer satisfaction with faster resolution times. | Defined languages, data platform, APIs between chatbot and FSPs' servers, AI platform, channels to customers – voice, WhatsApp, for example. | Bradesco (Brazil) implemented a chatbot in collaboration with IBM Watson to handle customer service inquiries, trained in Portuguese to understand over 10,000 customer questions and reduced customer support costs by up to 30%. |
| AI-powered credit scoring system that analyzes internal and external data points | Increase in loan application approval rates, reduction in loan processing time, growth in new customer acquisition. | Data platform, ML platform, process modifications, training. | ZestAI's partner HawaiiUSA federal credit union saw an increase of 70% in approvals while 24% lower delinquency rates compared to the national model. Creditas analyzes alternative data sources such as social media profiles. |
| Tailored loyalty programs – hyper personalization | Reduce churn, increase share of wallet and share of mind, increase word-of-mouth | Customer data, transaction data, loyalty management platform, AI platform | Companies reported a positive ROI of 4.9X on average for every dollar spent on loyalty programs |
| Collections management | Reduce non-performing loans, reduce bad debt, and maintain or improve portfolio at risk | Process mapped including data within each step, data platform, AI platform | Trueaccord have improved engagement rates by 50% and reduced the time taken to resolve debts. |

Figure 5: Examples of suggested drivers and pre-requisites to support business case development

The revenue and cost drivers of the business case are going to be specific to the AI-assisted tool being deployed. However, there is need to build the *core infrastructure* – data platforms, decisions on which tools to use as the AI engine, and the effort required to integrate it all into the FSP's systems. This infrastructure, like that of a core banking system implementation, can be amortized in line with the FSP's policy.

In summary, like for any technology-driven project, develop a business case as part of the project charter and set realistic KPIs for success. Understand the costs involved are going to be a mix of capitalized costs (data platforms, API engines), operating costs (AI platform, continuous training, project costs, and people), and variable costs (per transaction data requests, for example). Not everything will neatly fit into an ROI analysis for the first couple of projects, so it will be important to create a business case for the board to sign off on the investment into the capital expenditure. It will also be important to have the right skills in place – some existing team members can be trained; others will need to be hired. Partnerships are also key in this approach – not all the data will be available to the FSP, it will need to have partners for data, which will need careful negotiation.

Step 4: Decide on mix of AI tools

While considering an AI enabled digital transformation strategy, there are several and diverse tools available in the market, with more being added every day. It is key to make the point that FSPs need to choose the right horses for the right courses: although Generative AI is the most prevalent in the media, FSPs will need to consider a combination of technologies to build solutions that support the organization's needs. Figure 6 showcases a few use cases and required technologies.

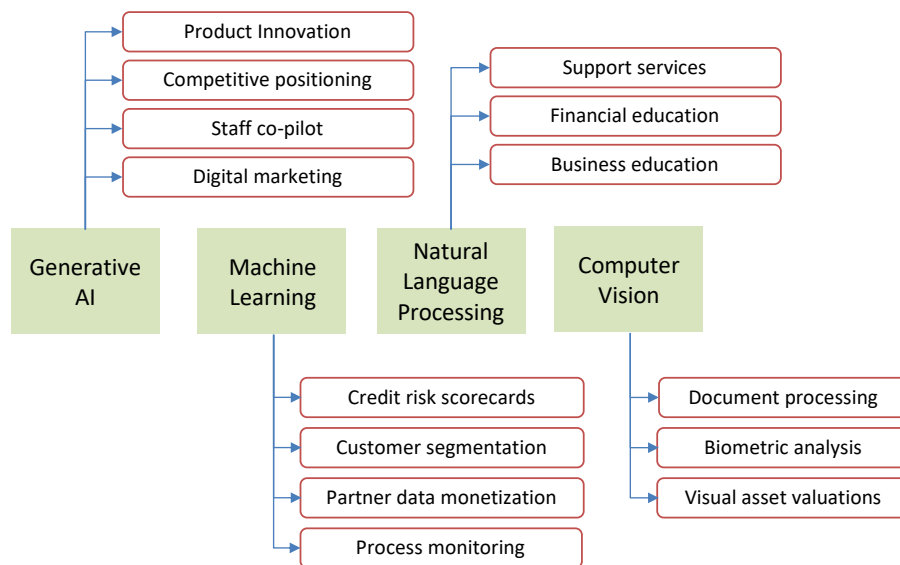


Figure 6: Examples of AI technologies to support financial inclusion

As part of the tool assessment, it is important to understand AI models and AI platform choices.

FSPs can leverage various **AI models** to enhance their operations, customer acquisition, process efficiency, and product innovation. **GPT-4** is ideal for FSPs looking to implement versatile AI solutions for customer support, document analysis, and market insights. If not going for a cloud-based service which requires some level of uploading documents (while keeping in mind data confidentiality issues, OpenAI's APIs can be used to ingest locally held documents without sharing them online), given the heavy levels of compute needed, it is suitable for institutions with access to significant computational resources. **LLaMA** is useful for document processing and internal knowledge management without requiring high computational power given that it runs entire on the cloud of Meta – it is a great for resource-constrained FSPs. Google's **BERT** is great for FSPs needing strong natural language understanding capabilities and for specific NLP tasks such as sentiment analysis and document classification. Google's **T5** model is perfect for FSPs looking to leverage a model for various text-related tasks as it offers high flexibility and strong performance; but it does require significant computational resources. Figure 7 showcases comparison of some leading AI models and their potential applications supporting financial inclusion.

| Criteria | GPT-4 (OpenAI) | LLaMA (Meta) | BERT (Google) | T5 (Google) |
|--|-------------------------------------|---|---|------------------------------------|
| Type | Large Language Model (LLM) | Efficient Language Model | Natural Language Understanding (NLU) | Text-to-Text Transformer |
| Key Capabilities | Text generation, summarization, QA | Resource-efficient NLP tasks | Classification, sentiment analysis | Unified text-to-text tasks |
| Applications in financial inclusion | Customer support, document analysis | Document processing, knowledge management | Sentiment analysis, document classification | Data augmentation, text generation |
| Strengths | Versatile, strong NLP performance | Efficient, suitable for limited resources | Excellent NLU performance | High flexibility, unified approach |
| Weaknesses | High resource requirements | Lower performance than larger models | Focused on understanding, not generation | Computationally intensive |

Figure 7: Summary of AI models, their strengths and weaknesses

FSPs can kickstart their AI journey with platform providers that can be tailored to their needs. Each provider offers unique strengths and capabilities, so FSPs should choose based on their specific requirements, existing technology stack, and long-term AI strategy. Examples of technology partnerships include:

1. **Google Cloud AI's** strengths include robust machine learning tools, extensive cloud infrastructure, strong data analytics capabilities. Google Cloud offers comprehensive training programs and certification courses for AI and machine learning. Systems include TensorFlow neural network, AI Platform, BigQuery ML, Document AI and AutoML
2. **Microsoft Azure AI's** strengths include Integration with existing Microsoft products (Office 365, Dynamics 365), user-friendly tools, and strong support for enterprise applications. Microsoft provides extensive training resources, including Microsoft Learn and AI Business School. Additional tools include Microsoft Fabric which organizations can use as a one-stop-shop for all its integrated data needs.
3. **AWS AI's** strengths include highly scalable infrastructure, wide range of AI and machine learning services, strong developer community. In addition, AWS offers a variety of training and certification programs. Tools include Amazon SageMaker, Textract, Rekognition, Lex, Polly and Comprehend.
4. **Databricks Dolly's** strength is an open source LLM platform that is fully licensed for commercial use. This is a great platform for conversational AI tools.
5. **IBM Watson's** strengths include AI-driven data analysis and comprehensive support for AI integration into enterprise systems. Tools include Watson Studio, Watson Discovery and Watson Assistant.
6. **H2O.ai** is an open-source AI platform providing tools for building machine learning models and Driverless AI to make AI accessible and easy to deploy.

Figure 8 showcases a comparison of the technologies offered by Google Cloud AI, Microsoft Azure AI, and AWS AI.

| Criteria | Google Cloud AI | Microsoft Azure AI | AWS AI |
|-----------------------------|---------------------------------------|-----------------------------------|--|
| Data Structuring | Strong (Document AI) | Strong (Form Recognizer) | Strong (Textract) |
| Customization | AutoML for custom models | Flexible Cognitive Services | Amazon Comprehend for text insights |
| Integration | Strong with Google services | Seamless with Microsoft ecosystem | Excellent within AWS ecosystem |
| Cost | Variable, can be high | Flexible, but can accumulate | Complex, variable based on usage |
| Training and Support | Extensive resources and certification | Extensive training and support | Strong community and support resources |

Figure 8: Summary of three leading AI platform providers

Given the data contained within FSPs may be paper based, it is important to call out how to use AI tools to **convert paper-based** records into digital format is a crucial step for FSPs aiming to leverage AI and improve operational efficiency. Several tools and technologies can facilitate this process, ranging from hardware solutions to software applications.

- a. Invest in high-quality document scanners to handle large volumes of documents quickly and efficiently.
- b. Utilize optical character recognition (OCR) software to convert scanned documents into editable and searchable digital formats.
- c. Implement robust document management systems such as Microsoft SharePoint or DocuWare to manage and store digitized documents securely.
- d. Leverage AI-powered platforms like Google Document AI, Azure Form Recognizer, or Amazon Textract for advanced data extraction and processing.
- e. Consider mobile scanning apps for field staff to capture and digitize documents on the go.
- f. Explore RPA tools like UiPath or Automation Anywhere to automate the data entry and document processing workflows.

Figure 9 showcases a sample of products that FSPs can consider for each of their needs.

| Category | Product | Description |
|--|---------------------------------|---|
| Optical Character Recognition (OCR) | Adobe Pro DC – OCR | Provides powerful OCR capabilities to convert scanned documents into editable and searchable PDFs. It also offers integration with other Adobe products for further processing. |
| | ABBYY FineReader | A robust OCR software that supports multiple languages and can convert scanned documents, PDFs, and images into editable formats like Word, Excel, and searchable PDFs. |
| | Tesseract OCR | An open-source OCR engine developed by Google, which can be integrated into custom applications for document digitization |
| Document Management Systems | Microsoft SharePoint | Offers a comprehensive DMS with strong document scanning and OCR capabilities. It also integrates well with other Microsoft Office products. |
| | M-Files | Provides intelligent information management with automated document classification, OCR, and robust search functionalities. |
| | Docuware | A cloud-based DMS that offers document scanning, OCR, and workflow automation, making it easier to manage and retrieve digital documents |
| Mobile Scanning Apps | CamScanner | A popular mobile app that allows users to scan documents using their smartphone cameras. It includes features like OCR, document editing, and cloud storage integration. |
| | AdobeScan | Converts images of documents into PDFs with OCR capabilities, allowing for easy text extraction and editing. |
| | Microsoft office lens | A free app that integrates with Microsoft Office products, enabling users to scan documents, whiteboards, and business cards with their smartphones |
| AI doc management | Google Document AI | Uses machine learning to extract structured data from unstructured documents. It supports various document types, including invoices, receipts, and KYC forms. |
| | Microsoft Azure Form Recognizer | Extracts text, key-value pairs, and tables from documents, making it easy to digitize and process forms and receipts. |
| | Amazon Textract | Automatically extracts text and data from scanned documents using machine learning. It can handle a variety of document types, including forms and tables. |

| | | |
|---|---------------------|---|
| Robotic Process Automation (RPA) | UiPath | An RPA platform that can automate repetitive tasks such as data entry from scanned documents into digital systems. It integrates with OCR tools to enhance data extraction. |
| | Automation Anywhere | Offers RPA solutions that include document scanning and OCR capabilities, enabling the automation of end-to-end document processing workflows. |
| | Blue Prism | Provides intelligent automation capabilities, including OCR integration, to streamline document digitization and data entry processes. |

Figure 9: Examples of document image to text conversion tools

Step 5: Take an enterprise view of the technology stack

Given the deep reliance on technology and digital tools, it is imperative to develop a current and future state of the digital solution architecture. Figure 10 showcases an example of a high-level digitally transformed FSP's solution architecture.

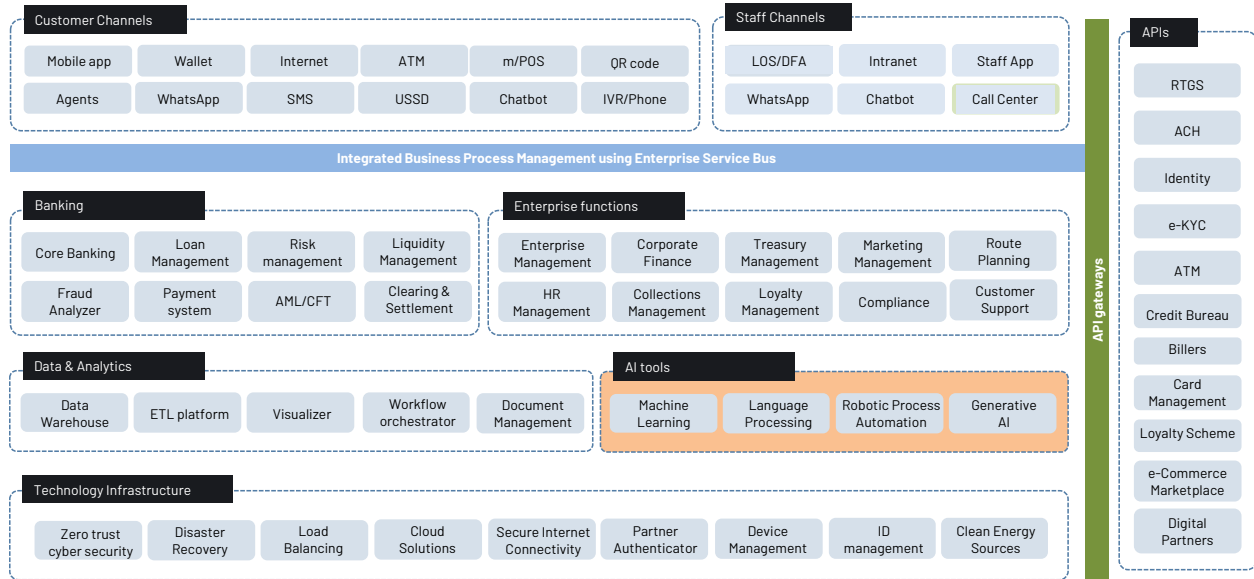


Figure 10: Enterprise architecture for a digitally transformed FSP

Not all FSPs will have these components in place, for example, not all FSPs offer card scheme payments – issuance and acquiring or be integrated with 3rd party digital platforms. This exercise will provide clarity of which systems will need to be acquired, changed or outsourced, giving an indication of costs.

To be managed, the risks must be well understood.

AI tools hold immense potential but are not without their risks and challenges – which range from skills shortages resulting in inaccurate data analytics through to digital divide being further widened – between countries. These must be understood by FSPs – some outside their control, and some within. The top three risks are: 1) lack of data strategy and controls, 2) lack of personnel and skill sets needed to put AI ambitions into action including inappropriate data or AI models, and 3) lack of investment in such a strategic transformation project. While each FSP's project will need to assess its own specific risks, figure 11 showcases 15 risks to consider as food for thought when embarking on projects leveraging AI based solutions.

| No | Description of risk | Details |
|----|--|--|
| 1 | Perception of AI being a Black Box | As opposed to linear regression models, AI models can become increasingly complex and sometimes opaque over time. This can make models potentially impossible to understand, follow, or replicate, causing the model to behave improperly or inappropriately and difficult to identify the reasons why. |
| 2 | Bias within credit decision algorithms | The opaqueness of AI-based assessments and/or poorly constructed models have the potential to unintentionally produce biased results, discriminating against groups of people who are legally protected (based, e.g., on race, sex, or religion), or perpetuate pre-existing biases thus posing a risk to consumer protection. |
| 3 | Exclusion of consumer groups and widening the digital divide | If the data utilized for AI modeling is gathered from big data sources, it will lead to the further exclusion of consumer groups who do not use such systems. Determinations will further exclude those who are not digitally active. While it is true that digital access and penetration is increasing, it is critical to solve for the digital divide. |
| 4 | Exploitation of consumer data | If AI models access internet activity and track data without ensuring consumers are adequately informed, it could raise the possibility of privacy and data protection legislation infractions. |
| 5 | Reduced choice due to lack of competition | Smaller FSPs may be excluded from the market because they lack the financial and human resources needed to adopt internal AI/ML techniques or have unequal access to big data sources. This could reduce competition, leading to the emergence of new systemic risks as a result of market concentration. |
| 6 | Lack of compliance | Without ensuring evaluation of compliance related matters, the monetization of data and insights from AI projects might result in regulatory embargoes and harm the organization's reputation. |
| 7 | Lack of enterprise data systems | Enterprise data management is lacking in the financial industry, which processes enormous amounts of data generated both internally and externally. This could result in lower quality of assessments and other solutions, preventing the realization of planned benefits |
| 8 | Poor data quality | The performance of AI models relies on the quality of input data because poor data will result in poor output and predictions. Without adequate validation, enrichment, de-duplication, and formatting, data is likely be of low quality. |
| 9 | Data relevance | Each data point should be thoroughly evaluated before inclusion and application in any model. Given the enormous volume of data involved, evaluating the dataset used on a case-by-case basis could limit the business case for AI. |
| 10 | Lack of clear ROI | AI-based systems need a period of investment before the returns will become obvious. This creates a hesitancy which hampers the utilization and growth of AI based solutions. |
| 11 | Inadequate budgets | FSPs may categorize AI projects as IT projects, change management projects, or innovation projects. Without a strategic perspective, these projects could result in inadequate budgets. Such budgetary constraints hamper the effective deployment of AI-based systems. |
| 12 | Technology-led projects not meeting needs | AI team may create technically complex solutions that may not always meet the business issues, which may lead to ineffective and sub-optimal suggestions and decisions. |
| 13 | Lack of bandwidth of Data Scientists | Data scientists should be spending their time creating and testing new algorithms rather than performing labor-intensive manual tasks like data retrieval and cleaning. Extensive testing, model building, deployment, and maintenance are required for AI models. As a result of poor testing and validation of the new AI models, this could have negative effects on the outcomes related to financial inclusion. |

| | | |
|----|--|---|
| 14 | Lack of availability of talent | FSPs may not be able to afford the right level or quality of talent to build the solutions required at the required standards. This could result in lower-than-expected quality of models and services, leading to data quality and other issues. |
| 15 | Lack of adequate levels of cybersecurity | Malicious hackers may launch aggressive cyber-attacks against ML models. The application of AI opens additional attack surfaces and exposes systems to new avenues for malevolent actors to exploit and abuse. These assaults aim to compromise the AI system's availability, secrecy, and integrity. |

Figure 11: Key risks to consider when implementing AI tools

In conclusion

Artificial intelligence (AI) tools can be a powerful force for increasing financial inclusion by offering relevant, personalized products based on analyzing data of customer behavior, partner transaction patterns, and leveraging big data where relevant. Data stored in FSP's systems are unfortunately not always accessible due to many practical reasons. This highly relevant data is the key ingredient in the secret sauce that FSPs have available. FSPs can offer customized products to underserved clients by pairing this data with external data sources, such as e-commerce, gig worker and social media platforms. All with the intent of helping underserved businesses run better, buy better and sell better.

However, embarking on the journey of implementing AI tools is not a trivial exercise. Here are the initial steps to consider:

1. **Develop the vision** for the AI-led digital transformation. Consider business growth, operational efficiency and product innovation as the key categories when thinking of the "why" to use AI within the FSP.
2. **Shortlist and prioritize ideas** supported by business cases that support revenue generation and/or cost savings. Map the complexity of design and implementation against the impact on customer engagement.
3. **Data and data strategy.** All forms of AI need to be fed data to enable them to learn. Therefore, an FSP should start with data collection and digitization.
 - a. The data collected during the customer credit application process is the most useful data set available to the FSP – inventory the data collected, including those on paper, to ascertain the number of fields and quality of the data.
 - b. For those elements already digitized, pdf for example, use AI tools to swiftly move the content into a usable format. For hand-written documents, scan them via computer vision-based AI tools to optically recognize the text. For those already within a digital tool like a loan origination system, enable access to AI tools.
 - c. Establish a centralized data store where relevant data is stored and easily accessible.
 - d. Ensure data accuracy, consistency, and completeness by implementing data validation checks and regular audits.
 - e. Take an inventory of data captured through mobile apps, SMS, and other digital interactions. Enable access to these data via the AI tools.
 - f. Set up a data governance process, reporting to the Board's digital committee, that oversees the policy, management, processes and holds people accountable.

Key issues to consider are whether cloud-based data stores such as those used by AI tools are compliant with the relevant regulatory authorities. Also consider the depth of cybersecurity and resilience.

4. **Skills and talent development.** Any transformation is more about the people within the organization than the systems. It is important therefore to focus rather heavily on the people and culture within the organization. It is also key to develop that expertise internally starting with a small group.

- a. Provide training sessions for staff to build a foundational understanding of AI and its potential applications in microfinance.
- b. Hire or train people who can analyze data, develop AI models, and translate insights into actionable strategies.
- c. Enhance the technical skills of IT staff to manage and maintain AI systems and infrastructure.
- d. Encourage a culture that promotes data-driven decision-making and continuous learning about new technologies.

Key issues to consider are the affordability and competition for the skills and talent that are specialized in design, development and implementation of AI tools. The good news is that FSPs can leverage capacity building programs offered by Microsoft, Google and AWS, amongst others.

5. **Systems.** It is critical for FSPs to invest in systems that are robust, secure and scalable.
 - a. Determine the AI models to use for your specific requirements.
 - b. Invest in AI platforms and tools that can analyze data, automate processes, and generate insights. Examples include machine learning algorithms for credit scoring and chatbots for customer service.
 - c. Utilize cloud computing solutions to scale AI applications cost-effectively and ensure data accessibility from anywhere.
 - d. Ensure seamless integration of AI tools with existing core banking systems, CRM, and other software used by the institution.

Key issues to consider are whether the systems are available at the price point to support financial inclusion initiatives.

6. **Partnerships.** It is critical to put strategic partnerships in place that leverage individual strengths to deliver solutions that are beyond the data or technical capabilities of a single FSP. Such partnerships should also be designed to create new business models. Collaborate with universities and research institutions to stay updated on the latest AI advancements and leverage academic expertise.
7. **Risk management.** Identify the key risks involved in the selected solutions being considered. Develop mitigation plans against them.
8. **Remember** - do not try to do everything, everywhere, all at once. Set milestones for achievable tasks, deliver quickly and learn by doing.

Like with any holistic digital transformation program, every organization needs to focus on people, platforms, processes, partnerships, products and customers. The key point in AI driven digital transformation is the focus on data accuracy, relevance and quality. The internal change management to ensure buy-in of the innovation is a must-have in the process.

Done well, AI tools can augment the intelligence within the organization's team to make it more efficient, innovative and effective and accelerate financial inclusion.

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