Enhancing Access to Financial Services through Digital Innovation – the role of Artificial Intelligence (AI) and Machine Learning (ML)

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Key Banking Problems

What are the unique key challenges facing banking in this digital transformational world today?

Legacy Technologies	Knowledge sitting in documents
• Expensive to run • Difficult to upgrade • Complexities on adding new services	• Data in papers • Scattered data between paper and digital

Banks are unable to make real-time decisions on:

- Customer behaviour
- Credit Scoring
- Onboarding processes
- Real-time transaction monitoring
- Personalised support, and more...

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Where are we coming from?
Do we remember the dark ages?

Think about how long it took to open a bank accounts!

How about trying to access files for customer profiling and decision making?

How long did it take to service customers?

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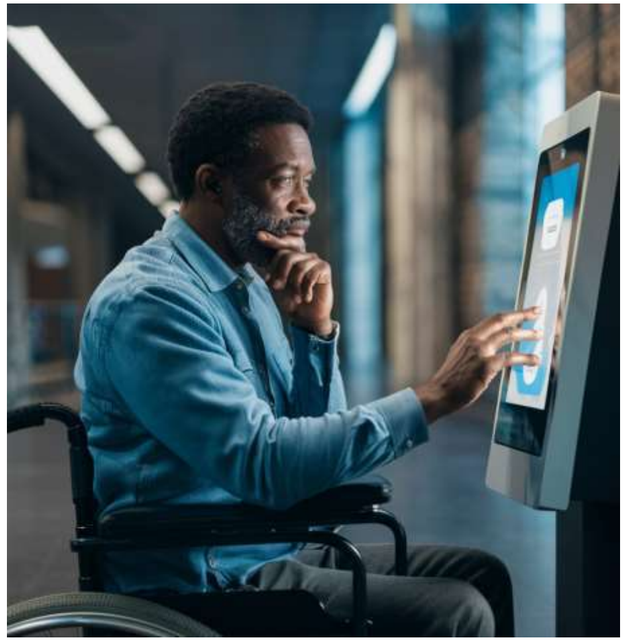
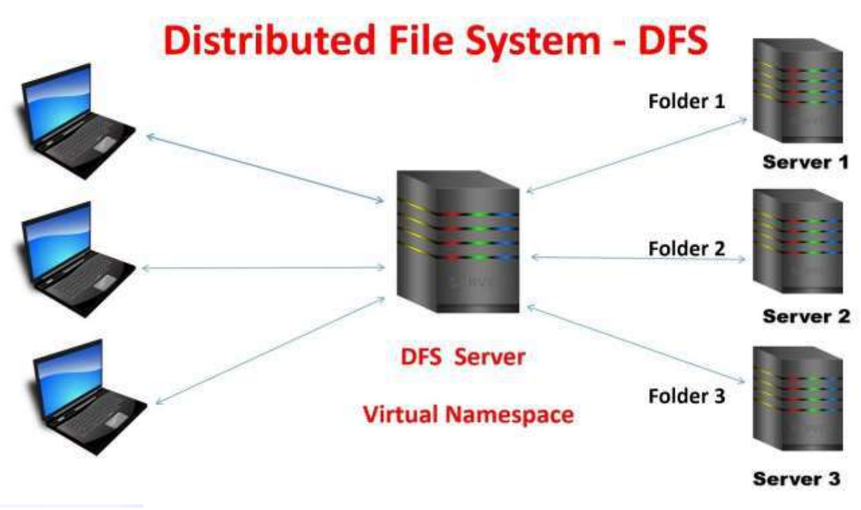
Where are we going?
Digital Transformation





What is AI?

Artificial intelligence (AI) is a field of study that focuses on creating machines that can learn, reason, and act like humans.

Machine learning is a form of artificial intelligence that can adapt to a wide range of inputs, including large sets of historical data, synthesized data, or human inputs.

– Mckenzie

AI can be used to perform tasks that are too complex for humans to do efficiently.

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How has AI and ML helped to bridge the Gap?

AI and Machine Learning (ML) are transforming the finance and banking industries in numerous ways, revolutionizing how financial institutions operate and how services are delivered.

Customer Service and Chatbots

- AI-powered chatbots and virtual assistants can support customer experience.
- Uses Natural Language Processing to understand and respond to customer inquiries, providing immediate assistance.
- **Benefits:** 24/7 Availability, Personalised support (they analyse customer preferences), Cost Efficiency (reduces FTE costs by automating processes that a staff could be doing).

Personalised Banking

- AI helps banks provide personalized services by analysing customer data and offering tailored recommendations or products.
- **Customized Financial Advice:** e.g., saving tips, investment opportunities, etc.
- **Behavioural Insights:** AI can predict customer needs based on transaction history and behaviour, such as suggesting loans, insurance products, or credit cards.
- **Smart Savings Programs:** ML can help customers save by identifying spending patterns and suggesting automatic savings based on their monthly expenditure.

Fraud Detection & Prevention

AI and ML are widely used in detecting fraudulent activities. AI models can detect unusual or suspicious behaviors that deviate from the norm by analysing transaction patterns. These models continuously learn from new data, allowing them to improve their detection capabilities over time. Some common uses include:

- **Real-time Fraud Detection** as they occur.
- **Anomaly Detection:** Spotting unusual patterns in spending, account access, or transactions.
- **Behavioural Analytics**: Monitoring user behaviours and flagging anomalies, such as logging in from different locations or unusual transaction sizes.

How has AI and ML helped to bridge the Gap? 2/3

Operational Efficiency and Automation

AI can significantly improve operational efficiency in banking by automating routine processes:

- **Document Automation:** AI-driven optical character recognition (OCR) and NLP can process and extract data from large volumes of paperwork, reducing manual effort.
- **Process Optimization:** Machine learning models can predict bottlenecks in operations and recommend process improvements to enhance efficiency.
- **Robotic Process Automation:** AI is also used in robotic process automation to streamline tasks such as data entry, report generation, and transaction processing.

Credit Scoring and Risk Assessment

Providing access to credit and increasing inclusion. AI and ML allow banks and financial institutions to assess creditworthiness more accurately. AI-driven models can consider a broader range of variables, such as:

- **Alternative Data:** Social media activity, transaction history, and even online behaviour can help assess a customer's risk profile.
- **Dynamic Credit Scoring:** ML algorithms continually learn and adapt to economic changes, offering more accurate and personalized credit assessments.
- **Improved Risk Management:** AI can predict which customers are most likely to default on loans, allowing for better risk management strategies.

Regulatory Compliance

In the heavily regulated banking industry like Tanzania, AI can assist in ensuring compliance with complex regulations:

- **Self Service & Automated KYC (Know Your Customer):** AI helps automate the customer verification process, ensuring regulatory compliance while improving efficiency.
- **AML (Anti-Money Laundering) Detection:** Machine learning models can help identify potential money laundering activities by analysing transaction data.
- **Monitoring Regulatory Changes**: AI systems can track new or changing regulations and alert compliance teams about necessary adjustments.

How has AI and ML helped to bridge the Gap? 3/3

Predictive Analytics & Forecasting

AI and machine learning are invaluable in predicting market trends, financial outcomes, and customer behavior:

- **Financial Forecasting:** AI models analyze historical data to forecast revenue, expenses, and cash flow more accurately.
- **Predicting Customer Needs:** ML algorithms analyze past behavior and trends to predict future customer needs, enabling more proactive service.

Some Fintechs using AI and ML

onafriq

Uses AI & ML tools for fraud detection & prevention, Sanction screening, lead generation bots, predictive analytics and forecasting of remittance trends.

ramani

Uses AI tools to manage supply chains by creating visibility in areas such as inventory management, point of sales and procurement softwares.

Tembo

Uses AI & ML tools for fraud detection & prevention.

CREDABLE™

Uses AI and ML for credit scoring and fraud detection & prevention.

Dawa MKONONI

Uses AI & ML tools data driven purchases of medicine and Credit scoring for credit financing to help healthcare providers manage cash flow efficiently

SARAFU
ENABLING OPPORTUNITIES

Enhanced fraud protection through AI

Opportunities & Challenges of AI & ML in the Tanzanian Market

Opportunities	Challenges
Job creations • Data Analysts • Data Scientists • Business Intelligence Analysts • Data Governance and Quality Officers **Partnerships** with Fintechs to help with the legacy softwares in embedding AI and ML in banking. **Saving the Climate:** Moving from paper to paperless through digitising data. **Reduced Operational Costs costs** due to branchless and digital banking + automation of processes and services + less FTE.	**Legacy Systems** transformation costs. **Data Quality:** ”Garbage in = Garbage out” **Data Privacy and Security:** Financial institutions must ensure that sensitive customer data is protected when using AI-driven systems. **Bias and Fairness:** Machine learning algorithms can sometimes perpetuate biases, leading to unfair outcomes in credit scoring, loan approvals, or investment recommendations. **Regulatory Challenges:** Financial regulations may lag behind technological advancements, posing challenges for AI adoption in banking. **Culture & Change Management.** **Demand Side (Access):** IDs (registering to formal channels), Phones & Smartphones (Accessing digital channels).

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Conclusion

AI and ML are transforming financial services by driving efficiency, enhancing security, and democratizing access to banking solutions.

As these technologies continue to evolve, financial institutions must embrace innovation while addressing ethical considerations and data privacy concerns.

By leveraging AI and ML strategically, the industry can create a more inclusive, secure, and customer-centric financial ecosystem.

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Thank you. Asante.

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