



# **Harnessing Emerging Technologies as a catalyst for Growth**

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# Questions we will address

What are the most transformative technologies in retail banking today?

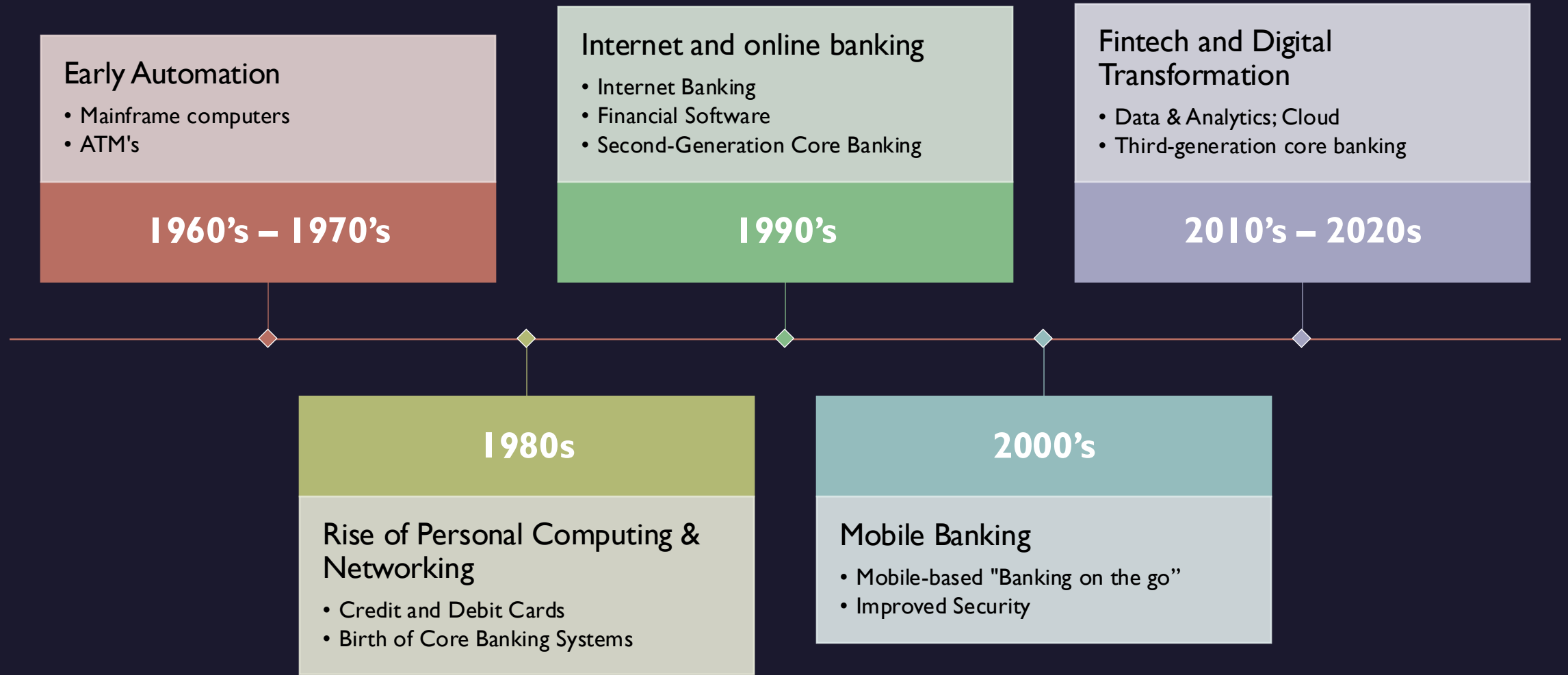


How can financial institutions use these technologies to accelerate growth?



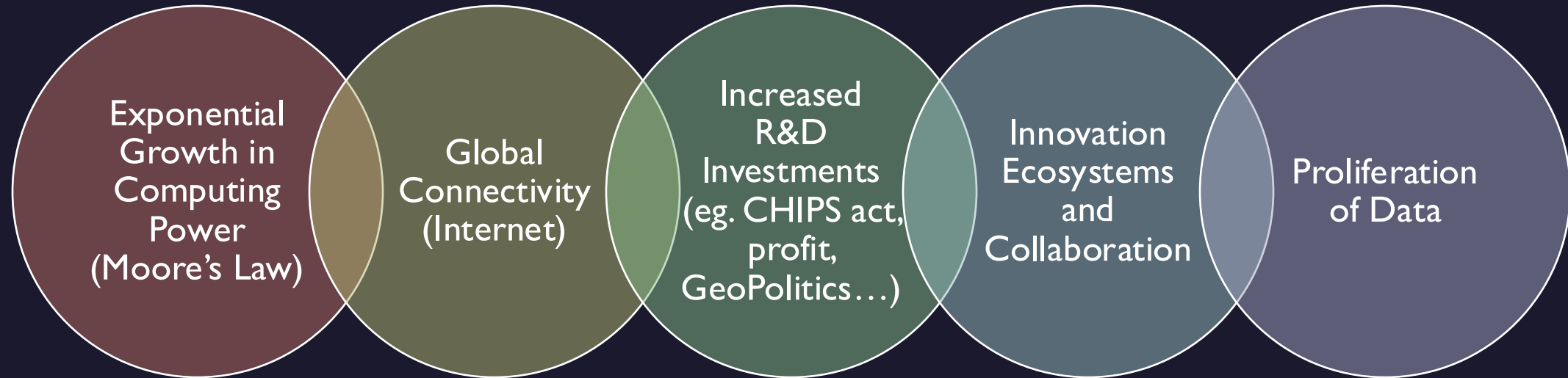
What best practices ensure successful technology adoption?

# From a cautious approach to gradually increasing Adoption: Technologies Role in Banking 1960 - 2020





# The rate and pace of technological innovation is increasing, driven by:



# Technology Trends



## The AI Revolution

Generative AI  
Applied AI  
Industrializing machine learning



## Building the digital future

Next-generation software development  
Digital Trust and cybersecurity



## Compute and connectivity frontiers

Advanced connectivity  
Immersive-reality technologies  
Cloud and edge computing  
Quantum Technologies



## Cutting edge engineering

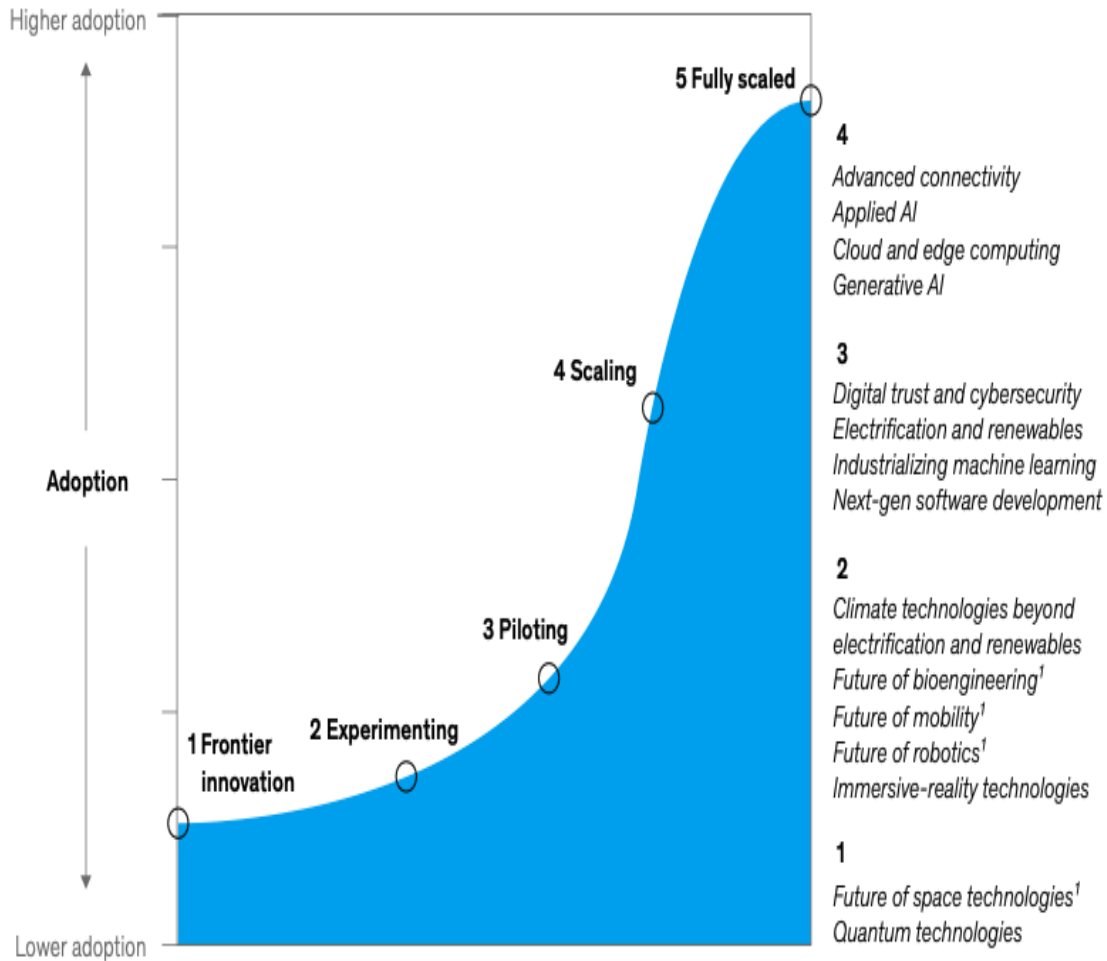
Future of robotics  
Future of mobility  
Future of bioengineering  
Future of space technologies



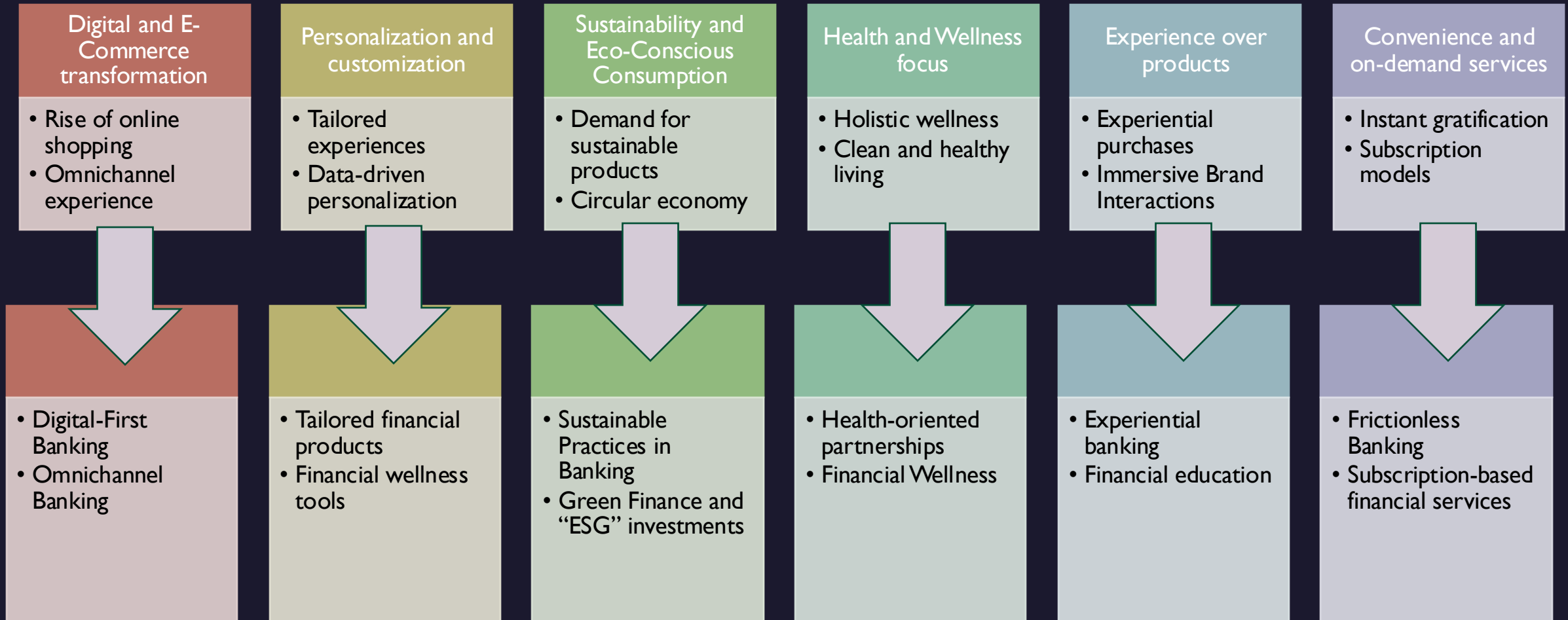
## A sustainable world

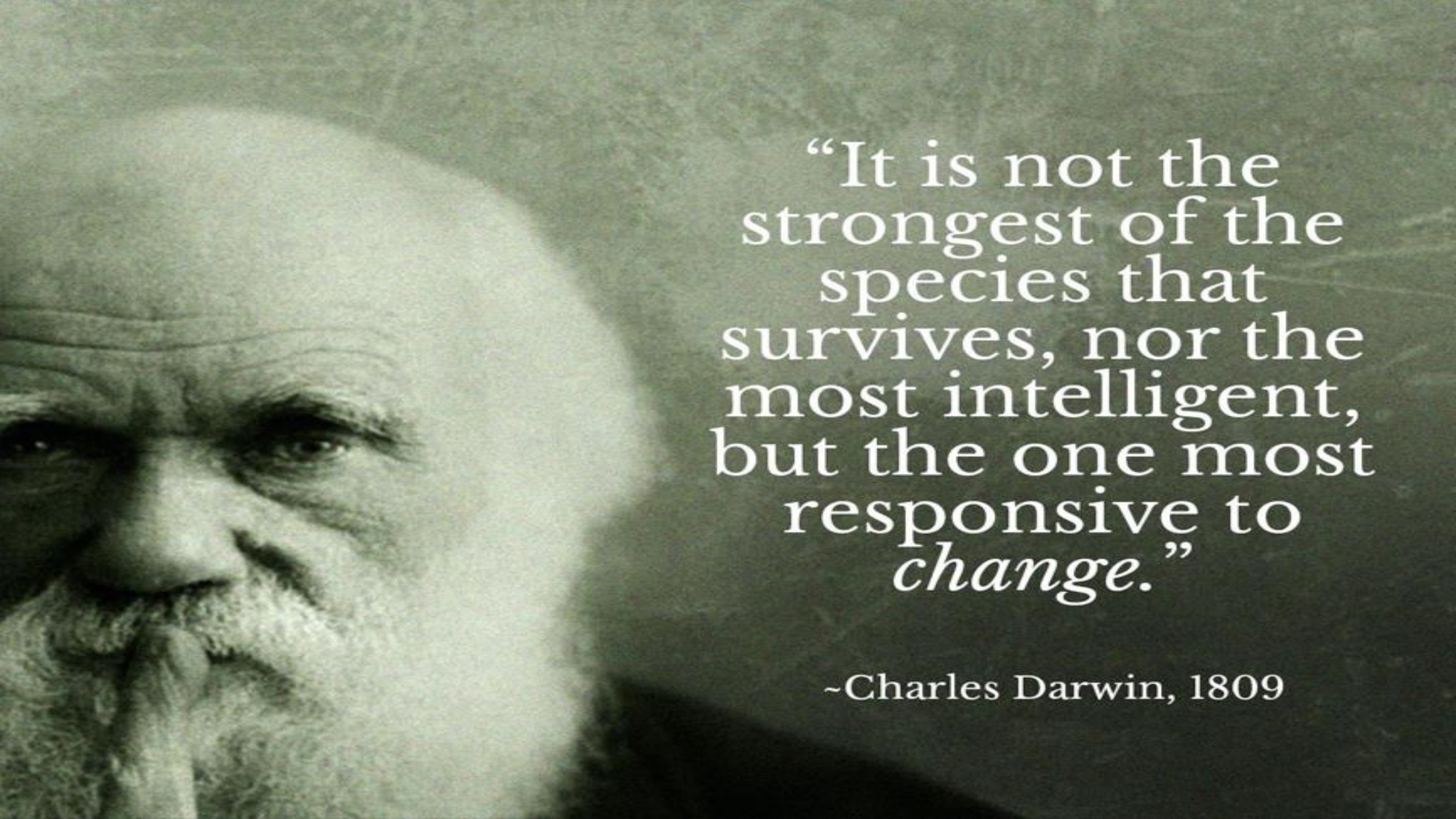
Electrification and renewables  
Climate technologies beyond electrification and renewables

Adoption curve of technology trends, adoption score



# Consumer Trends & Implications for Banking





“It is not the  
strongest of the  
species that  
survives, nor the  
most intelligent,  
but the one most  
responsive to  
*change.*”

~Charles Darwin, 1809



# Key emerging technologies for retail banking

Analytics & Big  
Data, Cloud

Artificial  
Intelligence (AI)

Generative AI

Cybersecurity

Business Process  
Automation

Open Banking /  
Banking as a  
Service / White &  
private label

Banking of things  
(BoT)

Immersive  
Technologies

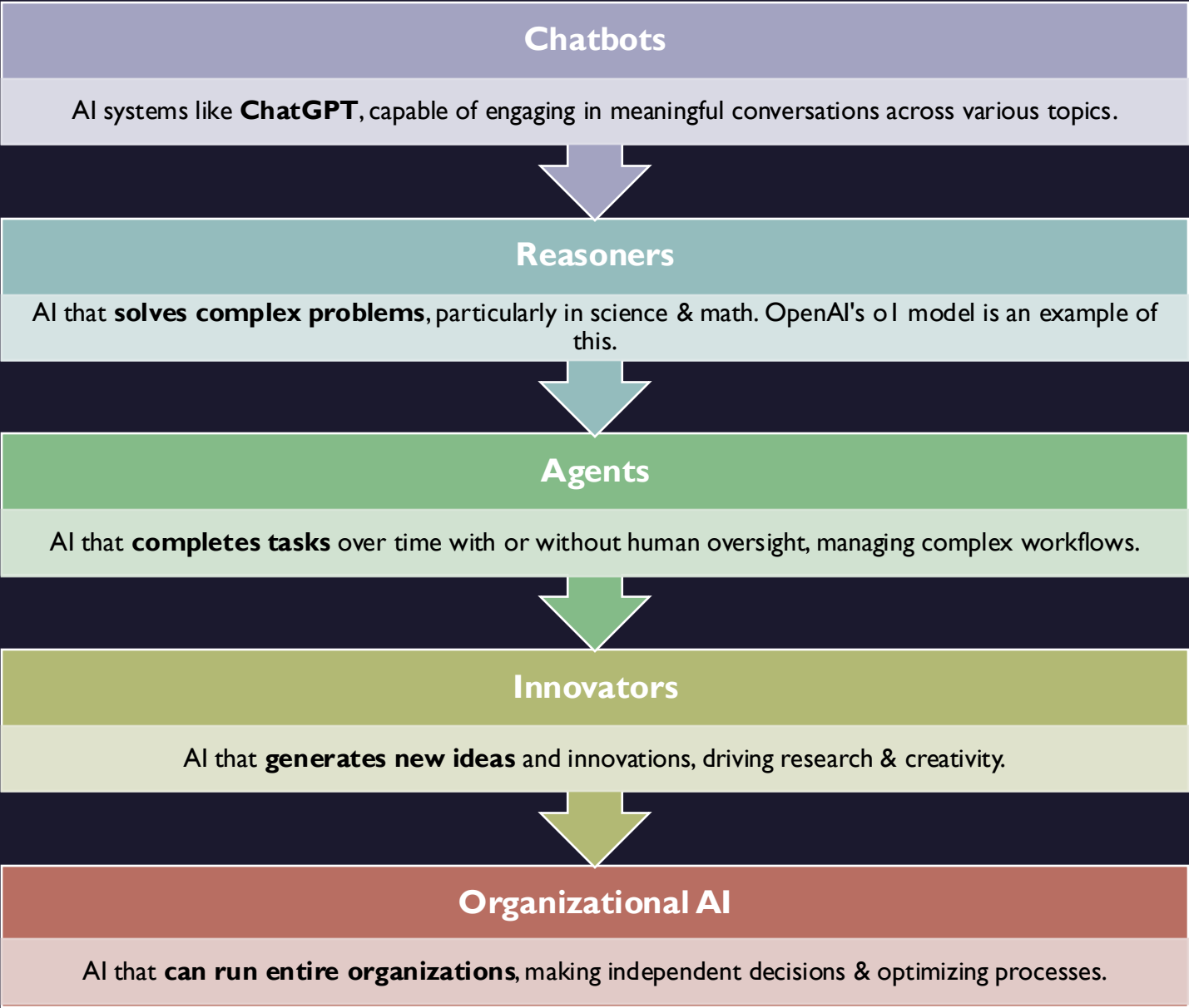
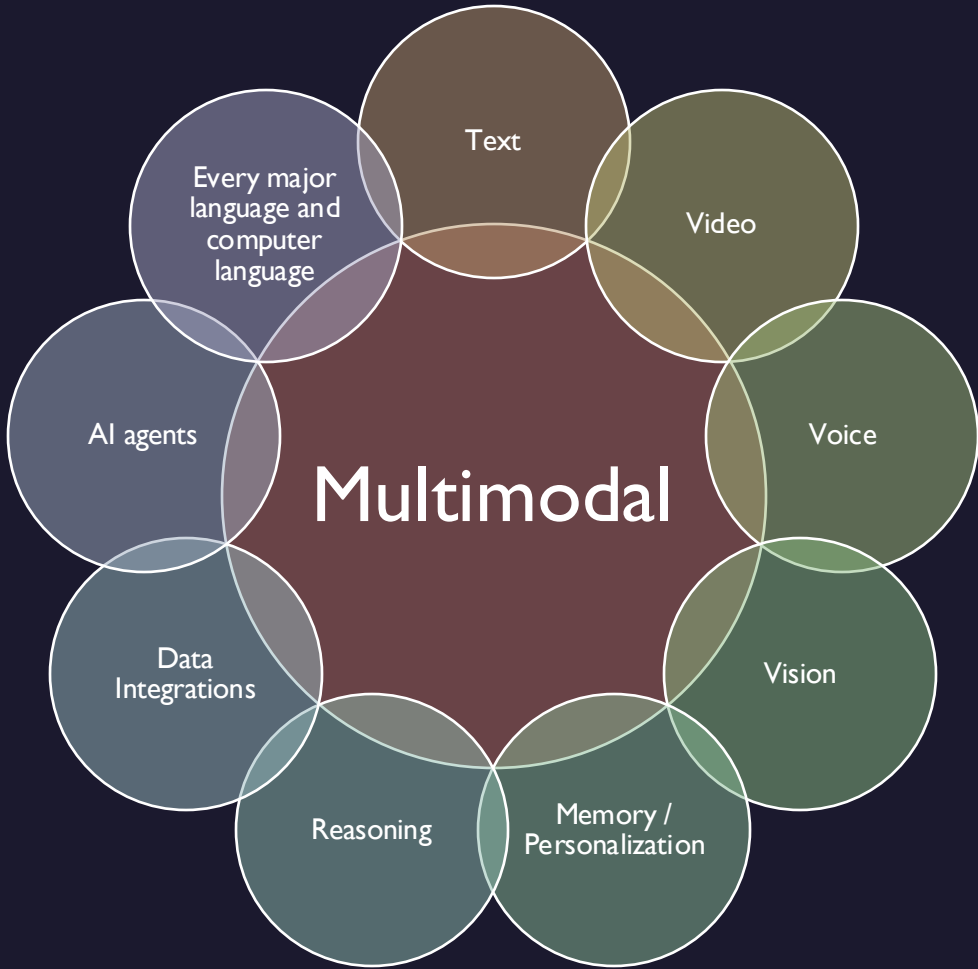
Blockchain /  
Decentralized  
Finance (DeFi) /  
Crypto

RegTech

Quantum  
Computing



# Artificial Intelligence Trends – Multimodal & Agents



# How can these emerging technologies help drive growth?



# Use cases

## AI

- **Operational Efficiency** (~ 25 use cases)
- **Client Experience & enhanced and new products / services** (~20 use cases)
- **Risk Management**

## Generative AI

- **Content generation and personalization**
- **Customer support** (e.g. Chatbots)
- **Financial document search and synthesis**
- **Fraud detection and prevention**
- **Financial forecasting and analysis**

## Business Process Automation

- **Customer service automation**
- **Workflow and Process automation**
- **Financial process automation**
- **HR and administrative task automation**
- **Data management and analytics**

## Open Banking

- **Open Banking:** Personal financial management; Enhanced credit scoring and lending.
- **BaaS:** Embedded Finance in non-financial platforms; Niche financial products for specific markets.
- **White Label/Private Label:** Branded banking services by non-banking entities; Rapid deployment of financial products



# Use cases..

## Banking of Things

- **Automated Payments**
- **Personalized Financial Advice**
- **Fraud Detection**
- **Enhanced Customer Experience**
- **Smart Homes and Appliances**

## Immersive technologies

- **Virtual Branches**
- **Financial Education and Planning**
- **Product Demonstrations**
- **Customer Service and Support**
- **Marketing**

## Blockchain

- **Cross-Boarder payments and remittances**
- **Identity Verification KYC Compliance**
- **Loan and Credit Management**
- **Fraud reduction and security**
- **Interbank clearing and settlement**

## RegTech

- **Compliance Management**
- **Risk Management**
- **Identity Management and Controls**
- **Regulatory Reporting**
- **Transaction Monitoring**

# Real-World Applications

## AI:

- **Bank of America:** Developed Erica, an AI-powered virtual assistant that provides personalized financial guidance, such as sending bill reminders and offering spending updates.
- **JPMorgan Chase:** Leverages AI to analyze legal documents and extract important data points, saving thousands of hours of manual review.
- **Wells Fargo:** Created an AI-powered chatbot to guide customers through the mortgage application process and provide personalized financial advice.

## Generative AI

- **Morgan Stanley:** Launched an AI assistant based on OpenAI's GPT-4 that provides financial advisors with instant access to a vast knowledge base of research reports and documents.
- **Commonwealth Bank of Australia:** Uses generative AI to provide customers with personalized experiences, such as customized smartphone notifications.
- **Wells Fargo:** Developed an AI-powered virtual assistant named Fargo that answers customer queries and executes tasks such as providing spending insights and transaction details.

## Business Process Automation:

- **HDFC Bank:** Used AutomationEdge RPA to automate 15+ business processes, including loan applications, resulting in a 50% reduction in processing time.
- **Mashreq Bank:** Automated 100+ IT use cases with AutomationEdge bots, resolving 10,000+ tickets per month and achieving a 75% improvement in customer satisfaction.
- **Old Mutual:** Reduced customer onboarding time ten-fold by using Bizagi to orchestrate processes through a simplified data model.

## Open Banking / Banking as a Service (BaaS) / White & Private Label

- **Crezco:** Offers a quicker checkout solution and automated payment reconciliation by partnering with Yapily, an open banking provider.
- **An Post:** Provides users with a personalized digital banking experience that facilitates budgeting and savings tools.
- **GF Money:** Makes underwriting decisions in less than ten minutes using open banking-enabled affordability assessments.

# Real-World Applications...

## Banking of Things (BOT)

- **HSBC:** Collaborated with SAS Fraud Management to use big data and IoT to detect fraudulent ATM transactions.
- **FitPay:** Enables customers to make quick payments with a flick of their wrist using wearable devices.
- **Axis Bank:** Uses smart glasses to detect fake checks by connecting them to a computer and automatically verifying the check's credentials.

## Immersive Technologies

- **BNP Paribas:** Developed a virtual reality banking app that allows customers to access their transaction history and explore mortgage options in VR<sup>49</sup>.
- **GTE Financial:** Created a virtual reality experience where users can create an avatar and explore the credit union's financial services<sup>49</sup>.
- **Bank of Kuwait:** Uses VR to design new branch locations, allowing stakeholders to virtually walk through the proposed design<sup>49</sup>.

## Blockchain / Decentralized Finance (DeFi) / Crypto

- **MoneyGram:** Partnered with Stellar Development Foundation to create a blockchain-powered platform for cross-border payments.
- **We.Trade:** Backed by HSBC and Société Générale, this platform uses blockchain to automate trade finance processes.
- **UBS:** Launched its first tokenized fund on the Ethereum blockchain, allowing investors to trade fund shares as digital assets.

## RegTech

- **State Bank of India (SBI):** Uses BearingPoint RegTech's Abacus360 Banking solution to manage regulatory reporting and risk management.
- **Vistra:** Opts for DAC6 tax reporting solution FiTAX to comply with tax regulations.
- **Bank A:** Acquired an off-the-shelf fraud monitoring solution and tailored it to enhance fraud monitoring and detection capabilities.

## Quantum Computing

- **CaixaBank:** Replaced its legacy investment hedging solution with a hybrid approach involving quantum annealing, reducing compute times by 90%.
- **JPMorgan Chase:** Actively exploring quantum applications in finance, particularly in portfolio optimization and risk management.
- **Goldman Sachs:** Investing in quantum computing research to enhance financial modeling and risk analysis.

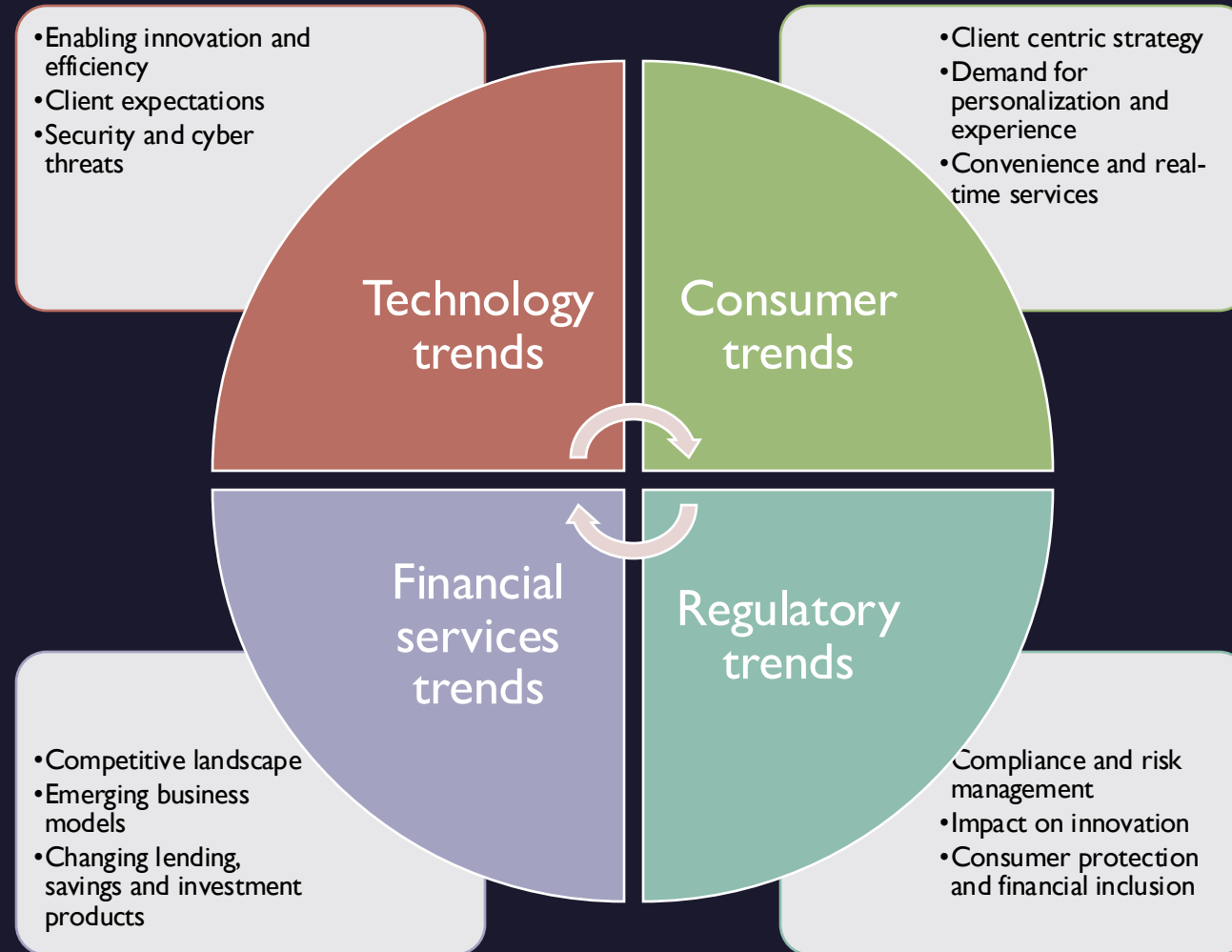


# A systematic way to maximize impact



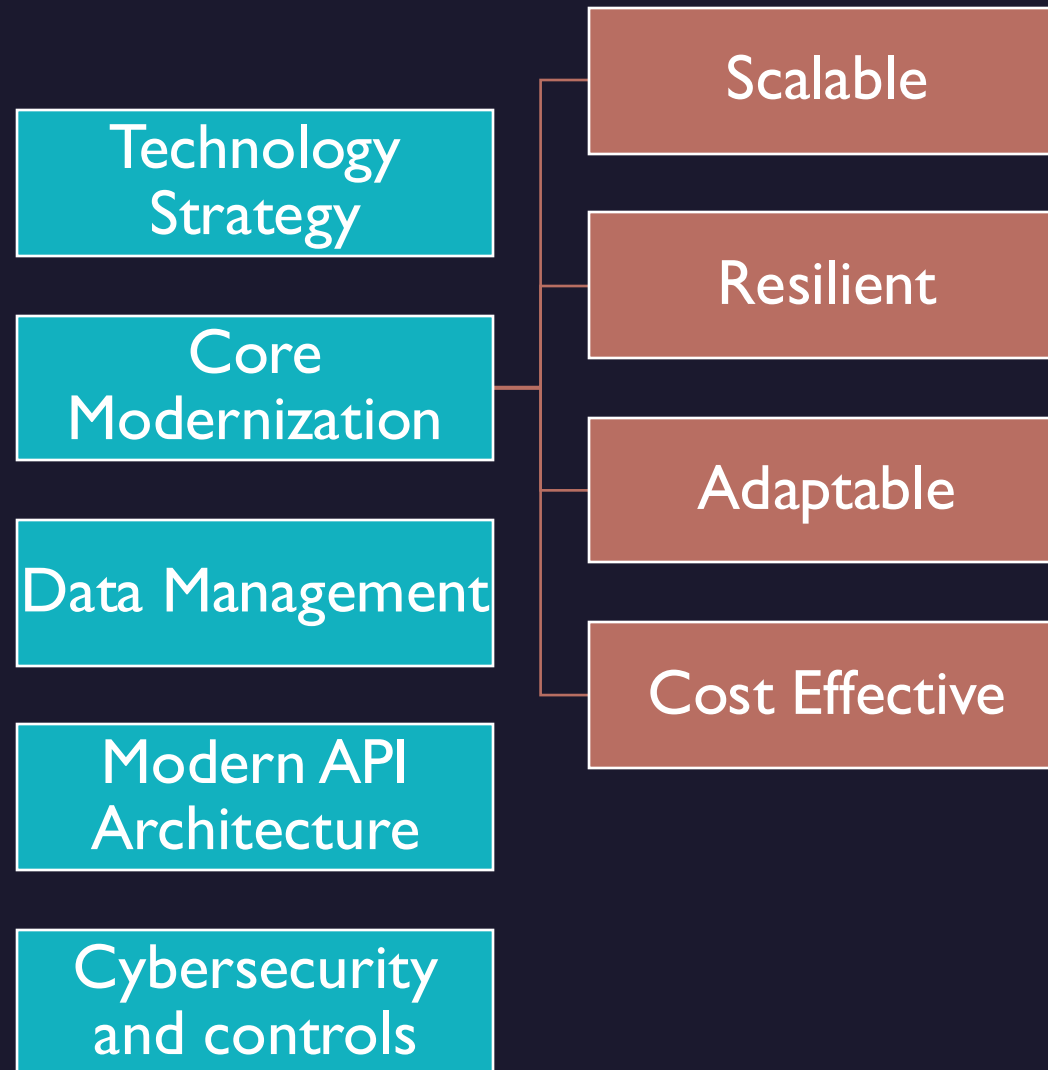
# 1 Business Strategy leads (not technology)

**When defining long-term strategy it is essential to understand the implications of key trends**



2

# Strengthen the core technology and data infrastructure





3

# Reimagine the customer engagement layer and rearchitect processes

Understanding the customers (Human-Centered Design)

Segmentation

Needs

Behaviors

Context

Preferences



Define client journeys and embed analytical outcomes within journeys



Reimagined engagement layer

Intelligent propositions

Seamless embedding within partner ecosystems

Smart servicing facilitated by fast, simple, and intuitive interactions

4

# Build the AI-powered decision-making layer across the customer life cycle (~20 use cases)

## Customer acquisition

- Hyper personalized offers
- Customer retargeting
- Propensity-to-buy scoring
- Channel mapping

## Credit decisioning

- Credit qualification
- Limit assessment
- Pricing optimization
- Fraud prevention

## Monitoring and collections

- Early-warning signals
- Probability of default / self-cure
- Value At Risk (VAR) based customer segmentation
- Agent-customer mapping

## Deepening relationships

- Intelligent offers (e.g., next product to buy)
- Churn reduction
- Channel propensity
- Fatigue rule engine

## Smart servicing

- Servicing personas
- Dynamic customer routing (channel, agent)
- Real-time recommendation engine
- AI-enabled agent review and training

## Digital Marketing

Email

SMS

Mobile App

Website

Branch

Contact Center

...

4

## Boost Productivity: Streamline Back-Office/Support functions with AI-Driven Efficiency and Effectiveness (~25 use cases)





# 5 Transform operating model



## People

- Training and development
- Change Management
- Talent acquisition
- Cultural alignment
- Leadership and vision



## Process

- Customer-centric design
- Human-Centered Design
- Agile methodology
- Risk Management
- Regulatory compliance
- Feedback loops



## Systems

- Robust IT infrastructure
- Data Management and Analytics
- Integration and Privacy
- Innovation and Testing Environment
- Technology Partnerships
- Scalability and flexibility



## Governance

- Tech-Savvy Board Members
- Ensure sufficient investment in technology/innovation
- Increased vigilance on cybersecurity and data privacy
- Ethical use of AI / Technology
- Technology Committee

# Safeguards

Ethical AI Framework



```
graph TD; A[Ethical AI Framework] --> B[Bias Monitoring and Mitigation]; B --> C[Data Privacy and Security]; C --> D[Transparent AI Use and Decision-Making]; D --> E[Human Oversight and Intervention];
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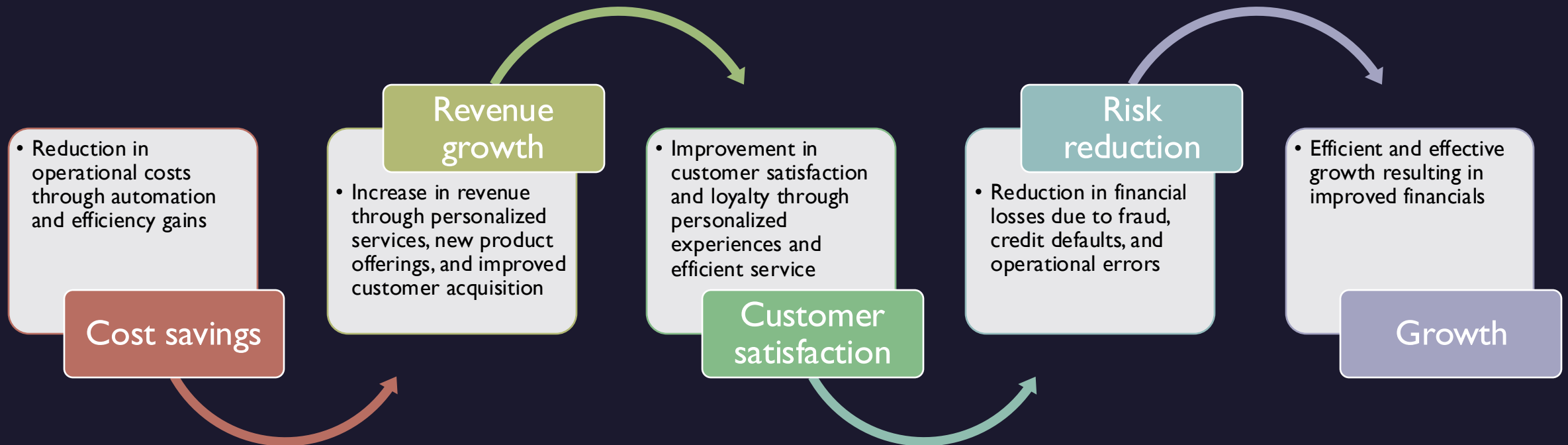
Bias Monitoring and Mitigation

Data Privacy and Security

Transparent AI Use and Decision-Making

Human Oversight and Intervention

# What is the expected return on investment (ROI) for emerging technologies and how do we measure it?







“There will only be two types of banks going forward: ones that thoughtfully infuse emerging technologies into their operations and the irrelevant ones!”





Closing Thought:

**Amara's Law** *“We tend to overestimate the effect of a technology in the short run and underestimate the effect in the long run”*

**We are in it for the long run ☺**

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