



**THE 10<sup>th</sup>**  
**CHIEF AUDIT EXECUTIVE CONFERENCE**

**“BEYOND ALL BARRIERS”**

16<sup>th</sup> – 18<sup>th</sup> NOVEMBER, 2021

ATLANTIS, THE PALM HOTEL, DUBAI

UNITED ARAB OF EMIRATES



# DIGITAL DISRUPTION IN INTERNAL AUDIT

**PRESENTED BY**



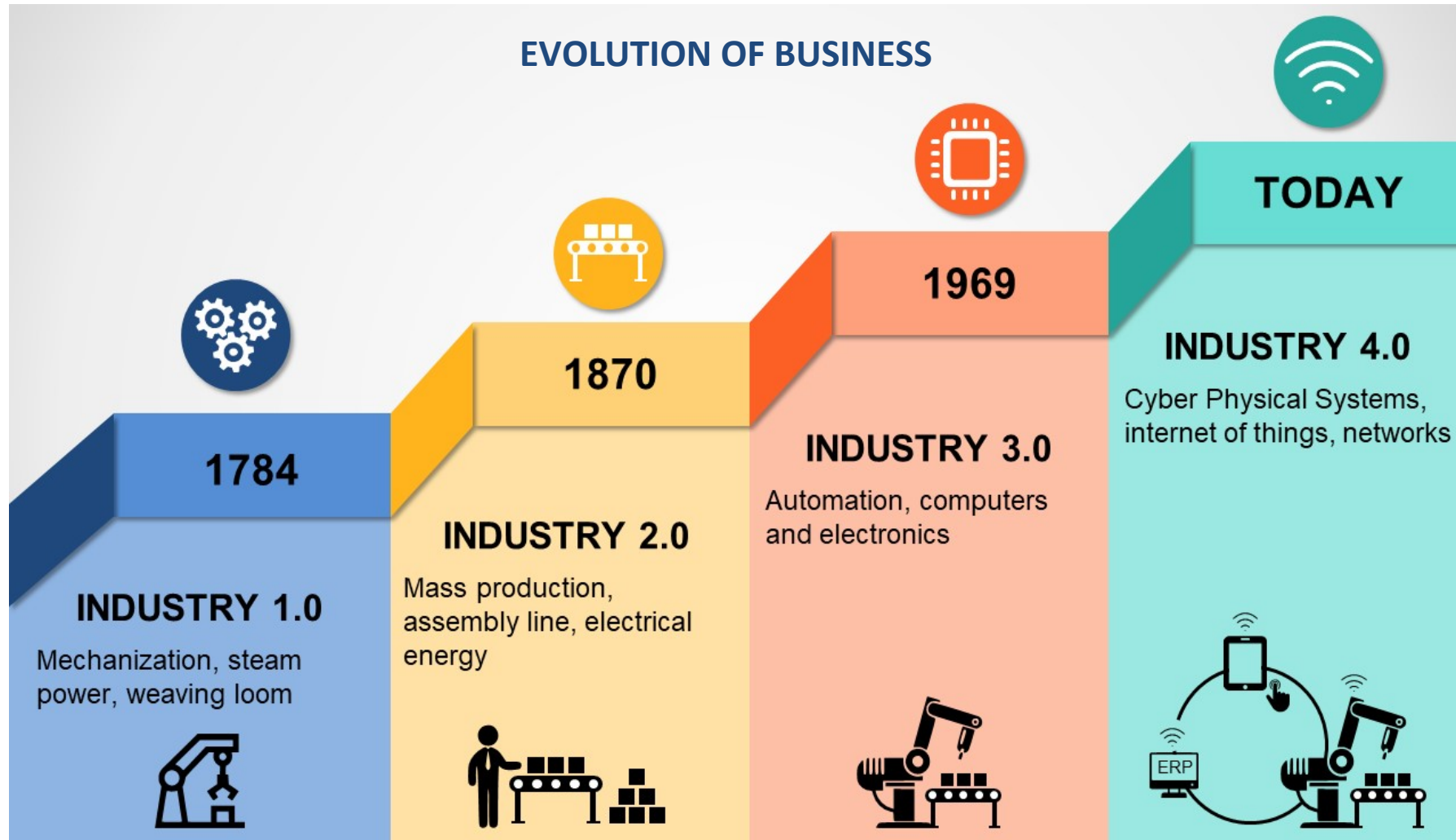
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**Partner- Strategy | Transformation | Automation | Cyber security**

**UHY James Chartered Accountants and Management Consulting**  
**AUDIT | TAX | ADVISORY | STRATEGY | RISK | TECHNOLOGY**

# INDUSTRIAL REVOLUTION





# DATA- THE NEW OIL

## Digital Disruption

### Social is Business



**86%** Stop doing business

**94%** Will pay more for great experience

**26%** Post negative comments

### Sophisticated Customers



"Engage me everywhere."

"Meet my expectations."

"Know me. Wow me."

"Understand and reward me."

### Cloud



2014 **51%** of workloads in the cloud

2020 **1/3** of all data in the cloud

**87%** of organizations using public cloud

### Data Explosion



**90%** Created within the last 2 years

**50X** Growth by 2020

2012 **9 Billion** Internet Devices

2020 **50 Billion** Internet Devices

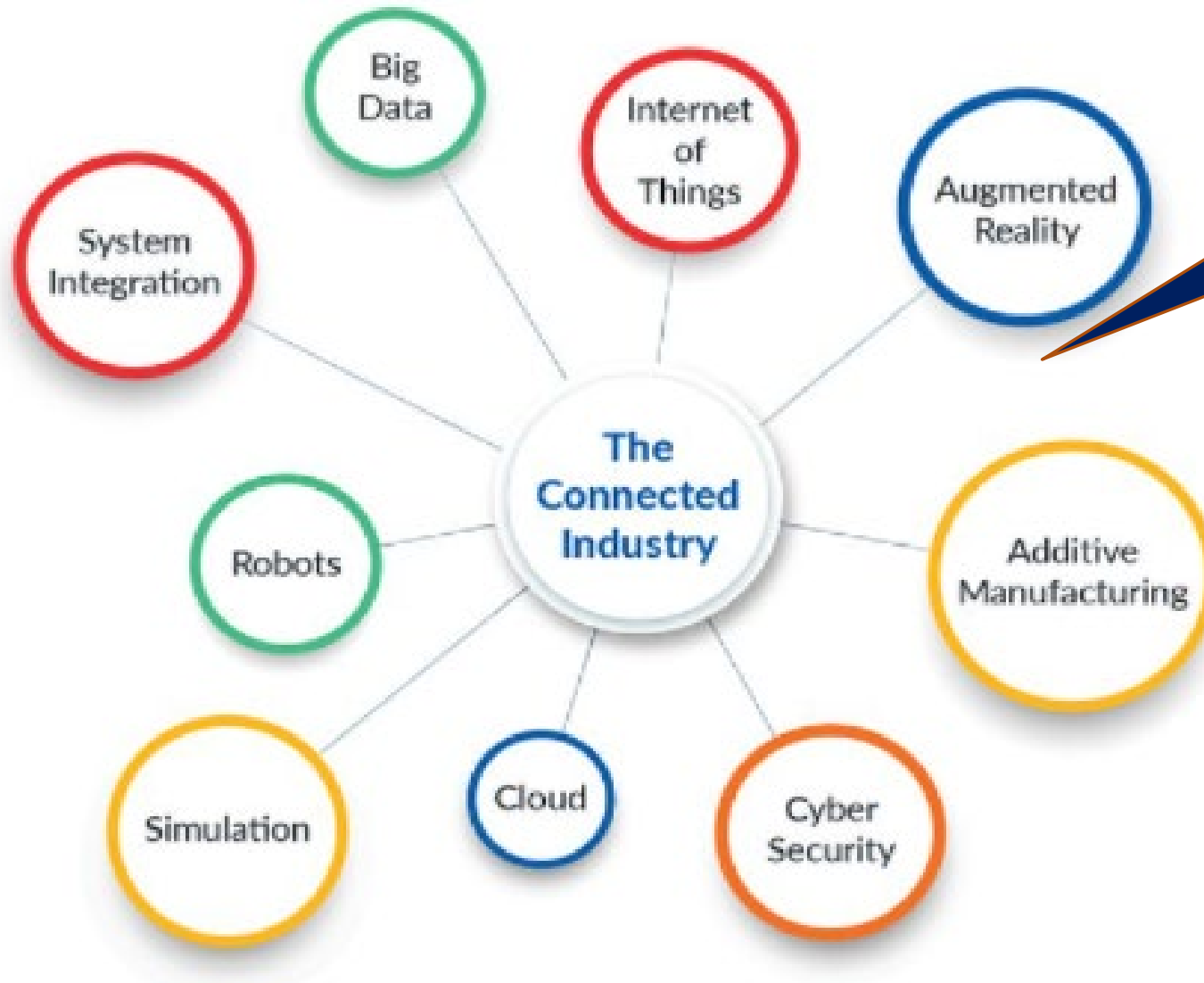
### Rise of Mobility



**50.3%** of ecommerce traffic coming from mobile

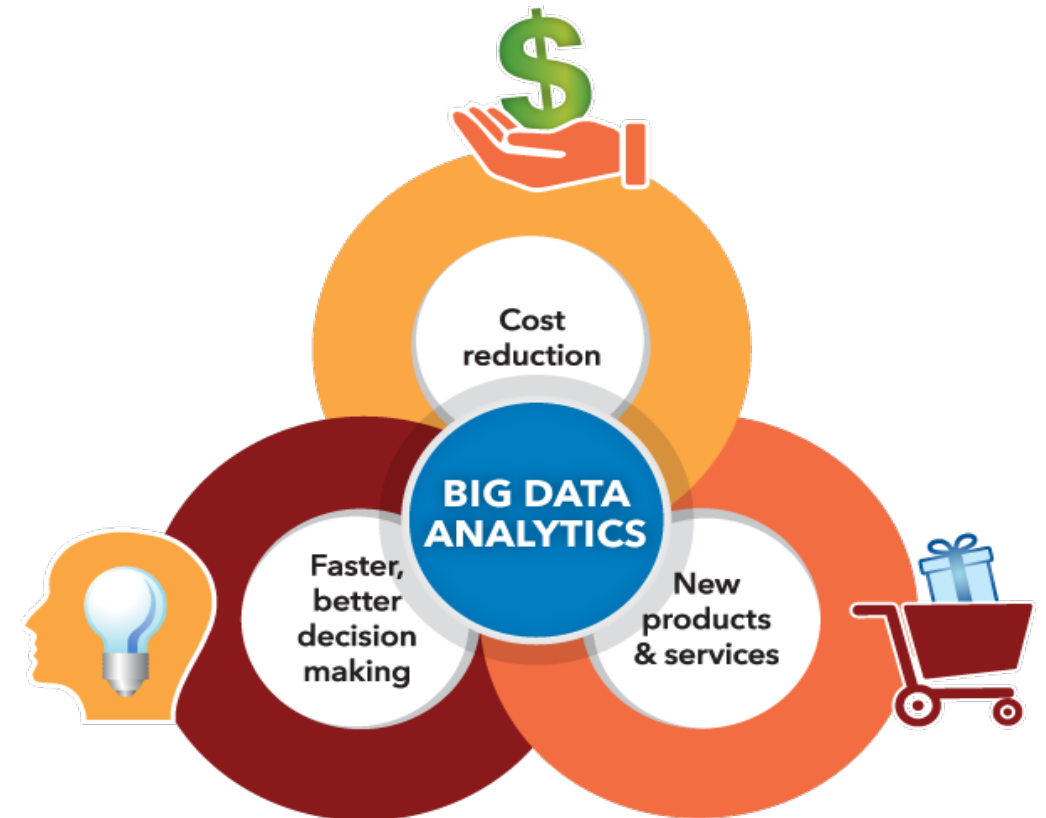
**78%** Mobile Data Growth

# DIGITAL DISRUPTION IN BUSINESSES

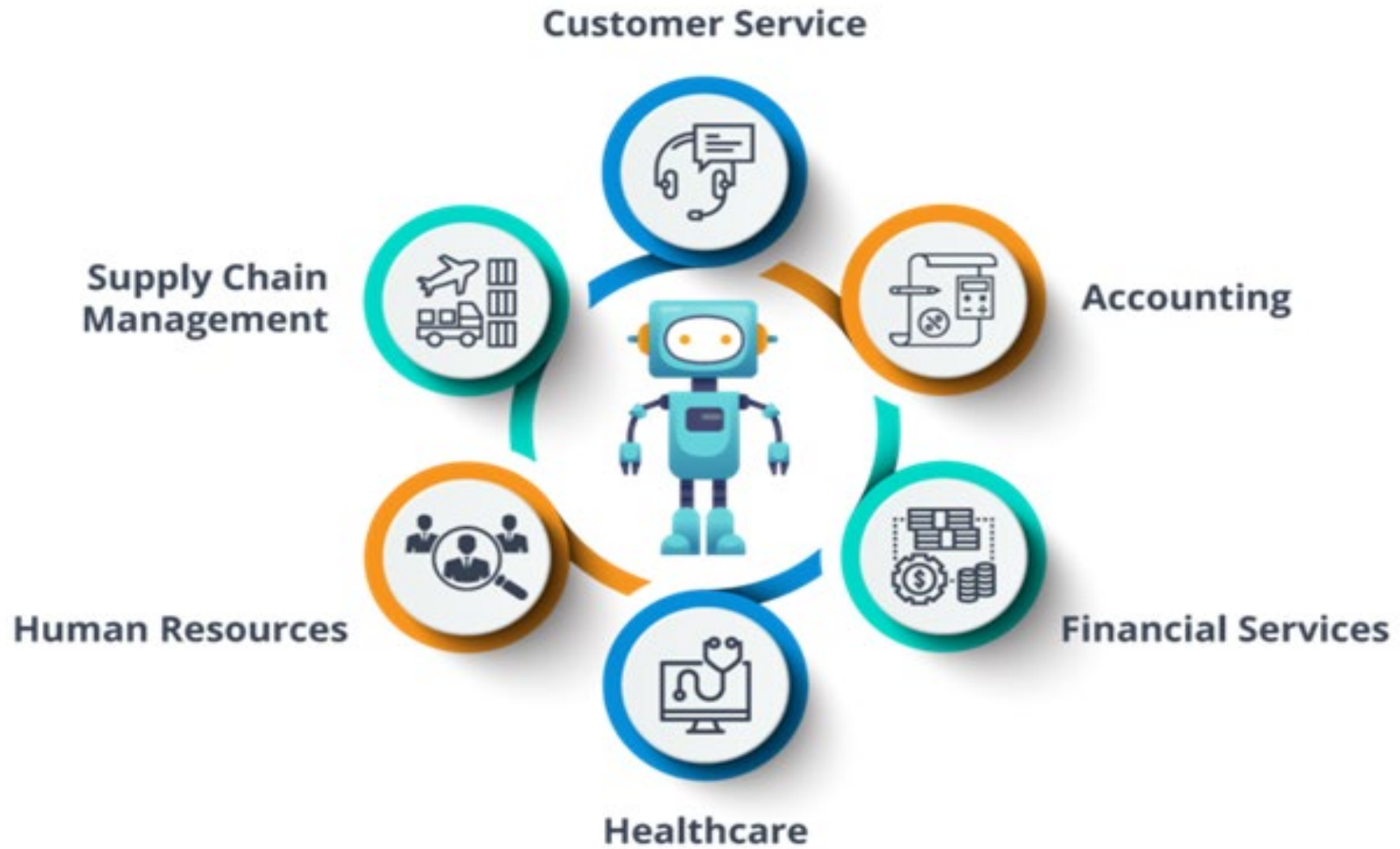


Technologies connected together for providing solutions to growing societal challenges and enabling business growth

# BIG DATA ANALYTICS

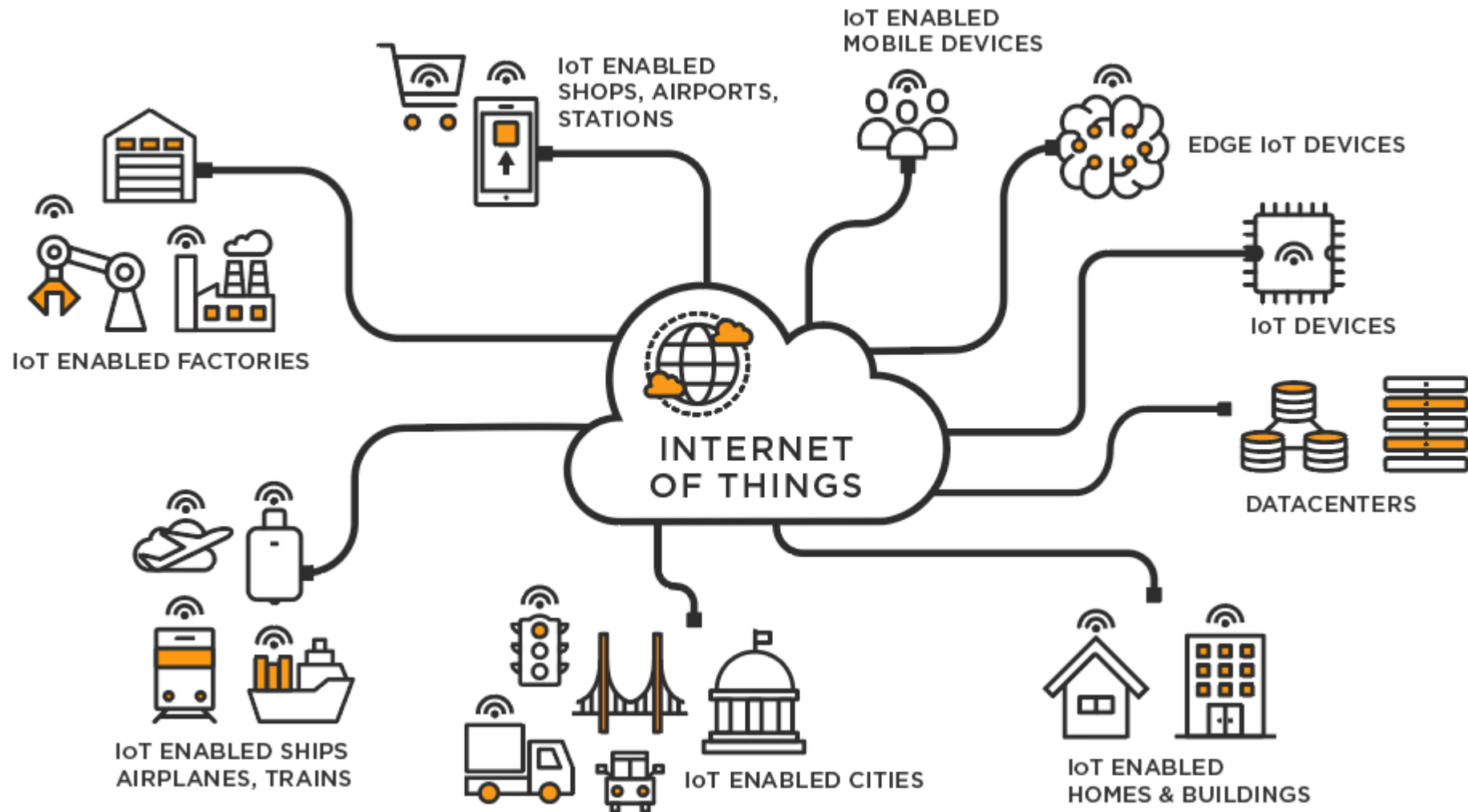


# INTELLIGENT AUTOMATION





# INTERNET OF THINGS



# BLOCKCHAIN ADOPTION





# CRYPTO CURRENCIES





# DRIVERLESS VEHICLES



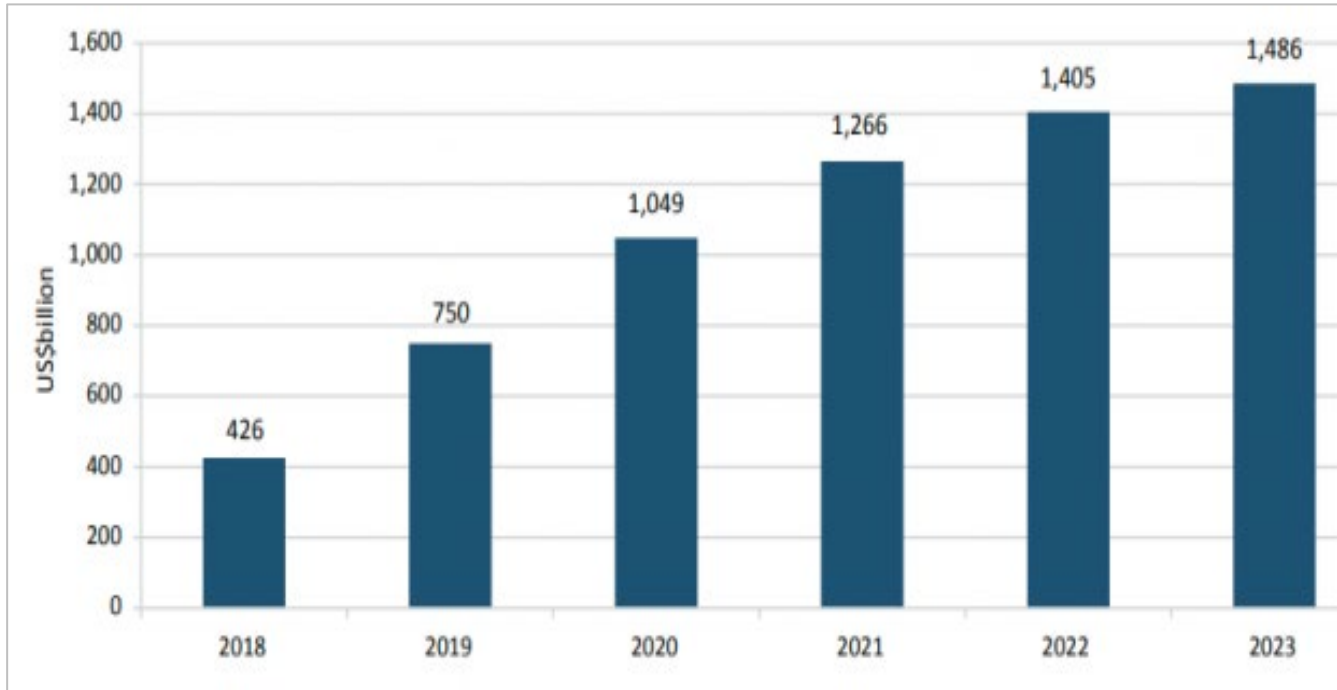


# ROBOT DOCTORS & ROBOTIC SURGERY



# ROBO ADVISORS- FINANCIAL SERVICES

**Overall Assets Under Management (AUM) by Robo Advisors ( in USD Billion)**



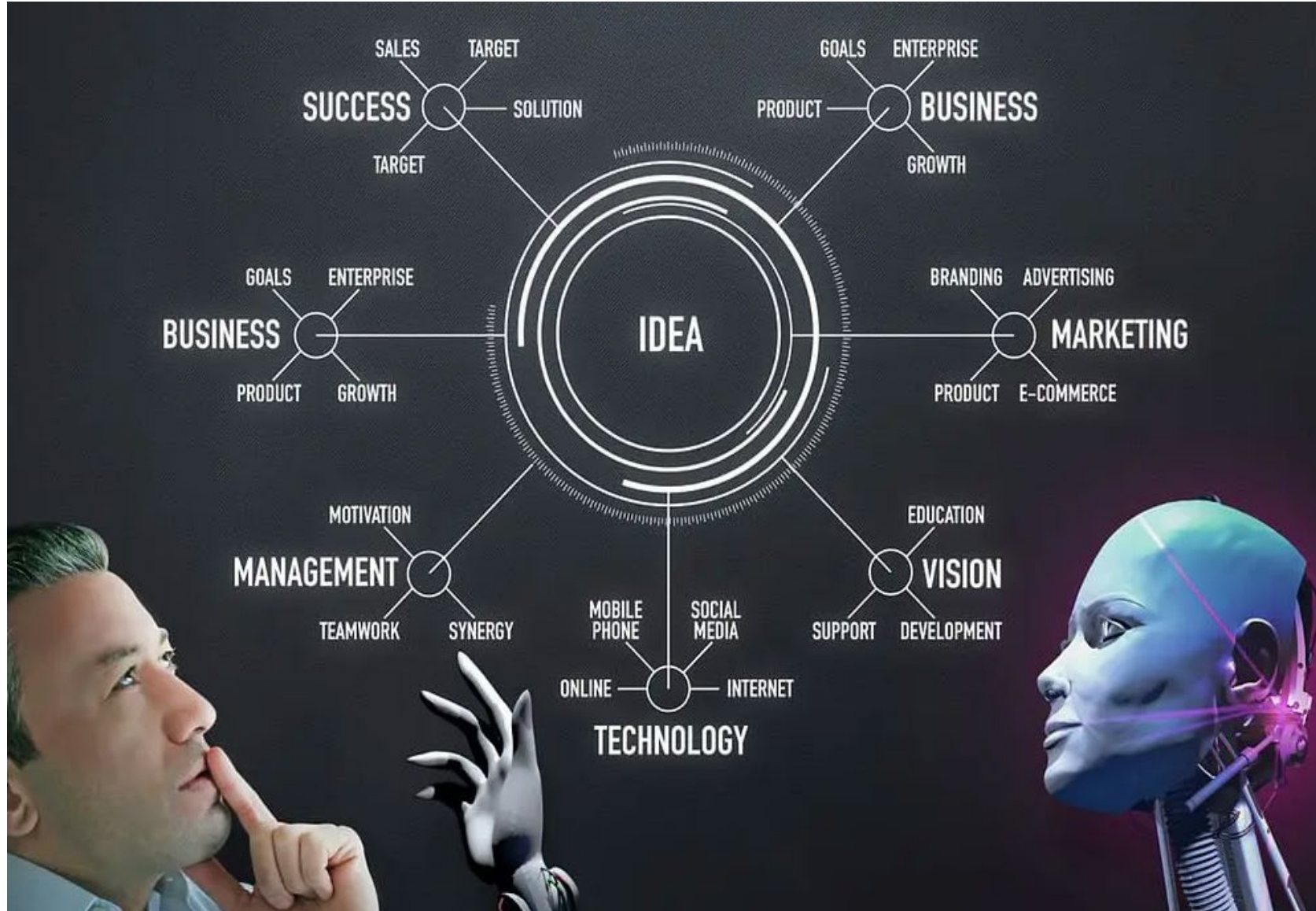
Source: Statista

**Top 5 Global Robo-Advisors by Assets Under Management (AUM)**

Robo-Advisor	AUM (USD Billion)	No of Individual Clients
Vanguard Personal Advisor Services	206.6	1.1 mill
Schwab Intelligent Portfolios	65.8	262 K
Betterment	26.8	615 K
Wealth front	21.4	307 K
Personal Capital Advisors	16.1	26 k

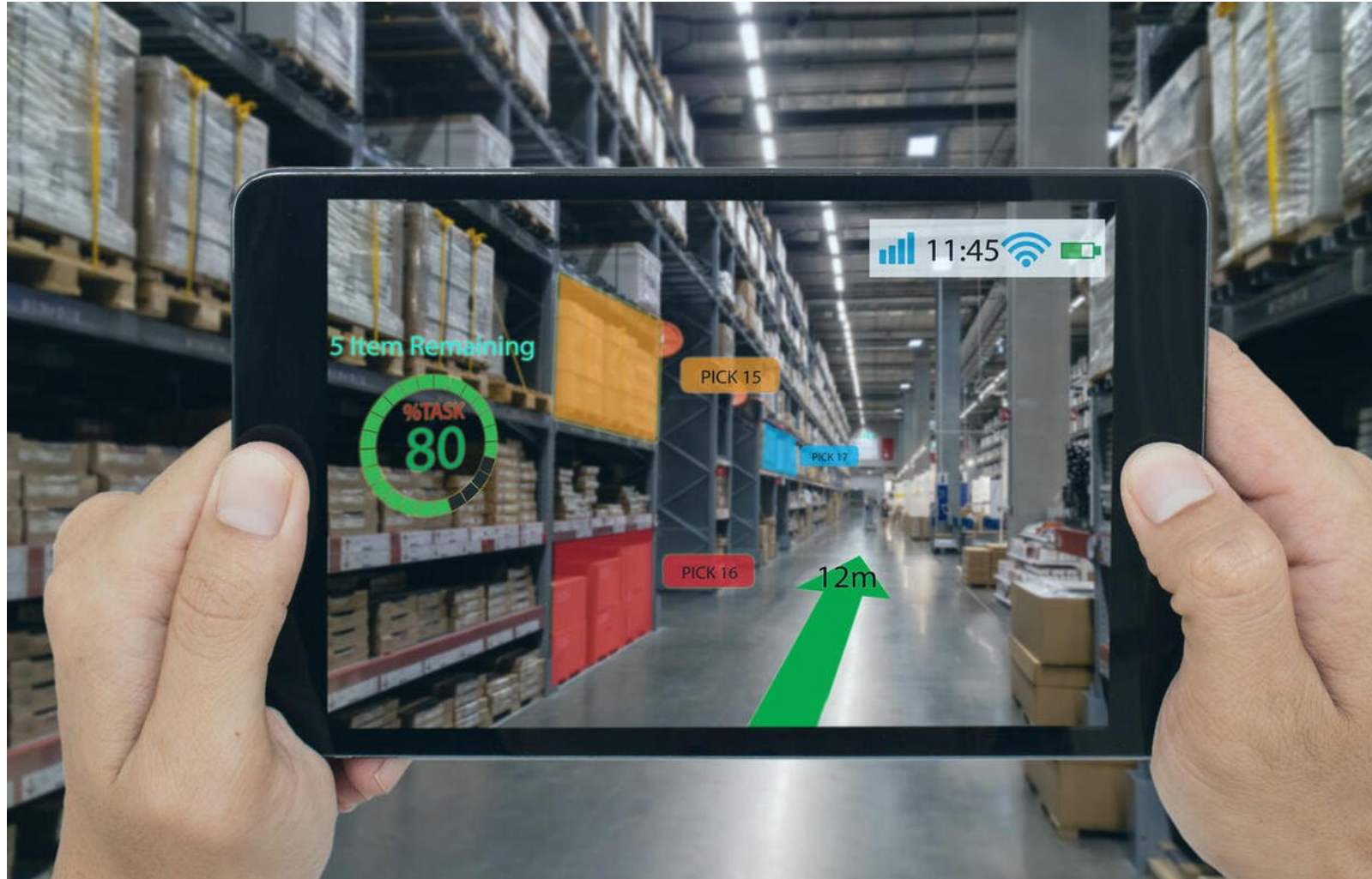
Source: Forbes

# ROBO ADVISORS



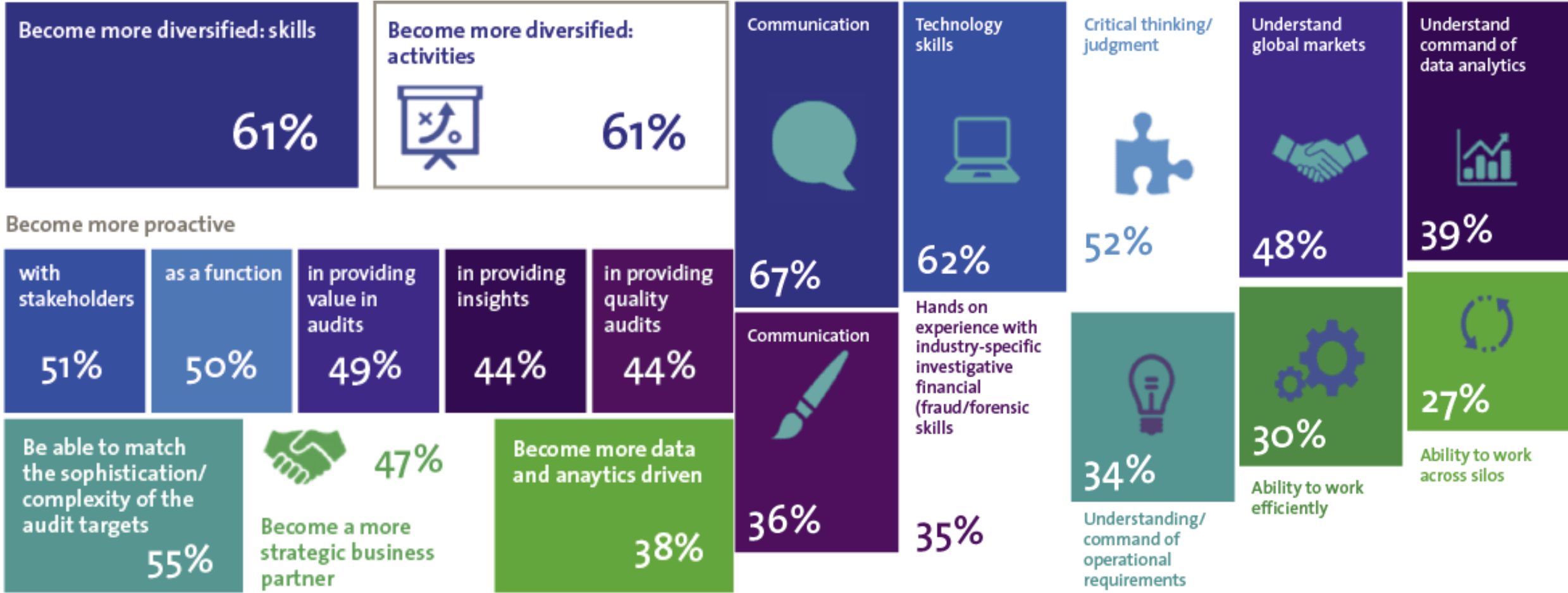


# AUGMENTED REALITY





# INDUSTRY EXPECTATIONS FROM AUDITORS



TECH

## Middle East facing 'cyber pandemic' as Covid exposes security vulnerabilities, cyber chief says

PUBLISHED SUN, DEC 6 2020 11:21 AM EST

Four of five organisations in UAE faced at least one 'cyber attack' in 2019 – study

A study by Cybersecurity Ventures predicts Cybercrimes will cost the world \$6 trillion a year by 2021.

### KEY POINTS

- UAE cyber chief warns Middle East region is facing a “cyber pandemic” as hackers take advantage of Covid-related digital adoption.
- The UAE has seen a 250% increase in cyberattacks this year, with phishing and ransomware incidents increasing in frequency.

**Over 100,000 cyber-attacks foiled in UAE last month, says TRA report**

# REGULATORY FRAMEWORK IN UAE



UAE CYBER SECURITY LAW

UAE Cyber Security Law



UAE CYBER SECURITY LAW

UAE Data Protection Law



مصرف الإمارات العربية المتحدة المركزي  
CENTRAL BANK OF THE U.A.E.



UNITED ARAB EMIRATES  
MINISTRY OF HEALTH & PREVENTION

مجلس الأمن السيبراني  
CYBER SECURITY COUNCIL



ADGM DATA PROTECTION REGULATION

ADGM Data Protection Regulation



Dubai International Financial Centre

DIFC DATA PROTECTION LAW

DIFC Data Protection Law



دائرة الصحة  
DEPARTMENT OF HEALTH  
ADHICS  
ABU DHABI - HEALTHCARE INFORMATION AND CYBER SECURITY STANDARD



هيئة الوطنية للأمن الإلكتروني  
NATIONAL ELECTRONIC SECURITY AUTHORITY  
إمارة الإمارات المتحدة  
NESASIA



DUBAI ELECTRONIC SECURITY CENTER  
مركز دبي للأمن الإلكتروني  
Dubai Electronic Security Center-Industrial Control Systems



IA- Electronic Insurance Regulation



هيئة الصحة بدبي  
DUBAI HEALTH AUTHORITY



هيئة تنظيم الاتصالات  
TRA  
TELECOMMUNICATIONS REGULATORY AUTHORITY



إمارة الإمارات العربية المتحدة  
هيئة الأوراق المالية والسلع  
SECURITIES & COMMODITIES AUTHORITY

## UAE CYBER LAW

Federal Law No. 2/2015 On Commercial Companies

UAE Law on Combating Cybercrimes - Federal Decree Law No. 5/2012 on Combating Cybercrimes (the "Cyber Crimes Law") **VICARIOUS LIABILITY**

A strict liability on employers (e.g. Company; Managers; Supervisors) for the wrongdoings of their employees. Employer will be held liable for any wrong-doing committed while an employee is conducting their duties in the course of their employment

# Penalty

**Legal & Regulatory Clause**

Imposes a number of duties on directors and managers of companies, which include duties to exercise reasonable care and act in the best interests of the company.

Judge's discretion



## DIFC DATA PROTECTION LAW : SAMPLE PENALTIES FOR NON-COMPLIANCE

Contravention	Maximum Fine (USD)
Failing to comply with the requirements specified under Article 29 of the Law made for the purpose of this Law	\$75,000
Failing to comply with the requirements specified under Article 30 of the Law made for the purpose of this Law	\$75,000
Failing to comply with the requirements specified under Article 31 of the Law made for the purpose of this Law	\$75,000
Failing to comply with the requirements specified under Article 32(3) of the Law made for the purpose of this Law	\$75,000
Failing to comply with the requirements specified under Article 33 of the Law made for the purpose of this Law	\$100,000
Failing to comply with the requirements specified under Article 34 of the Law made for the purpose of this Law	\$100,000

# INTERNAL AUDITORS SCOPE FOR TECHNOLOGY RISK MITIGATION



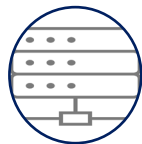
Business Systems & Application Controls



Cloud Security & Network Penetration Testing



AI, ML & RPA Audits



Data Protection & Data Analytics



Human Resources & Security



IT Strategy Aligned with Business Strategy



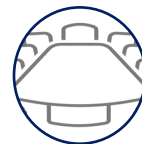
IT Governance, Policies & Procedures



Third Party Risk Management



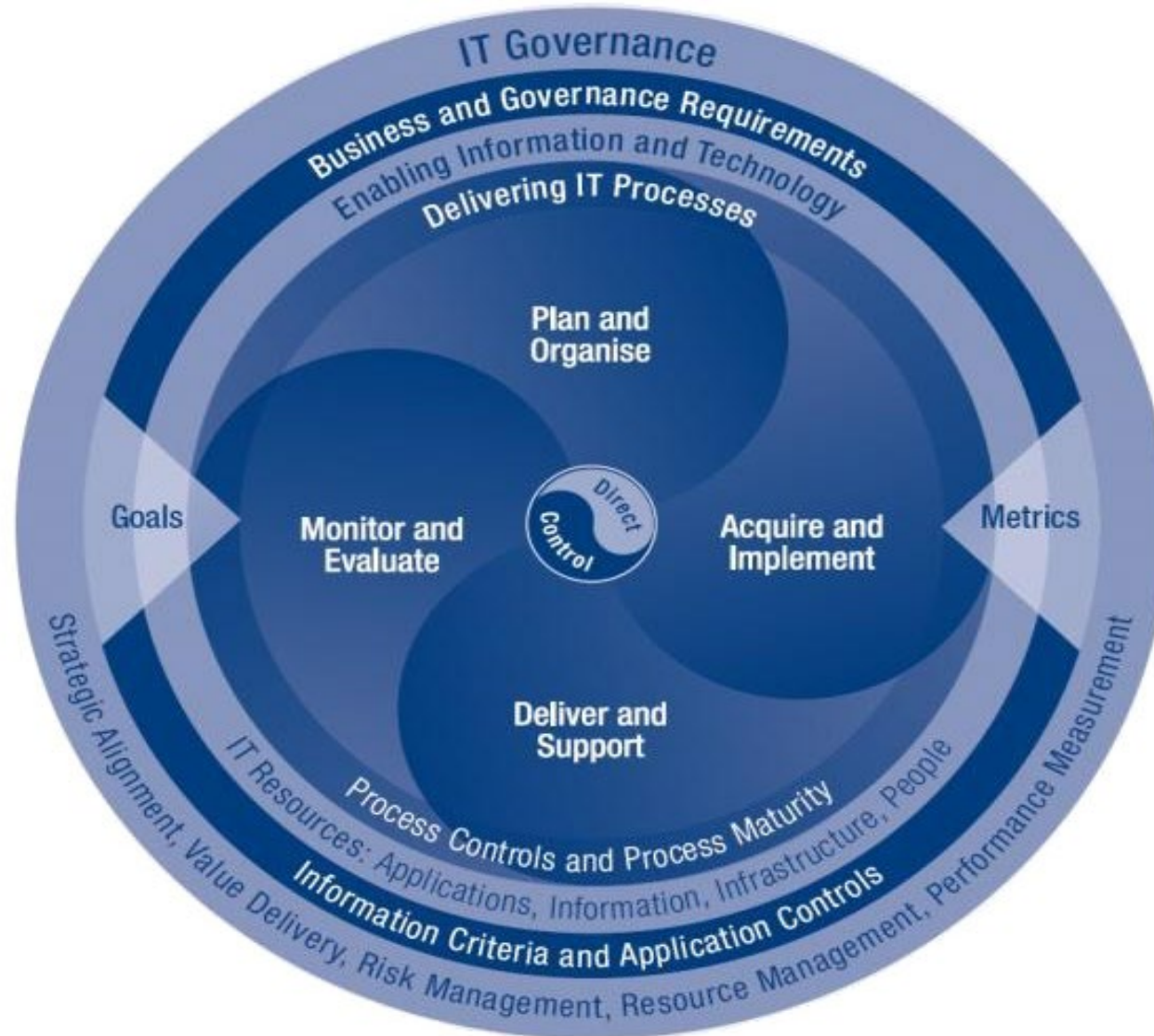
IT Operations & Cyber Security Controls



Disaster Recovery & Business Continuity

# AUDIT FRAMEWORKS FOR AI | ML | RPA

## Control Objectives for Information and Related Technologies (COBIT)





## ISO 27001 CONTROLS

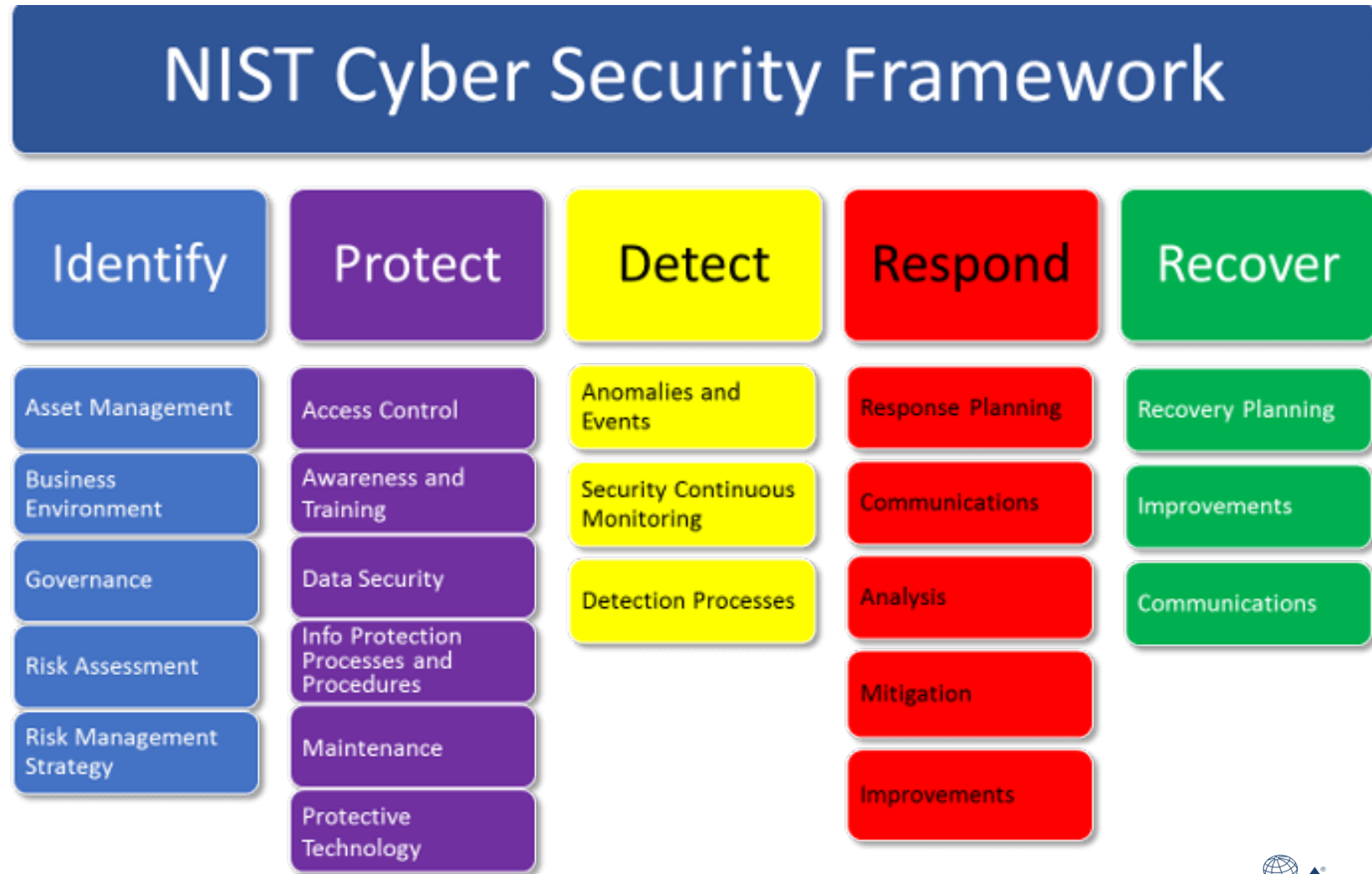
1. Information Security Policies
2. Organization of Information Security
3. Human Resource Security
4. Asset Management
5. Access Control
6. Cryptography
7. Physical and Environmental Security
8. Operations Security
9. Communications Security
10. System Acquisition and Maintenance
11. Supplier Relationships
12. Security Incident Management
13. Business Continuity Management
14. Compliance



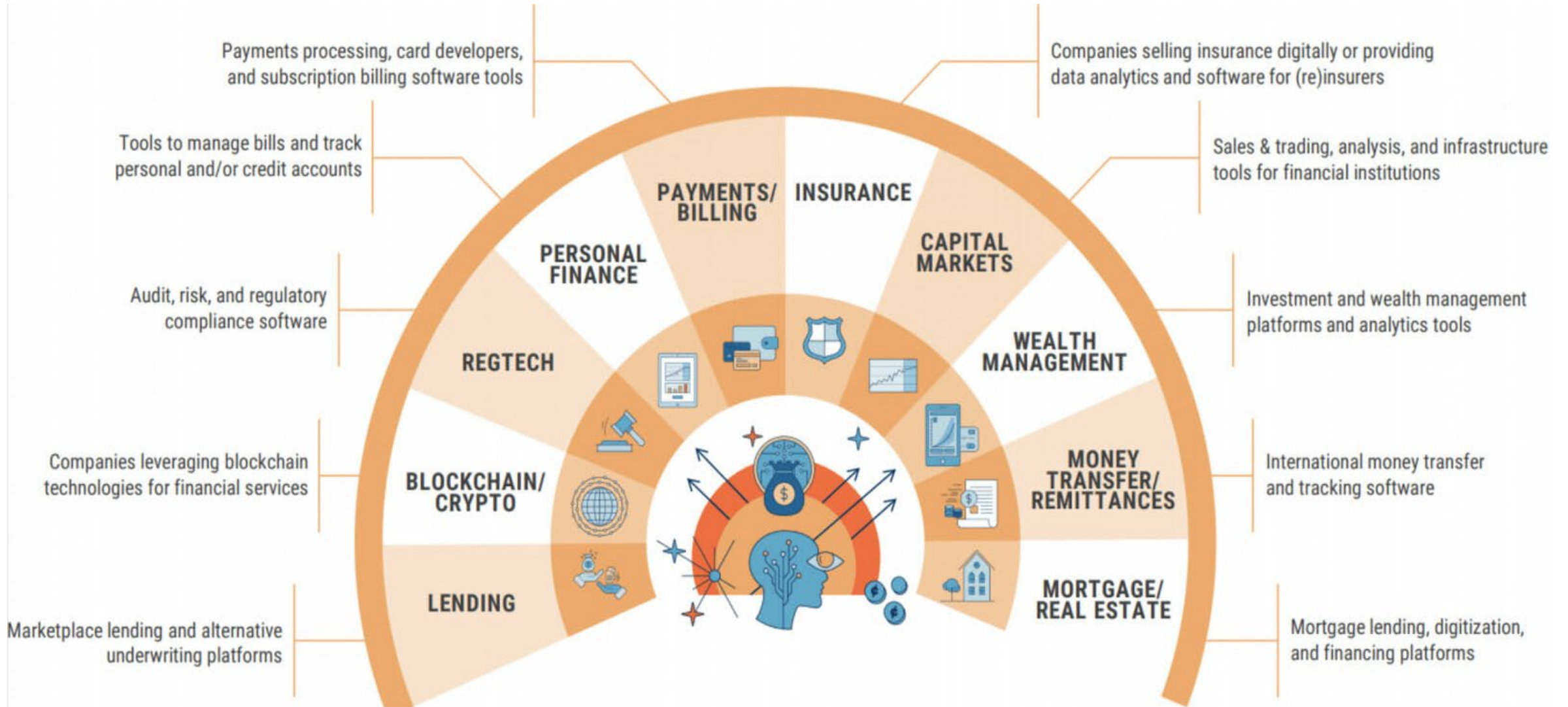
# AUDIT FRAMEWORKS FOR AI | ML | RPA

National Institute of Standards and Technology (NIST)

- Project Implementation and Assurance
- AI, ML, RPA Processes & Controls Reviews
- Vulnerability Assessment & Network Penetration Tests Configuration management tests
- Cloud Security configuration test
- Web/ mobile application test



# FINTECH AUDIT SCOPE



SOURCE: CBS INSIGHTS

PRIVILEGED AND CONFIDENTIAL

# CHALLENGES IN AUDITING ARTIFICIAL INTELLIGENCE



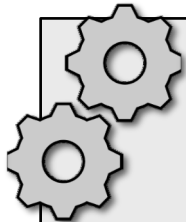
# KEYS TO SUCCESSFUL AI AUDITING



Adopt and adapt existing frameworks and regulations



Become informed about AI design and architecture to set proper scope



Focus on controls and governance and not algorithms



Proactively Involve, explain & communicate with stakeholders on AI



Be informed about AI design and engage specialist



Document architectural practice for cross-team transparency

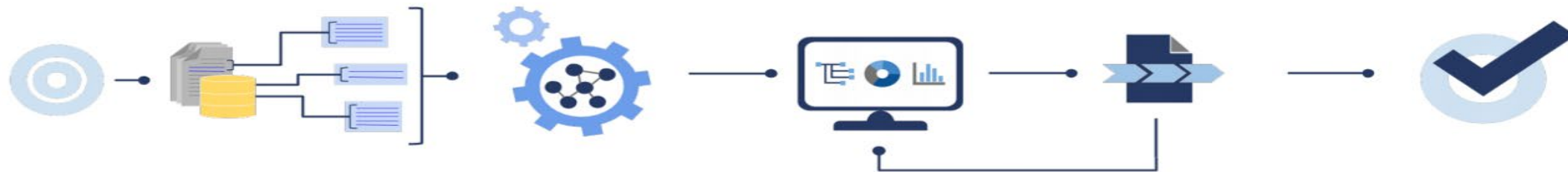
# AUDITING WITH ARTIFICIAL INTELLIGENCE



 Ingest

 Enrich

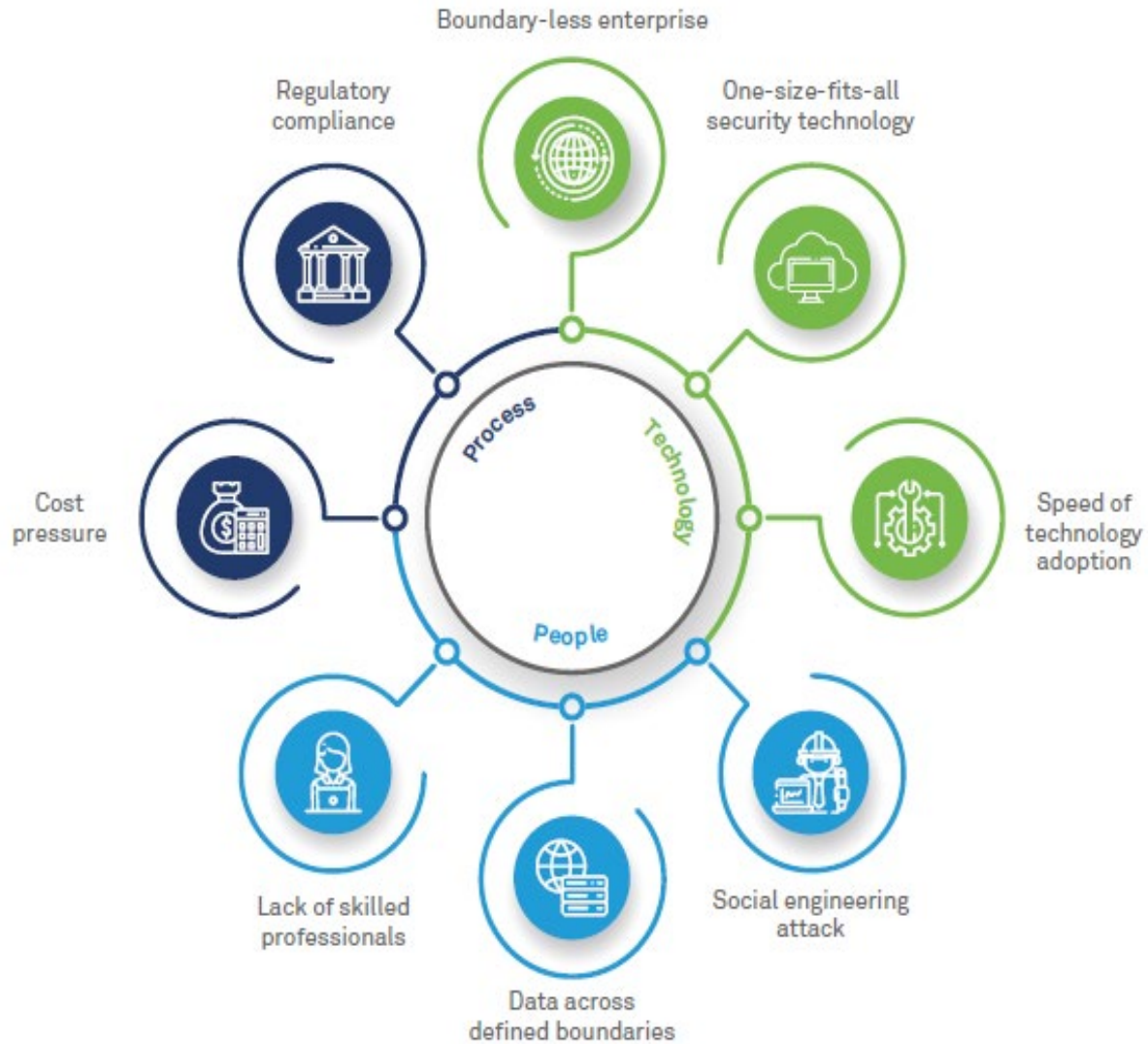
 Explore



Microsoft Docs

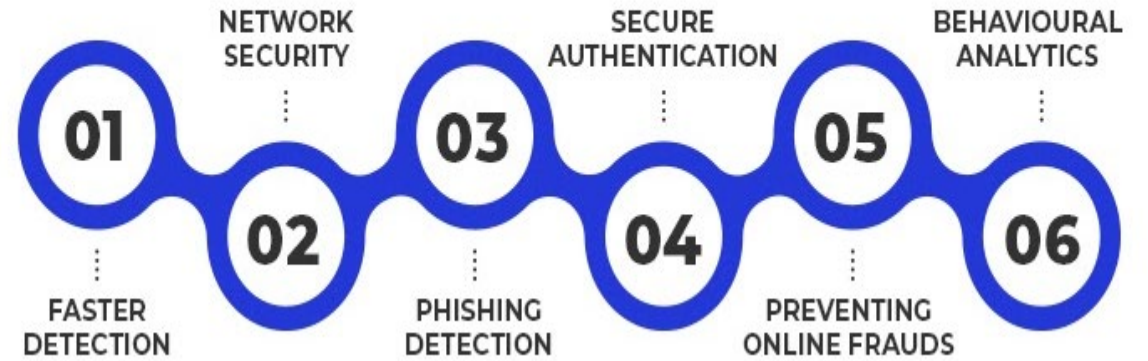


# AI IN CYBERSECURITY



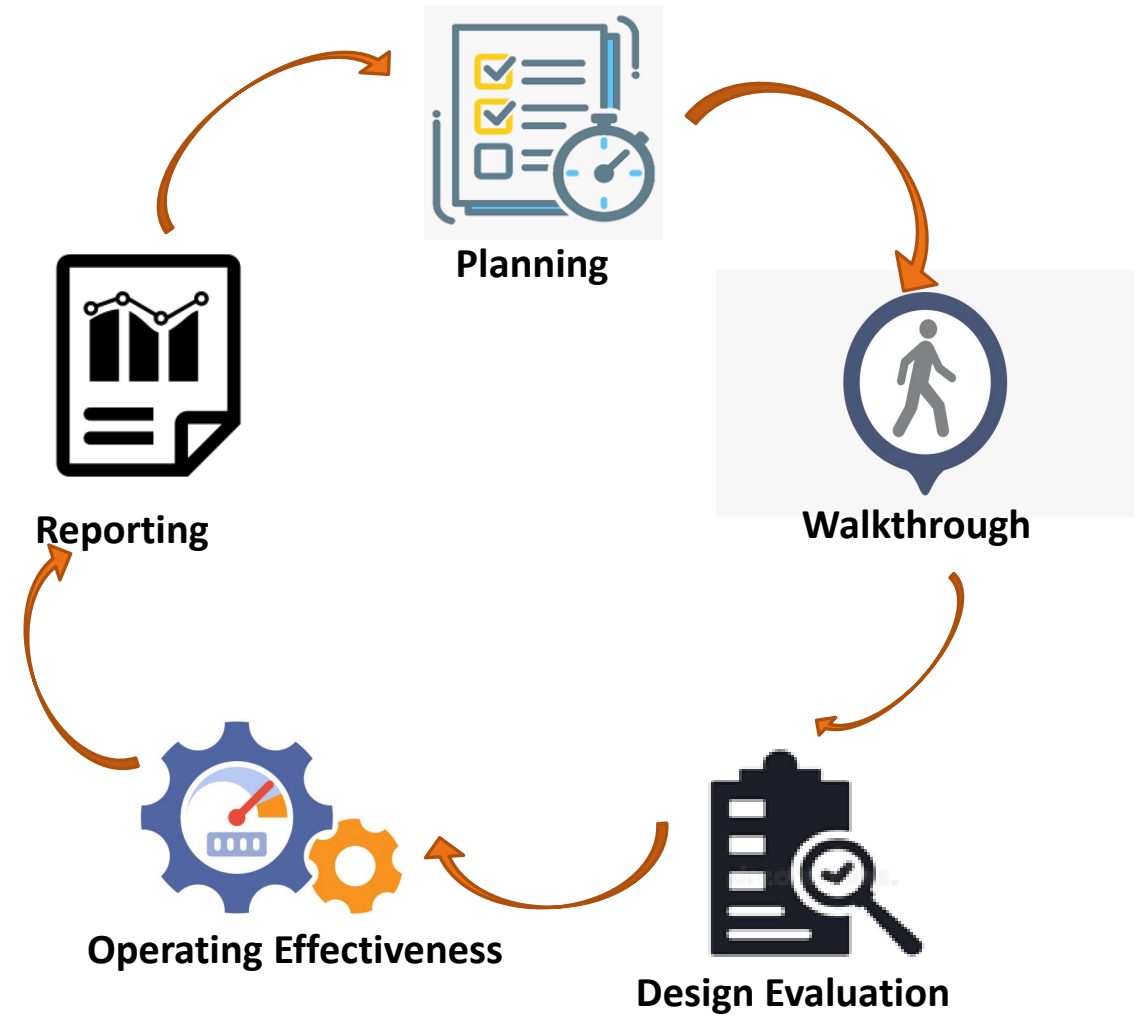
Source: Wipro

# AI IN CYBERSECURITY

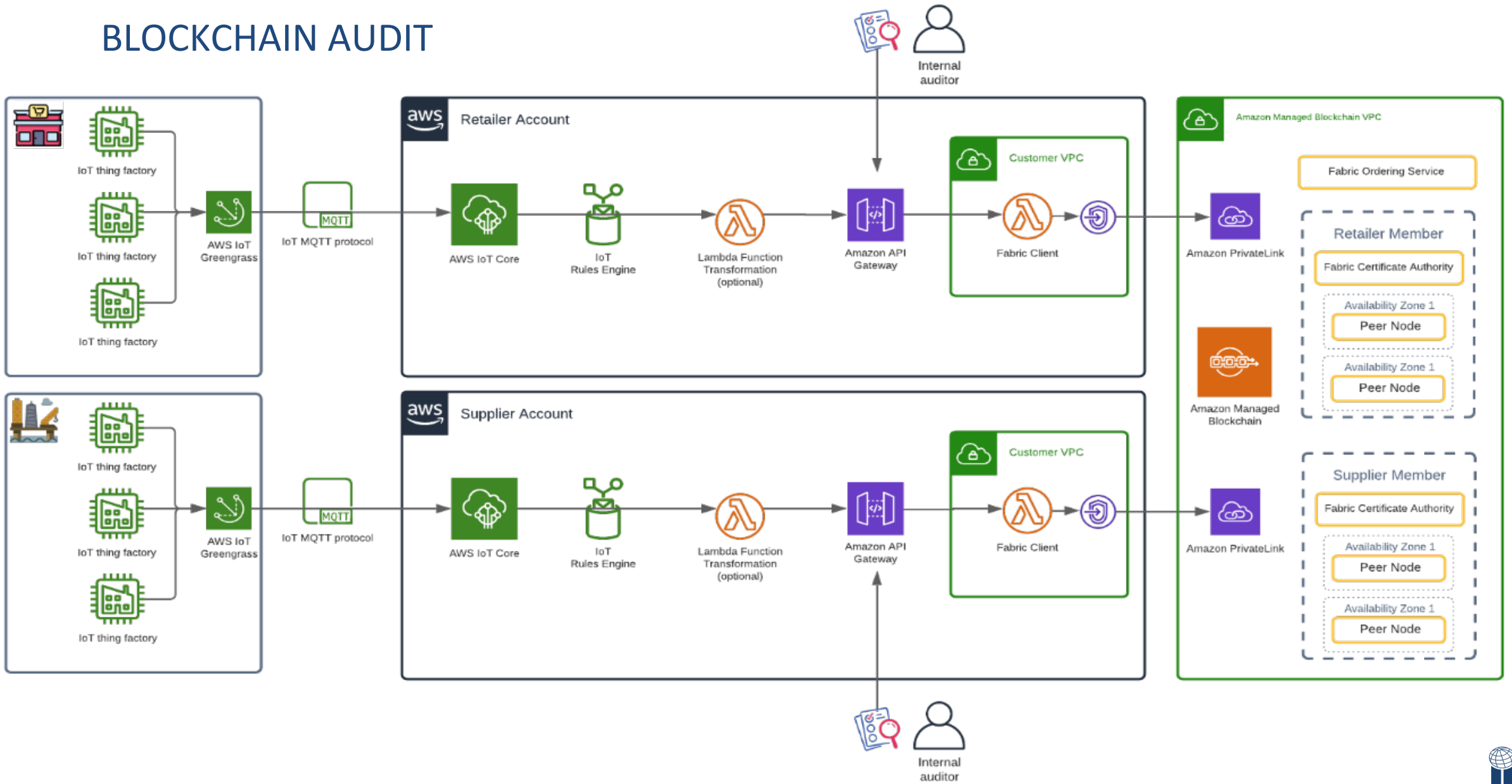


Source: analyticssteps.com

# AUDITING A BOT (RPA)

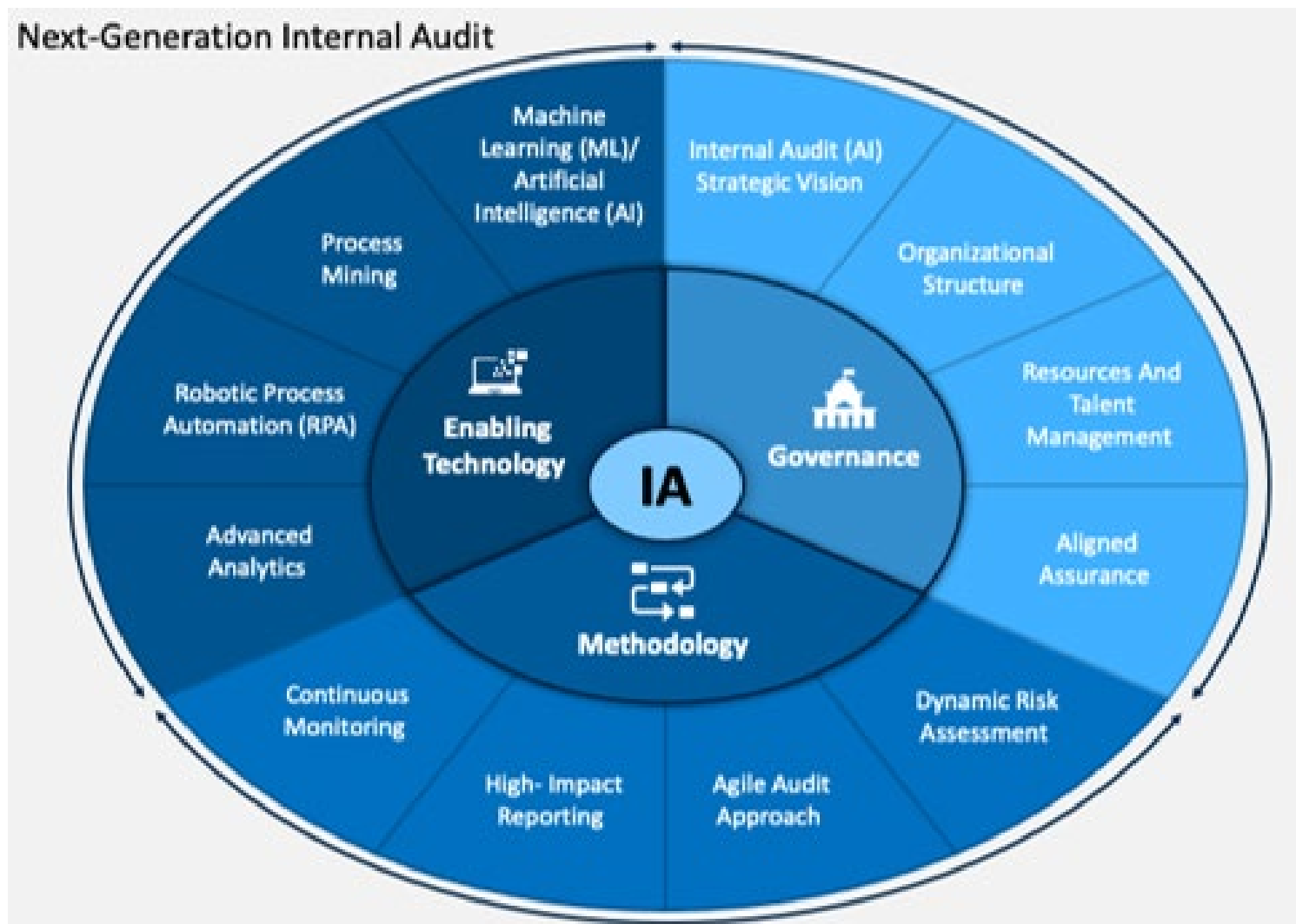


# BLOCKCHAIN AUDIT





# THE FUTURE OF INTERNAL AUDIT





# Audit in 2030 - Future of Audit



# THANK YOU!

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