



INDUSTRY 4.0

Impact on CAs

CA Narasimhan Elangovan

FCA, CS, DISA (ICAI), DipIFR (UK), CISA
(USA), LLB

Partner KEN & Co., Chartered Accountants,
Bengaluru.

DIGITAL
ACCOUNTANTS
SUMMIT

Kolkata 2019



Narasimhan Elangovan

B.Com, FCA, CS, DISA(ICAI),
DipIFR(UK), CISA(USA), LLB

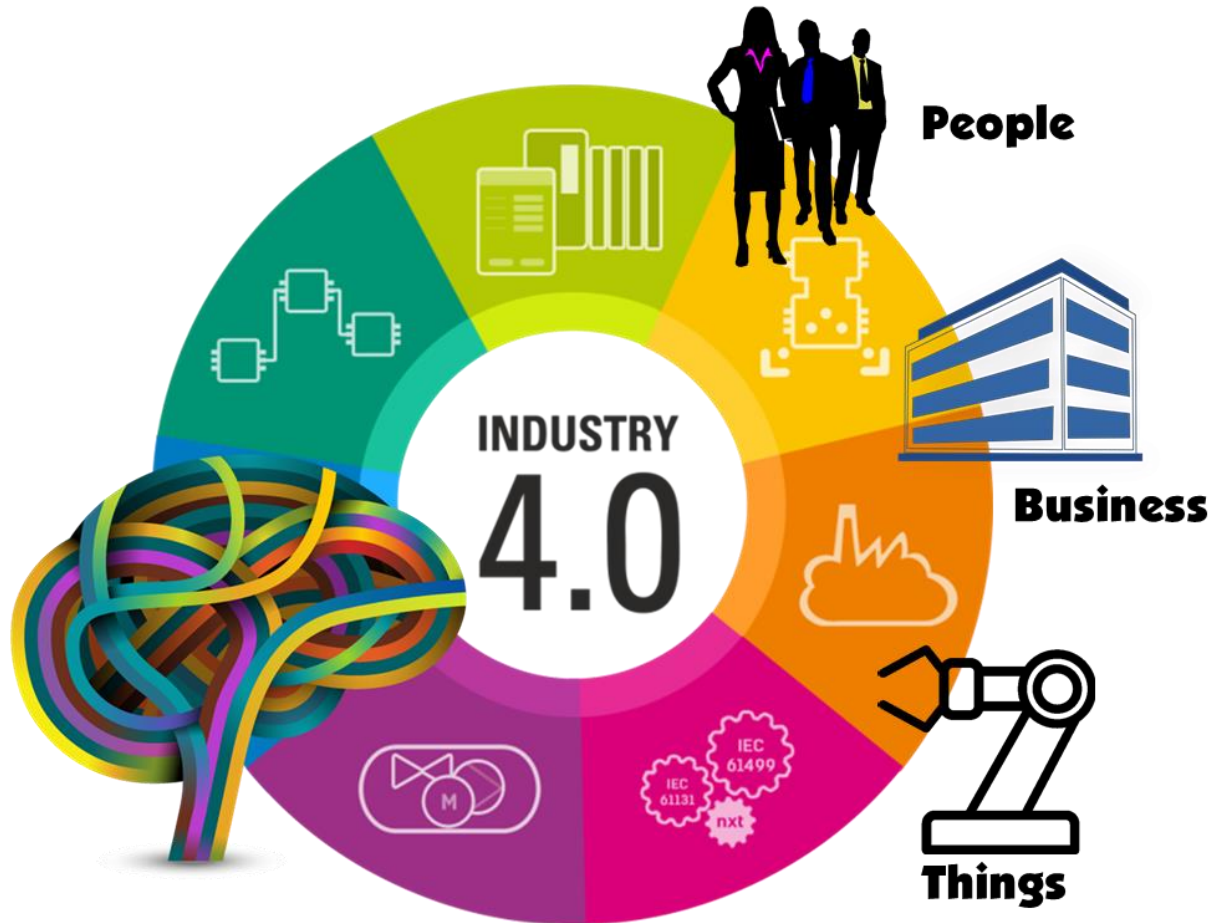


Partner
KEN & Co. Chartered Accountants,
Bengaluru.

- Practising Chartered Accountant with specialisation in Information System Assurance
- A futurist who specializes in
 - IT Consulting, Information Systems Assurance
 - GDPR & Privacy Law
 - Data Analytics, Implementation and Testing of Internal Financial Controls
 - SOX and SOC (SSAE-16 and 18)
- IS Auditor and Advisor for various BFSI, Sporting Organisations, start-up entities, Tech companies and many more
- Youngest DISA & CISA Faculty
- Speaker at National & International Forums of IT
- Faculty for CA Course (IT, EIS, ISCA) at ICAI and at Apnacourse.com (Online)

DISCLAIMER

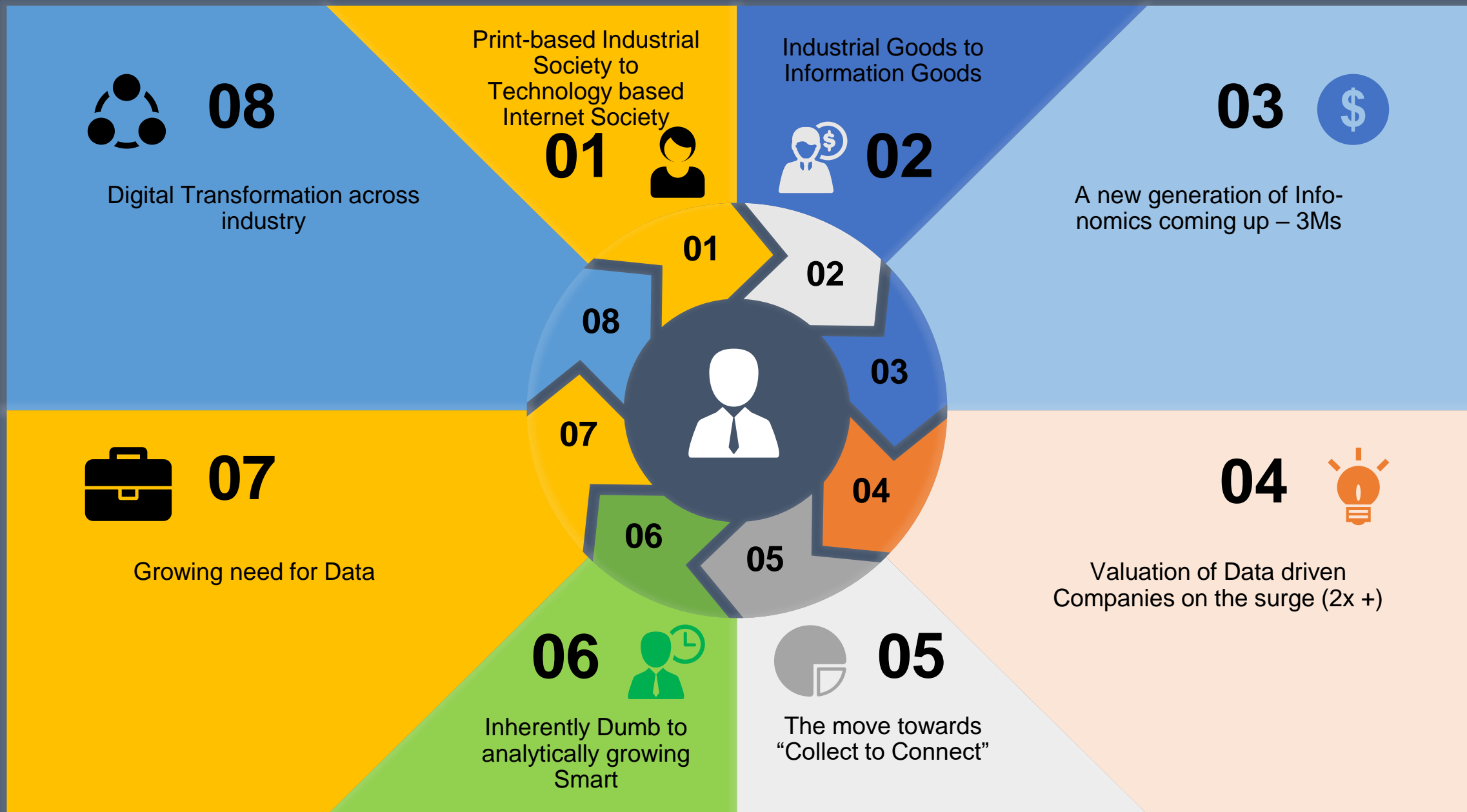
- The views and apps discussed in this session is only for information purpose and are the personal views of the presenter. The presenter is a practising CA and does not have any interest in any of the applications discussed and neither endorses any application.
- The views expressed herein may not be taken to necessarily represent the views of his firm, M/s. KEN & Co. Chartered Accountants.
- Readers are advised to take caution before choosing any of the applications.
- This publication contains information in summary form and is therefore intended for general guidance only. It is not intended to be a substitute for detailed research or the exercise of professional judgment.
- No part of this material shall be construed as a solicitation of services or an invitation of any sort whatsoever from KEN & Co or to create a professional relationship.



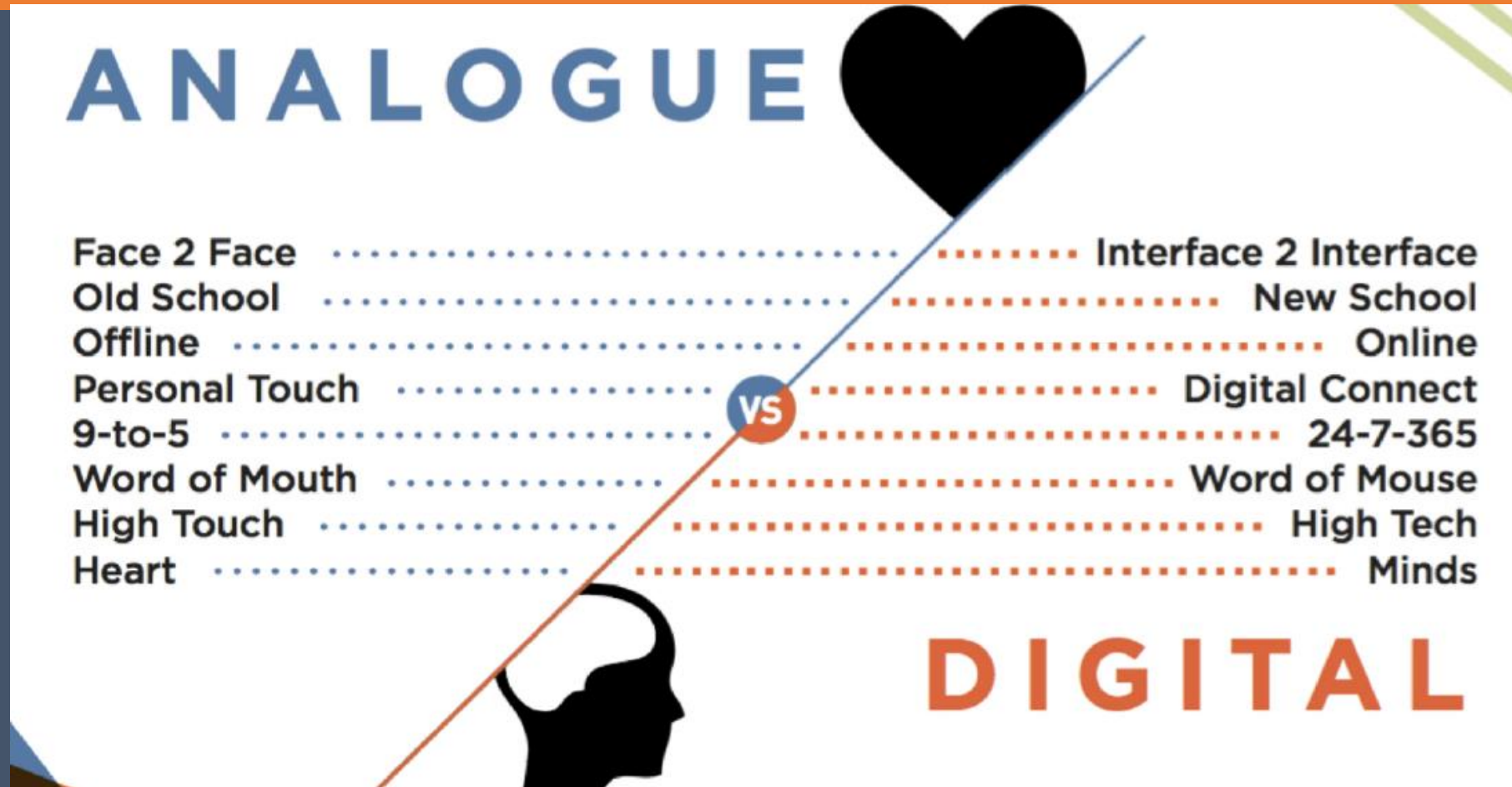
AGENDA

- Changing Times
- What is Industry 4.0?
- How to gear up?

CHANGING TIMES



Analogue v/s Digital



TWO INSTANCES OF TRANSFORMATION

TRANSPORTATION



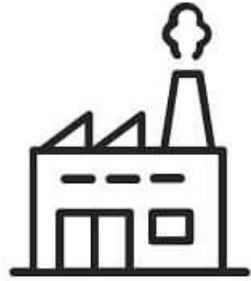
PAYMENTS



WHAT IS INDUSTRY 4.0?



Can You Connect The Dots

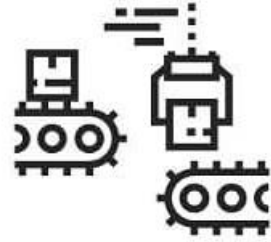


INDUSTRY 1.0

Mechanization,
steam power,
weaving loom



1784



INDUSTRY 2.0

Mass production,
assembly line,
electrical energy



1870

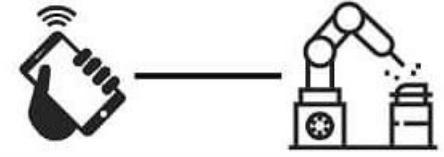


INDUSTRY 3.0

Automation,
computers and
electronics



1969

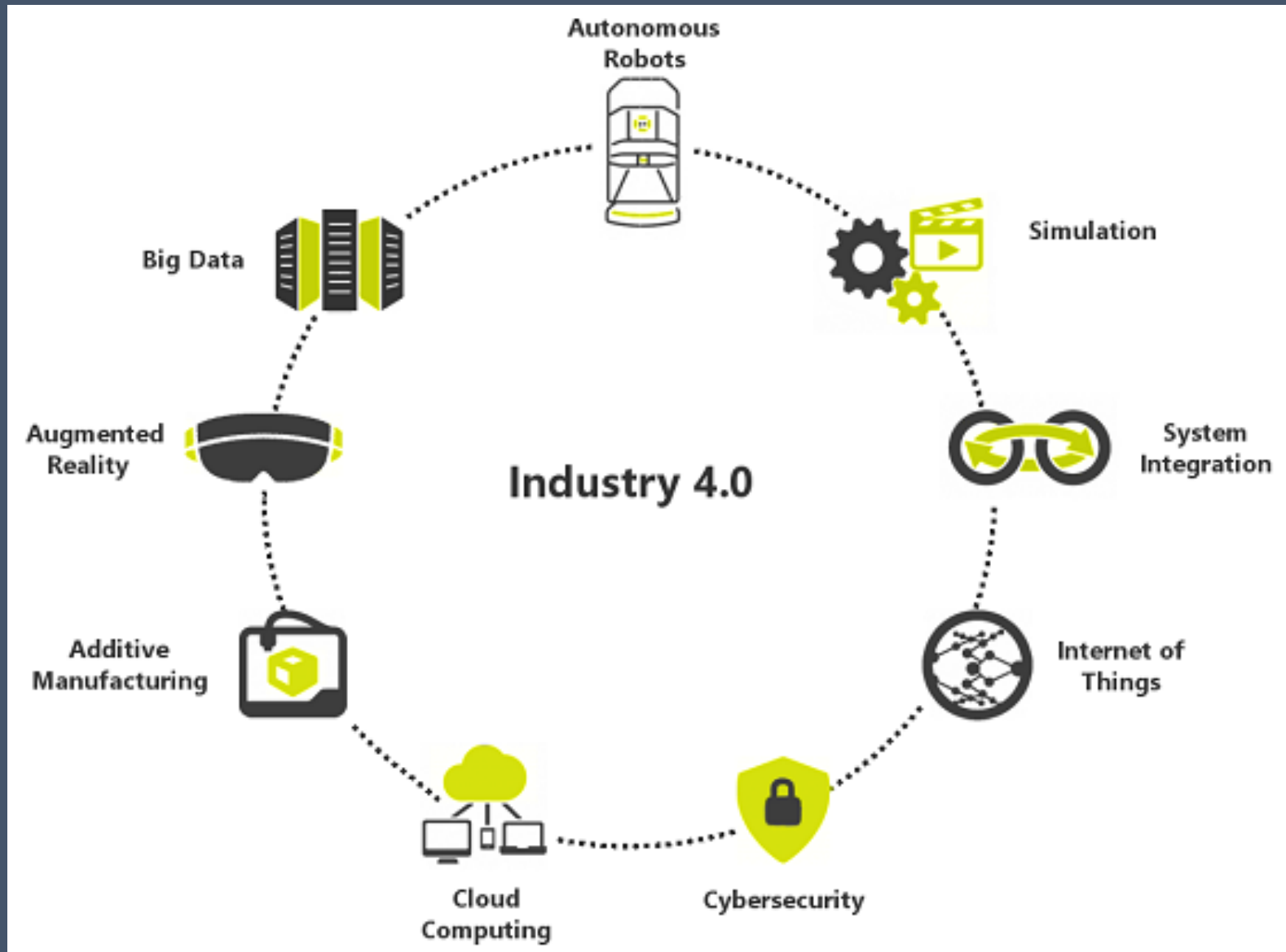


INDUSTRY 4.0

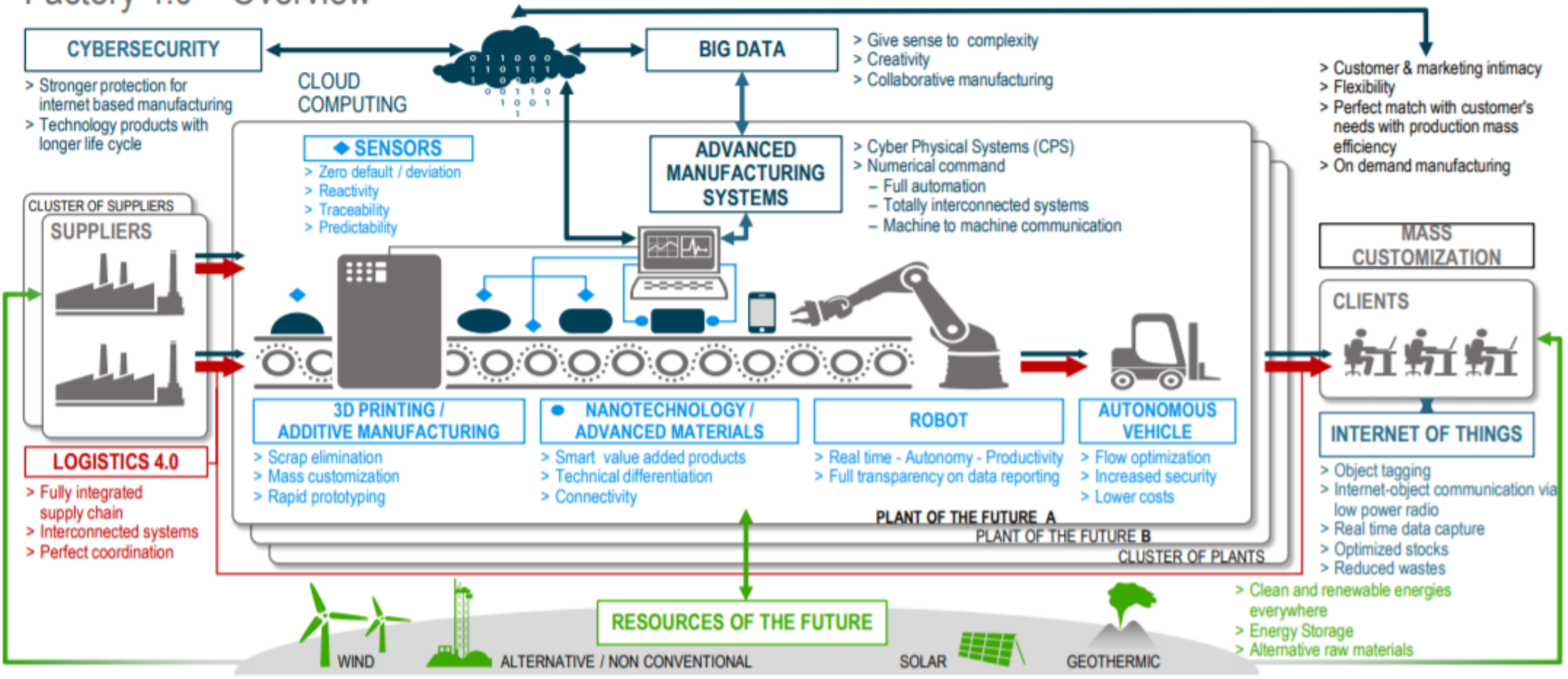
Cyber physical
systems, internet of
things (IoT),
networks



Today



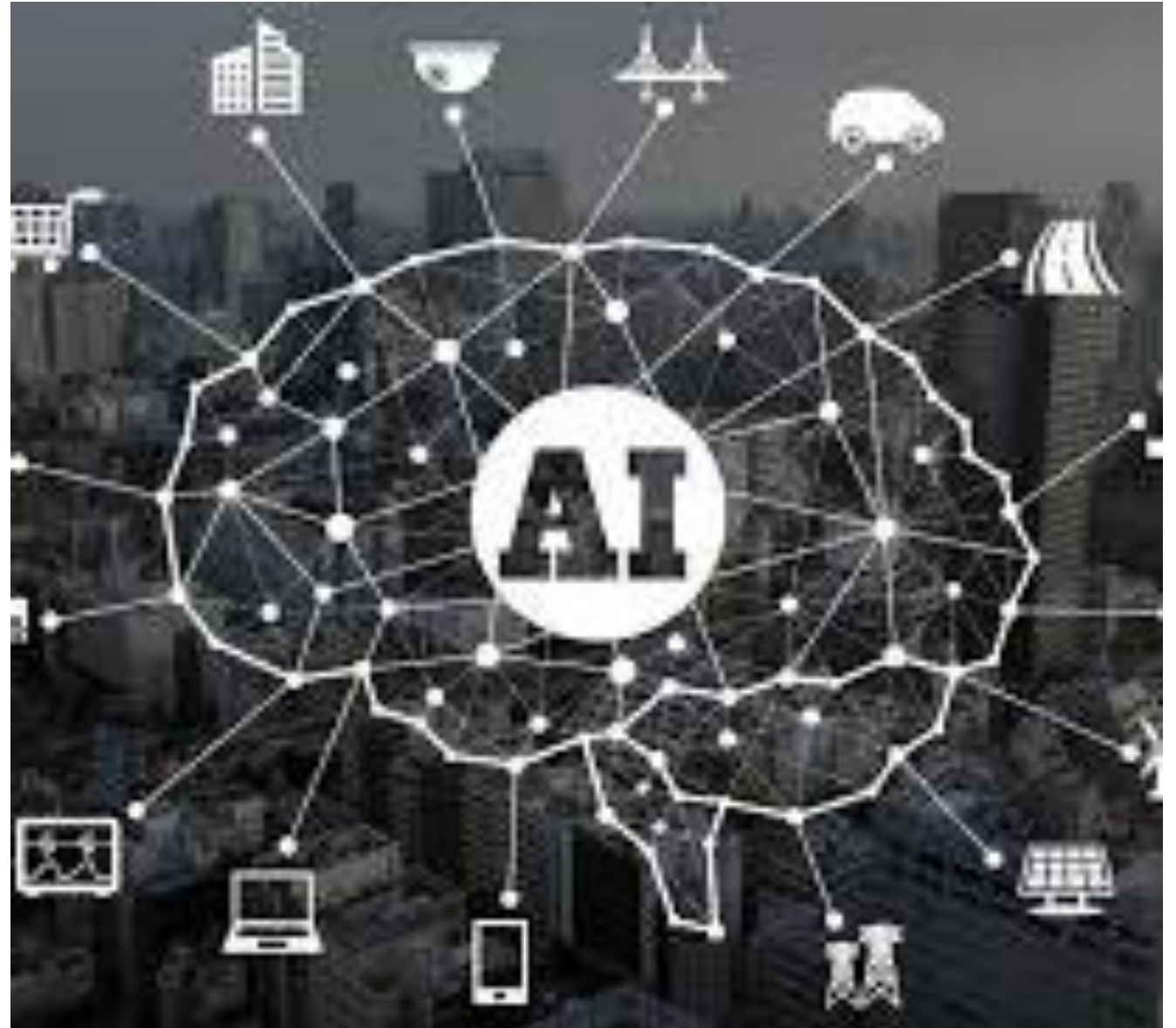
Factory 4.0 – Overview



WHAT ARE THESE EMERGING TECHNOLOGIES?

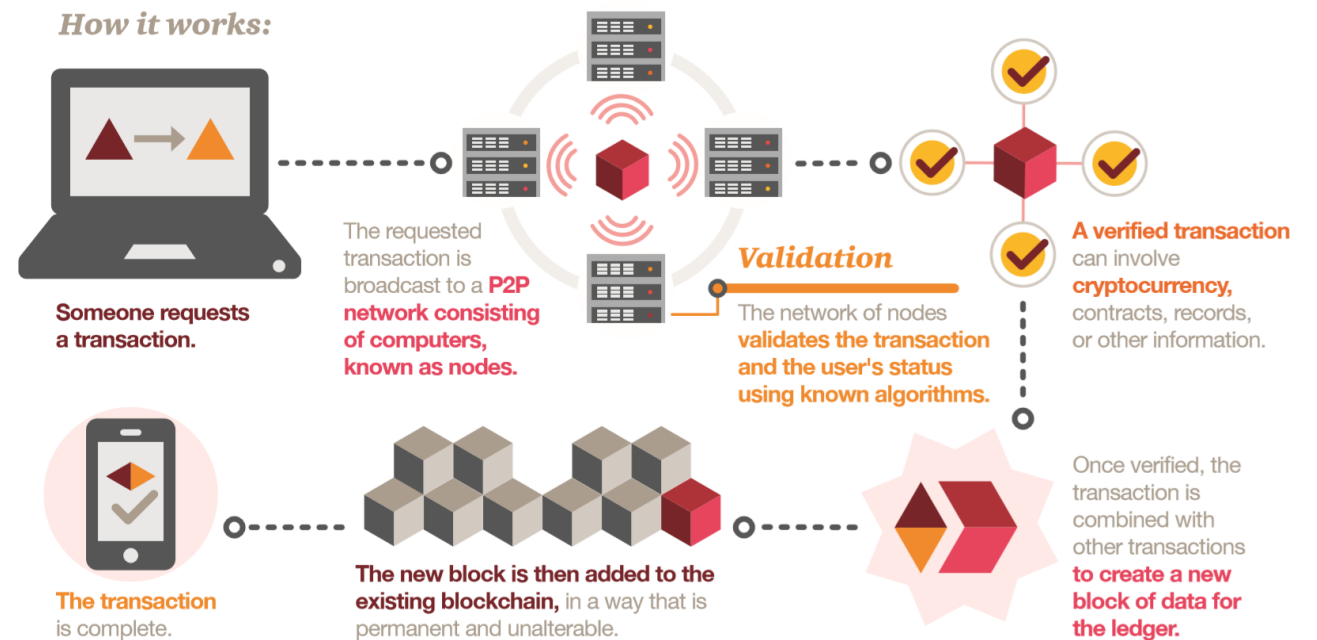
ARTIFICIAL INTELLIGENCE (AI)

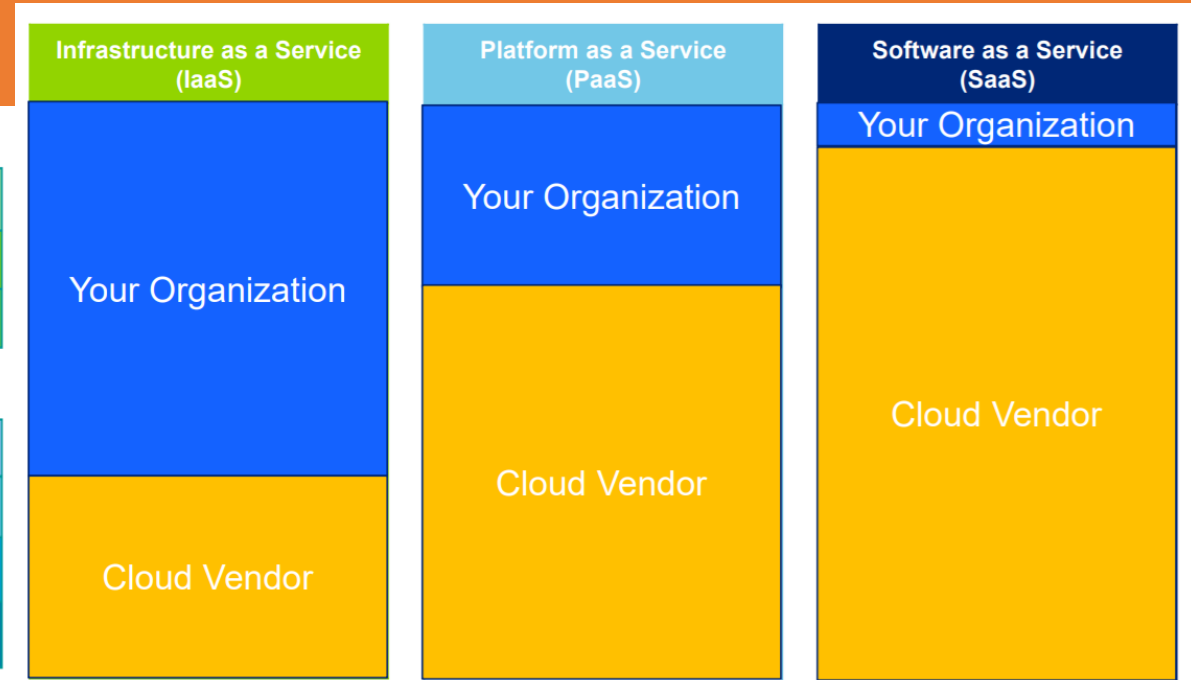
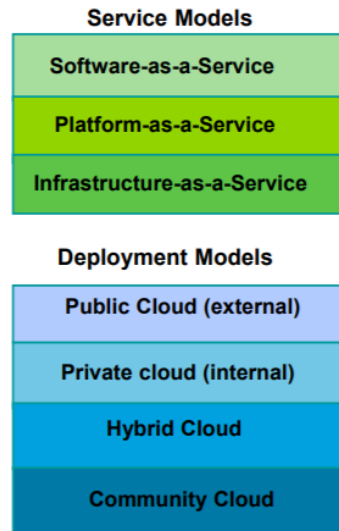
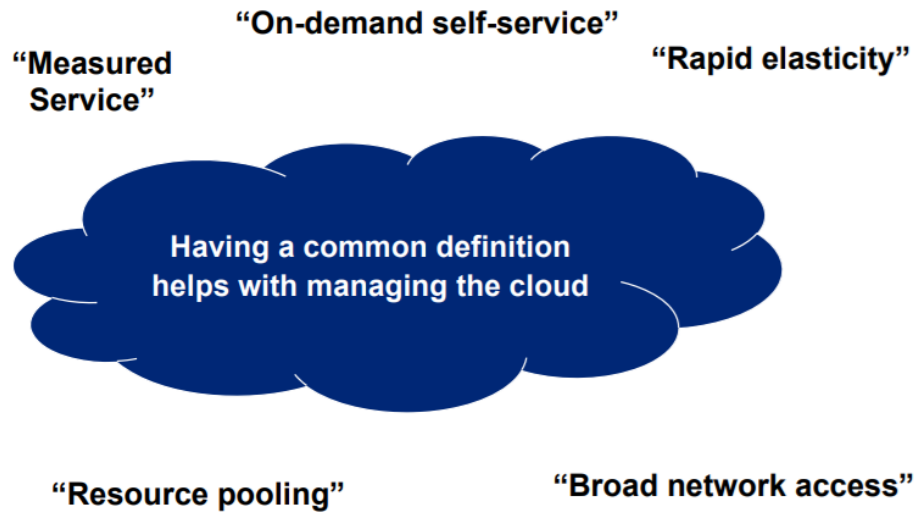
- Advanced computer systems that can simulate human capabilities
- The task of getting computers and machines to do tasks that require intelligence when done by humans



BLOCK CHAIN

- ❑ A blockchain is a digitized, decentralized, public ledger of all transactions.
- ❑ It is described as a “digital ledger” stored in a distributed network
- ❑ A distributed, protected journaling and ledger system.
- ❑ Use of blockchain technologies can enable anything from digital currency (e.g. Bitcoin) to any other value-bearing transaction





CLOUD COMPUTING OVERVIEW

DATA ANALYTICS

- Financials Statements are post-mortem
- Predictive insights need of the hour
- See into the future
- Turn mountains of data into nuggets of insight
- Take action with confidence

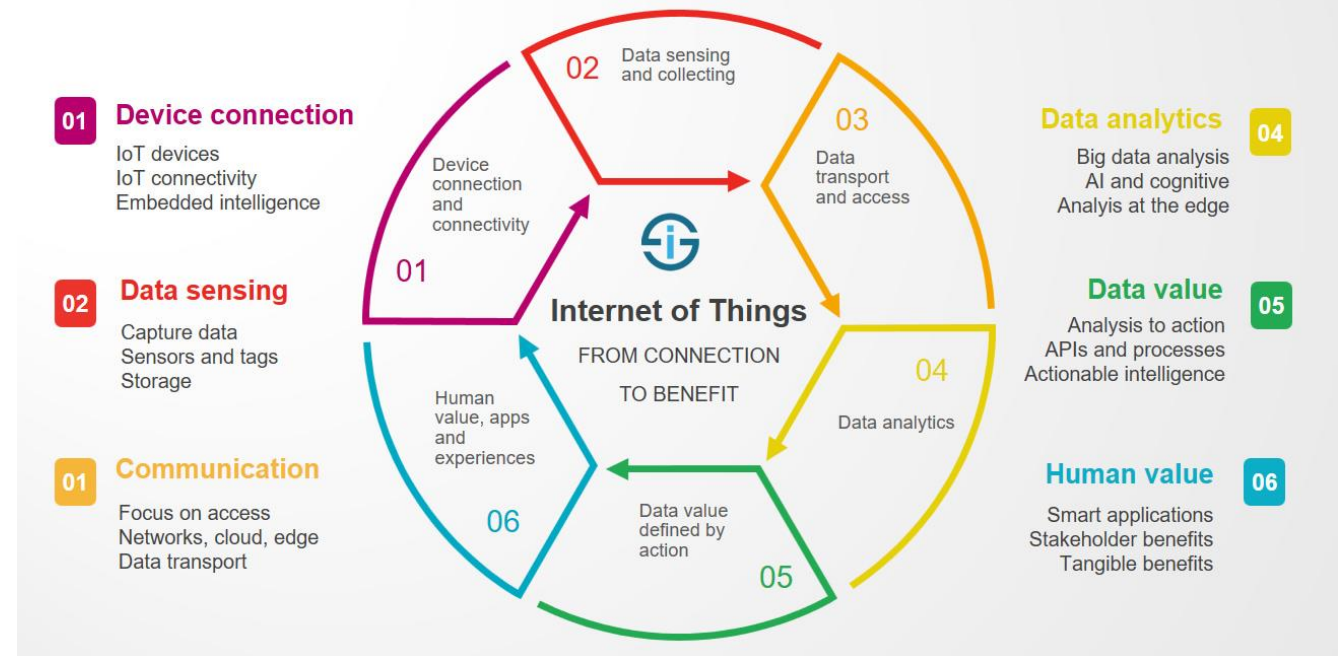


IOT

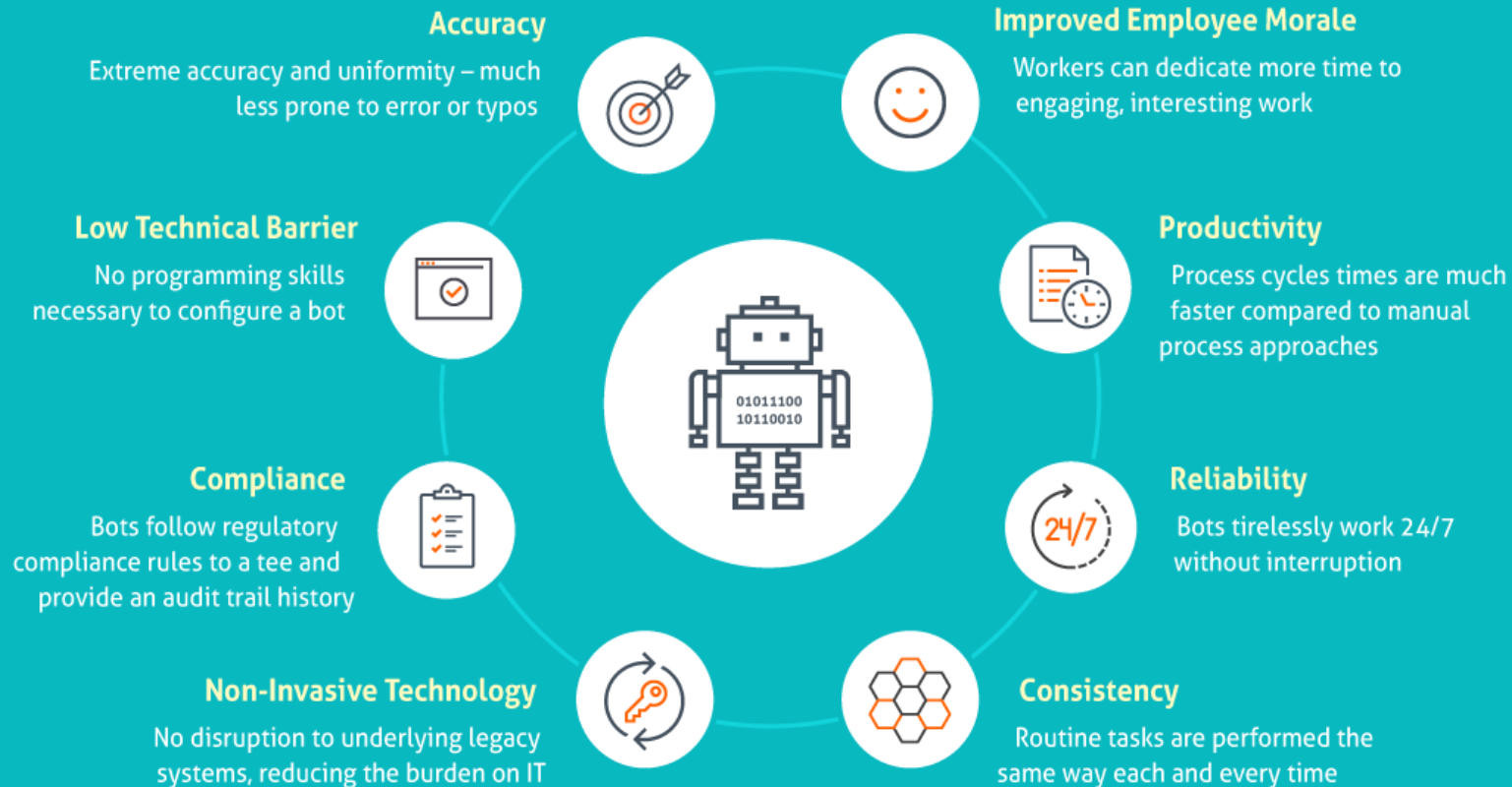
- Physical objects that have embedded network and computing elements and communicate with other objects over a network
- objects, animals or people are provided with unique identifiers and the ability to transfer data over a network without requiring human-to-human or human-to-computer interaction.
- Usage of Wearables, sensors etc

The Internet of Things

From connecting devices to human value

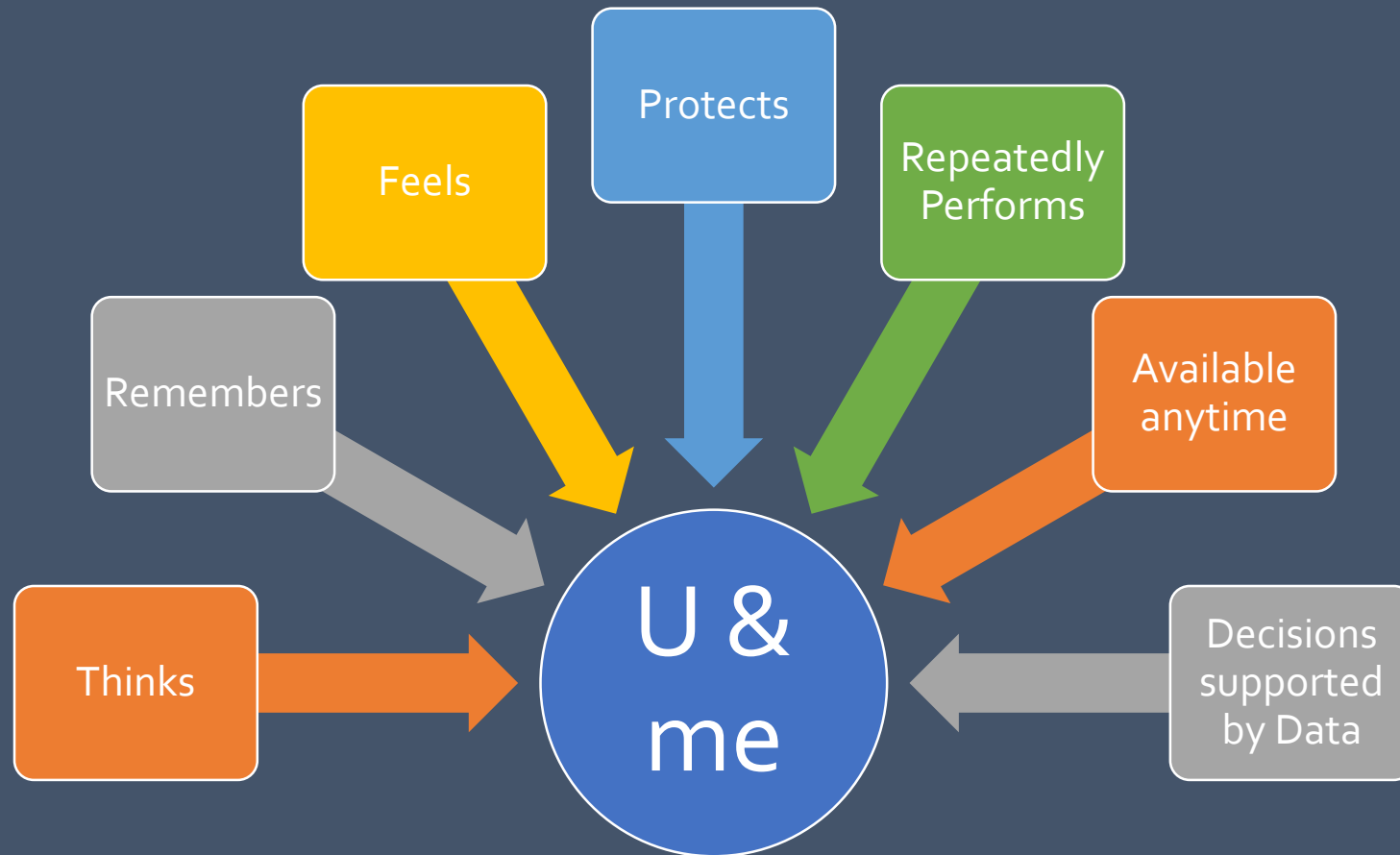


Robotic Process Automation

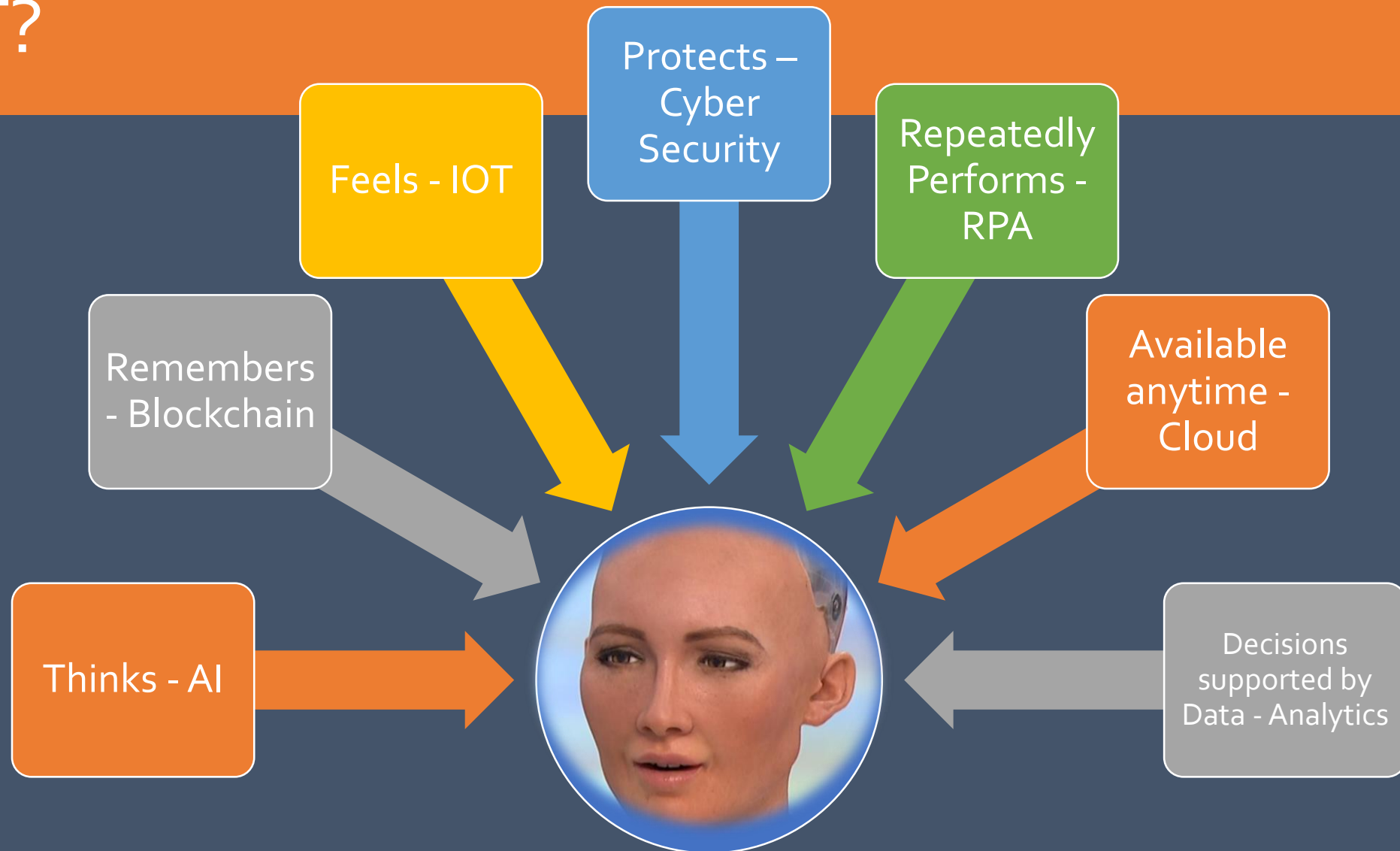


HOW IS 4.0 LINKING US?

WHAT CAN A HUMAN DO?



HOW HAS INDUSTRY 4.0 REVOLUTIONISED IT?



Gartner Hype Cycle for Emerging Technologies, 2019

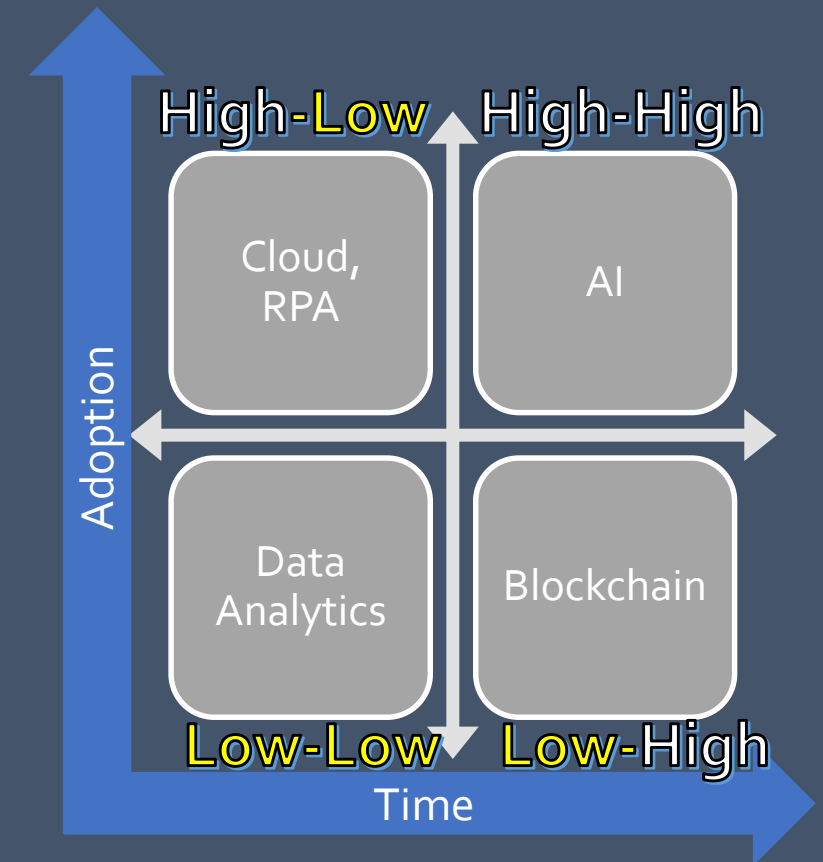


gartner.com/SmarterWithGartner

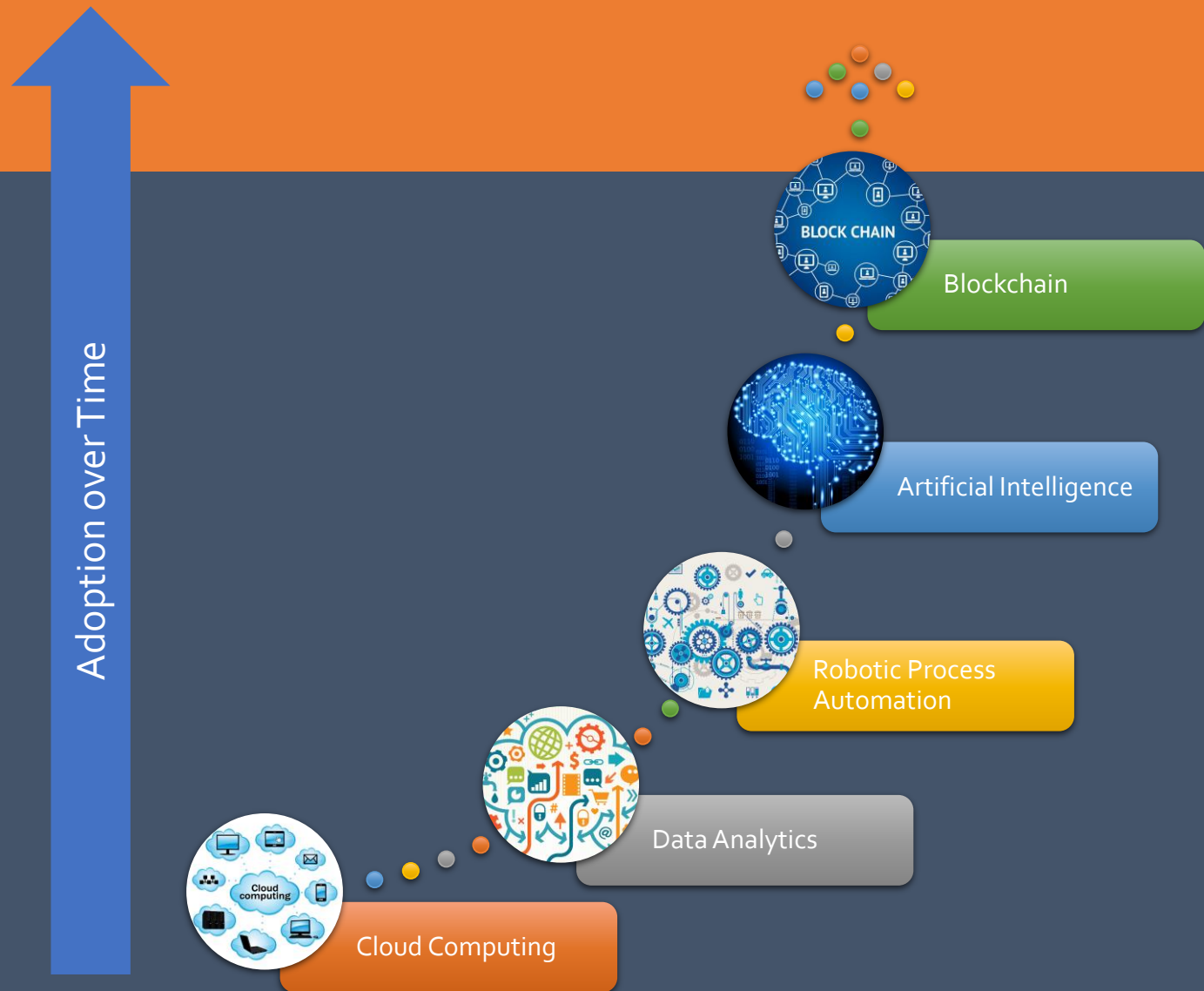
Source: Gartner
© 2019 Gartner, Inc. and/or its affiliates. All rights reserved.

Gartner®

MATURITY AND ADOPTION OF DISRUPTIVE TECH



Penetration Of Tech In Our Profession



IMPACT ON FINANCE

IMPACT IN FINANCE

	Exponential Visualization Technologies	In-Memory Computing	Blockchain	Robotics Process Automation	Internet of Things	Cognitive Computing	Advanced Analytics	Mobility
Finance areas								
Fixed Assets					X		X	
FP&A	X	X	X	X		X	X	X
Order-to-cash			X	X			X	X
Procure-to-pay			X	X	X		X	
Record-to-report				X			X	
Tax				X			X	
Treasury			X	X				
Investor Relations	X		X			X	X	X

PROFESSION 2.0

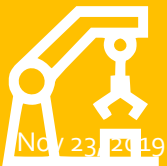
	PROFESSION 1.0	PROFESSION 2.0
CA FIRMS AND CAs IN PRACTICE	<ul style="list-style-type: none">• Tax Filing Services• Traditional Audit and Assurance• MIS and reporting• Traditional transaction advisory• Engagement on demand• Local presence	<ul style="list-style-type: none">• Tax Filing Automation• AI and Analytics enabled audit• Advanced Analytics and visualization• Decision impact forecasting• Analytics driven demand generation• Digital presence
CORPORATE FINANCE	<ul style="list-style-type: none">• Finance as a support function• Responds to business needs• Manual push based reporting• Manual controllership function• Traditional internal audit• Descriptive reporting	<ul style="list-style-type: none">• Finance integrated with business• Forecasts business outcomes• Cloud based automated reporting• RPA driven controllership• AI and RPA driven internal audit• Predictive Analytics

Audit 1.0 to 4.0

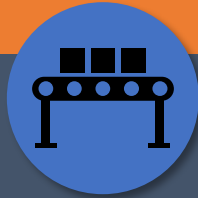


Audit 1.0

Manual audit
Tools : pencils,
calculators

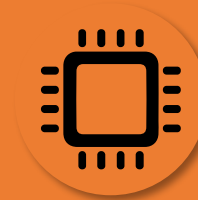
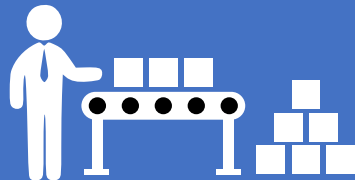


Nov 23, 2019



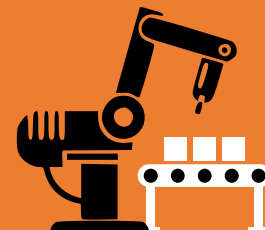
Audit 2.0

IT audit
Tools: Excel, CAATT
software



Audit 3.0

Inclusion of big data in
audit analytics
Tools: Analytical apps



Audit 4.0

Semi- and progressive
automation of audit
Tools: Sensors, Internet of
Things (IoT), Internet of
Service (IoS), Cyber-
Physical Systems (CPS),
RFID, GPS



ELEMENTS OF AUDIT 4.0



Table 3: Examples of stable, new and redundant roles, all industries



Stable Roles	New Roles	Redundant Roles
Managing Directors and Chief Executives	Data Analysts and Scientists*	Data Entry Clerks
General and Operations Managers*	AI and Machine Learning Specialists	Accounting, Bookkeeping and Payroll Clerks
Software and Applications Developers and Analysts*	General and Operations Managers*	Administrative and Executive Secretaries
Data Analysts and Scientists*	Big Data Specialists	Assembly and Factory Workers
Sales and Marketing Professionals*	Digital Transformation Specialists	Client Information and Customer Service Workers*
Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	Sales and Marketing Professionals*	Business Services and Administration Managers
Human Resources Specialists	New Technology Specialists	Accountants and Auditors
Financial and Investment Advisers	Organizational Development Specialists*	Material-Recording and Stock-Keeping Clerks
Database and Network Professionals	Software and Applications Developers and Analysts*	General and Operations Managers*
Supply Chain and Logistics Specialists	Information Technology Services	Postal Service Clerks
Risk Management Specialists	Process Automation Specialists	Financial Analysts
Information Security Analysts*	Innovation Professionals	Cashiers and Ticket Clerks
Management and Organization Analysts	Information Security Analysts*	Mechanics and Machinery Repairers
Electrotechnology Engineers	Ecommerce and Social Media Specialists	Telemarketers
Organizational Development Specialists*	User Experience and Human-Machine Interaction Designers	Electronics and Telecommunications Installers and Repairers
Chemical Processing Plant Operators	Training and Development Specialists	Bank Tellers and Related Clerks
University and Higher Education Teachers	Robotics Specialists and Engineers	Car, Van and Motorcycle Drivers
Compliance Officers	People and Culture Specialists	Sales and Purchasing Agents and Brokers
Energy and Petroleum Engineers	Client Information and Customer Service Workers*	Door-To-Door Sales Workers, News and Street Vendors, and Related Workers
Robotics Specialists and Engineers	Service and Solutions Designers	Statistical, Finance and Insurance Clerks
Petroleum and Natural Gas Refining Plant Operators	Digital Marketing and Strategy Specialists	Lawyers



THIS DAY IS
NOT TOO FAR...

FUTURE PREDICTIONS, AREAS OF PRACTISE

EMERGING PROFESSIONAL OPPORTUNITIES FOR CAS

- **Data Analytics**
 - Data Analysts / Data Scientist
 - Big Data specialists
- **Cyber Security**
 - Building Cyber resiliency
 - Ethical Hackers
 - Advisory on Cyber Security
- **Emerging Technology**
 - AI / ML
 - Blockchain
 - Process Re-engineering / RPA
- **Data Privacy**
 - Assessment
 - Implementation
 - Audits
- **Governance**
 - COSO
 - COBIT
 - Standards such as ISO 27001
- **Other Areas**
 - Forensic Audit
 - Social Media Advisory
 - Digital Marketing

KEY FUTURE PREDICTIONS!



E-Commerce of CA Practise would become more prominent



CAs coupled with Domain expertise and Technology skills will be in Demand



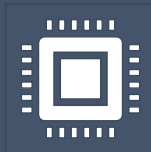
Accounting would be automated



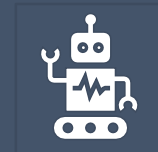
Data would continue to be the most valued asset



Power of AI and Big Data would unearth multiple hidden truths !



AI would move from a tool to a service Provider



Robots would do Compliance



Human Intelligence would still be the most valued

Tech-enabled Solutions



IT Governance & Compliance



IT Assurance Services



Data Analytics & Business Intelligence



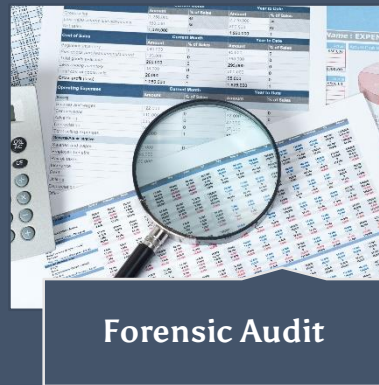
GDPR & Privacy Audits



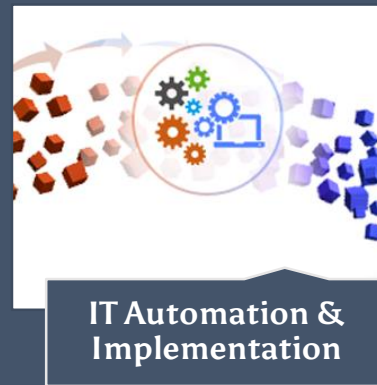
Emerging Technology (AI, Blockchain, IoT)



Enterprise Risk Management



Forensic Audit



IT Automation & Implementation



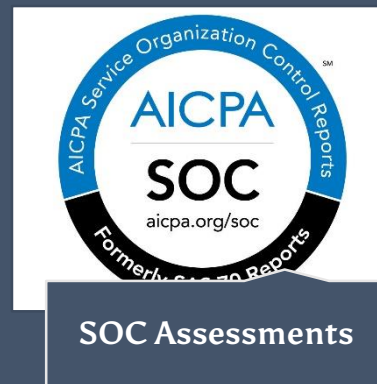
Cyber Security



IT Consulting



ISO, PCI DSS, CMMI Compliance



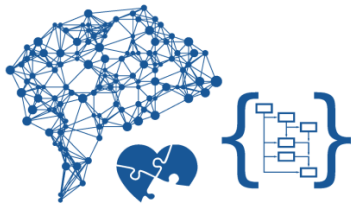
SOC Assessments



IT Training

in 2020

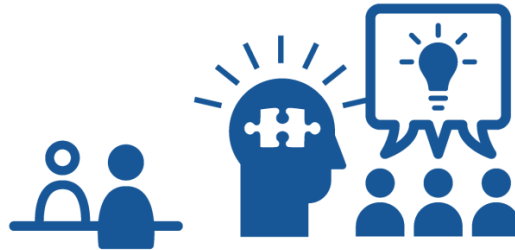
1. Complex Problem Solving
2. Critical Thinking
3. Creativity
4. People Management
5. Coordinating with Others
6. Emotional Intelligence
7. Judgment and Decision Making
8. Service Orientation
9. Negotiation
10. Cognitive Flexibility



Source: Future of Jobs Report, World Economic Forum

in 2015

1. Complex Problem Solving
2. Coordinating with Others
3. People Management
4. Critical Thinking
5. Negotiation
6. Quality Control
7. Service Orientation
8. Judgment and Decision Making
9. Active Listening
10. Creativity



TOP 10 SKILLS
TO BE RELEVANT
IN INDUSTRY 4.0

KEY TAKEAWAYS!



Invest and
experiment in
new
technologies



Adopt & adapt to
emerging trends
such as cloud,
data analytics



Build awareness
and engage in
debate



Train and
develop the skill-
sets and mind-
sets



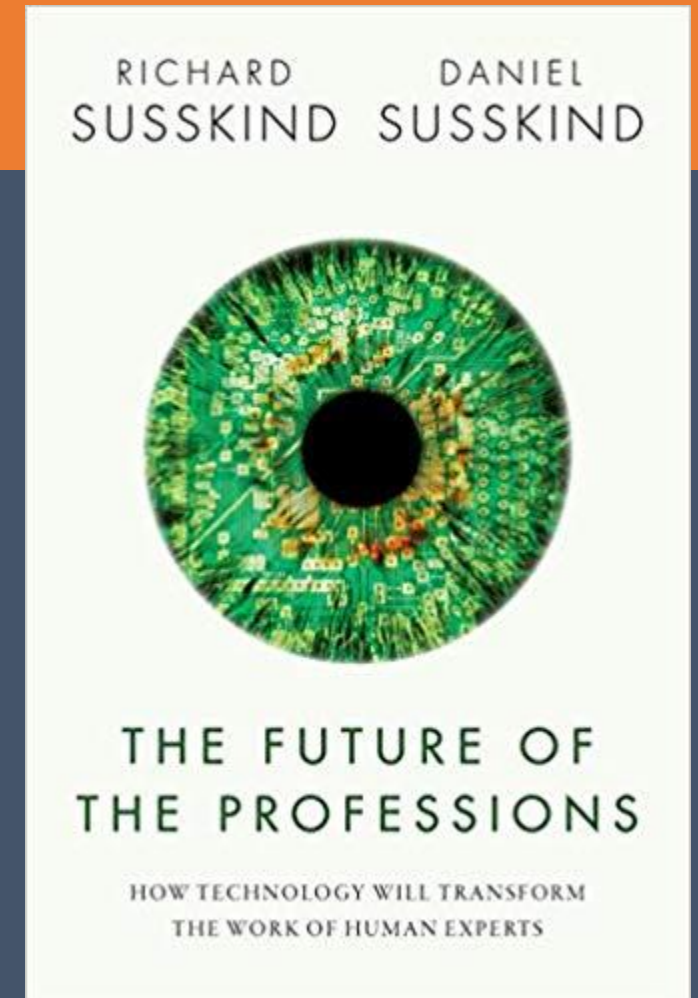
Dedicate
resources and
time



Change the audit
approach from
“tick” to “click”

RECOMMENDED READING

- The Future of Profession
- The Future of Jobs Report – 2018 – World Economic Forum
 - http://www3.weforum.org/docs/WEF_Future_of_Jobs_2018.pdf
- RPA Concept Paper on RPA
 - https://www.icaai.org/new_post.html?post_id=14943
- RPA e-learning by ICAI
 - https://pqc.icaai.org/assets/ICAI_RPA_V4/story_html5.html
- Oct 2018 issue of CA Journal



HOW TO EVALUATE OUR FIRM

- Digital Competency Maturity Model

III. Digital Competency Maturity Model (DCMM) for Professional Accounting Firms – Version 1.0

- A. Level of Automation of the Firm's Internal Processes
- B. Availability of Qualified Resource Pool and Talent Development Relating to Digital Competencies
- C. Level of Automation relating to Audit Processes and Nature of Audit Services Being Rendered

IV. Firm Maturity Rating

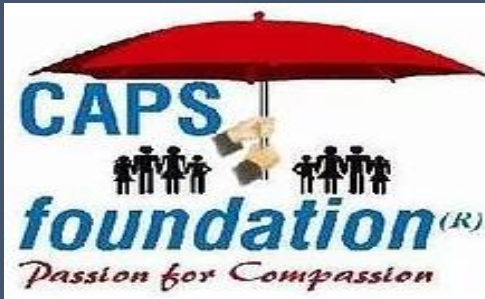
DIGITAL COMPETENCY MATURITY MODEL

(DCMM)^{TM*}

For Professional Accounting Firms

Version 1.0





<https://www.capsfoundation.in/>

Thank You! Questions?



Narasimhan Elangovan

narasimhan@ken-co.in

www.ken-co.in

Online Classes

 APNA COURSE™



Narasimhan Elangovan

Partner at KEN & Co. Chartered Accountants

