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Digital. Cloud. AI-driven.

The Magic Triangle of Digital Masterminds.

Rene Buest

Director of Technology Research

5. Cloud Use Cases Day 2018

March 14, 2018, Olten

ABOUT ME.

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Rene Buest

Director of Technology Research

- 7+ Years Experience as Technology Analyst
- Research Areas
  - Cloud Computing
  - Digital Enterprise
  - Digital Infrastructure & Platforms
- Former Analyst Firms
  - Crisp Research
  - New Age Disruption
  - Gigaom Research

@ReneBuest

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DIGITIZATION
It’s an Evolution, Stupid!

THE DIGITAL EVOLUTION – STEP BY STEP.

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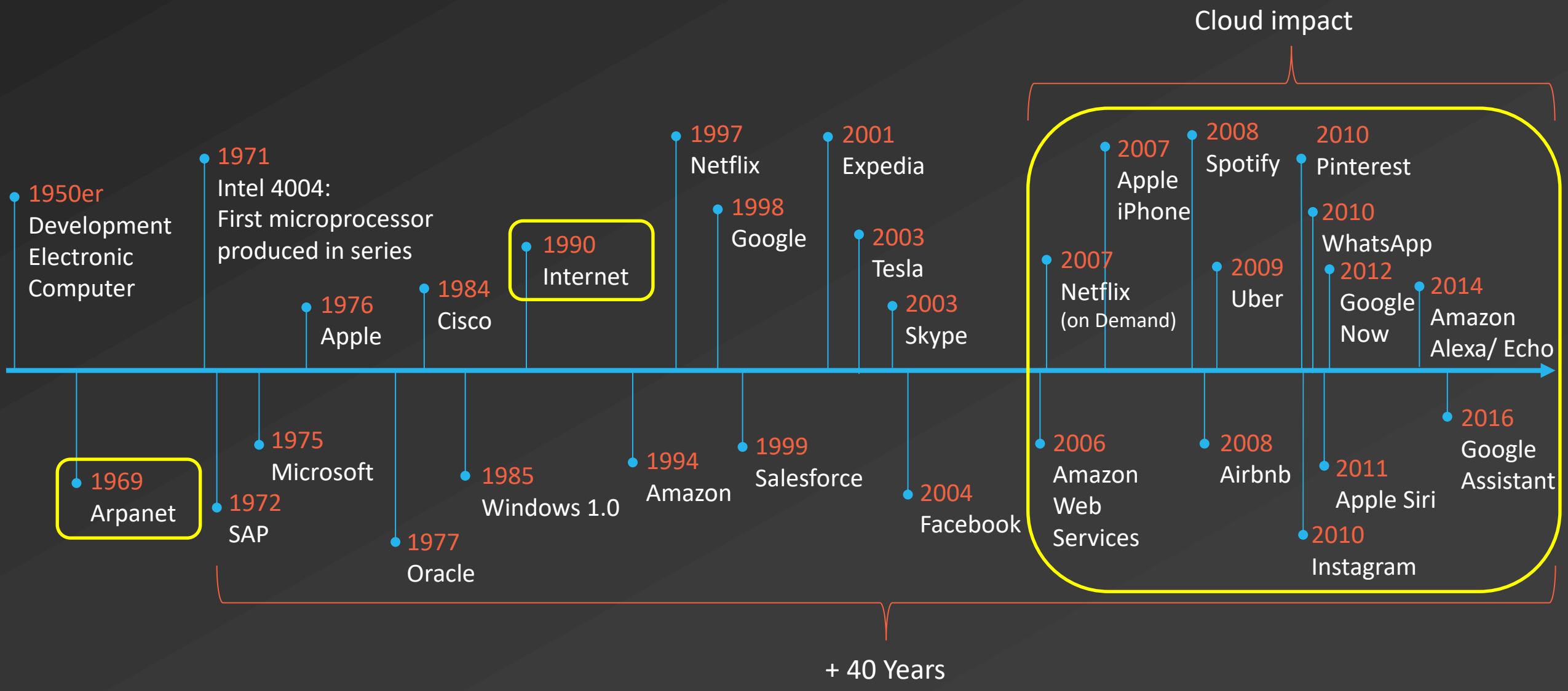

DIGITAL ENTERPRISE EVOLUTION.

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Digital Enterprise Evolution

Digital Enterprise 1.0
(1970 - 2000)

- Mainframes
- Terminal Systems
- Personal Computer
- Local Area Networks
- Client-Server-Architecture
- Enterprise Computing
- Software & Applications
- Internet

Digital Enterprise 2.0
(2001 - 2015)

- Mobile Computing (Smartphones, Tablets)
- Cloud (IaaS, PaaS, SaaS)
- Web-Centric-Architecture
- Software-defined X (SDx)
- API Economy
- Internet of Things (IoT)
- Interconnection with integrated Ecosystems
- Social Media

Digital Enterprise 3.0
(2016 - …)

- End-to-End offerings (Devices + Services)
- Sophisticated Interconnection based on IoT (People, Objects, Locations and more)
- Context-Economy based on Data & Knowledge
- AI-defined World (Smart/ Intelligent Environments)

DIGITIZATION...

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Creating values based on data,

using <code> and interconnections.

PRIME EXAMPLE OF THE DIGITAL EVOLUTION.

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VM 2000 (1971)

[…]

TM3300 (1982–1996)

TM21 (1996–2004)

TM31 (2004–2014)

TM5 (2014 – today)

VORWERK

1961: VKM5 | 1964: VM10 |1968: VM20
1971: VM2000 | 1972: VM 2002 | 1977: VM 2200
1980: TM3000 | 1982: TM3300 | 1996: TM21
2004: TM31 | 2014: TM5

CRM

Organization

Thermomix TM5

Product

Delivery Service

REWE

Partnerships

THE MAGIC TRIANGLE.

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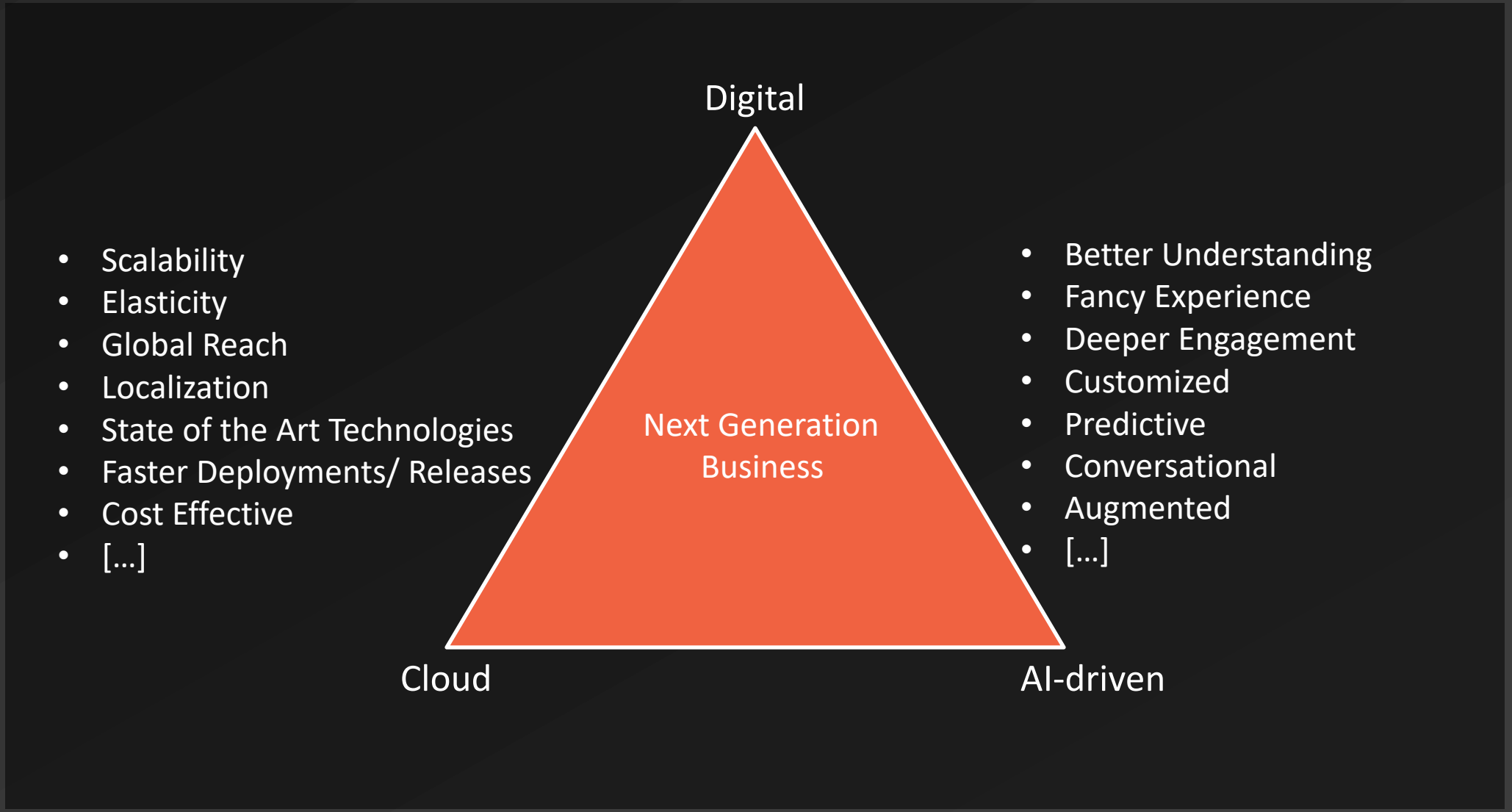

- Scalability
- Elasticity
- Global Reach
- Localization
- State of the Art Technologies
- Faster Deployments/ Releases
- Cost Effective
- […]

- Better Understanding
- Fancy Experience
- Deeper Engagement
- Customized
- Predictive
- Conversational
- Augmented
- […]

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CLOUD
The Essential Foundation.

THE CLOUD HAS ARRIVED. PERIOD!

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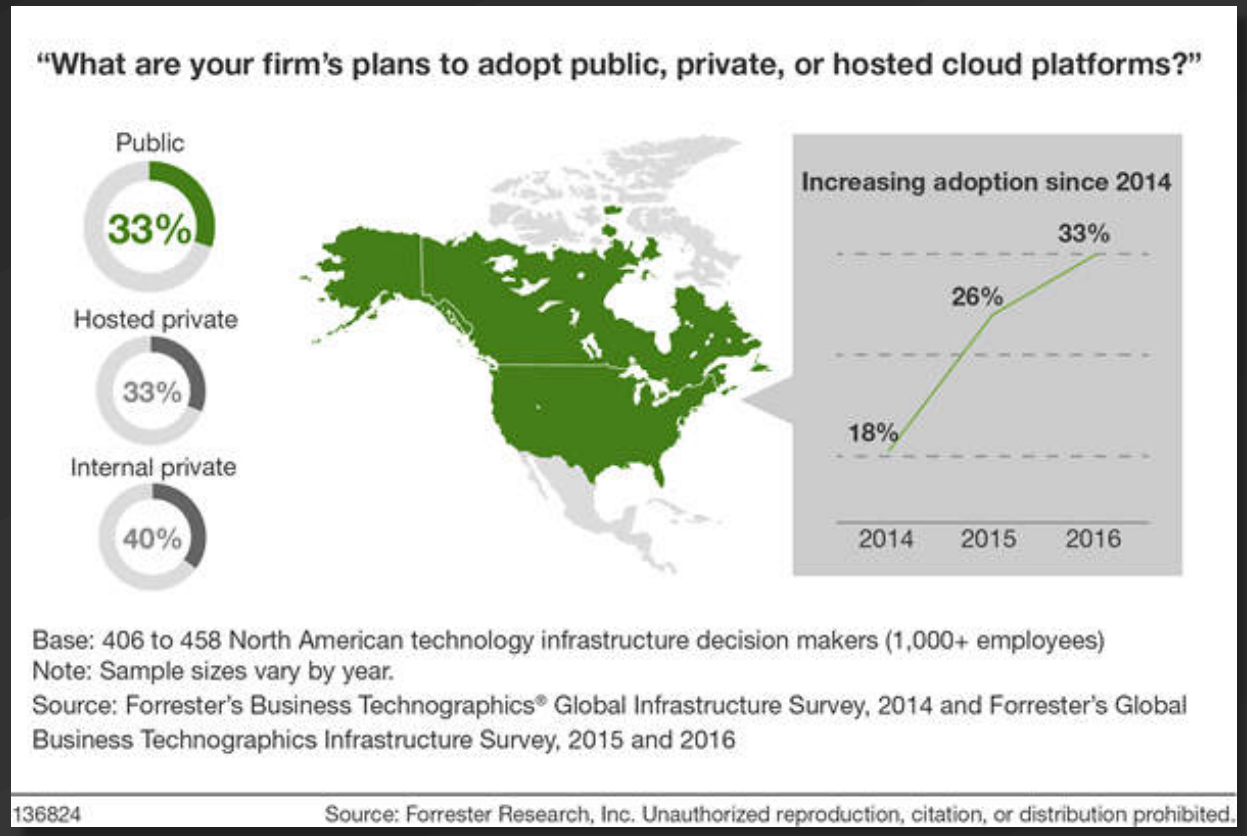

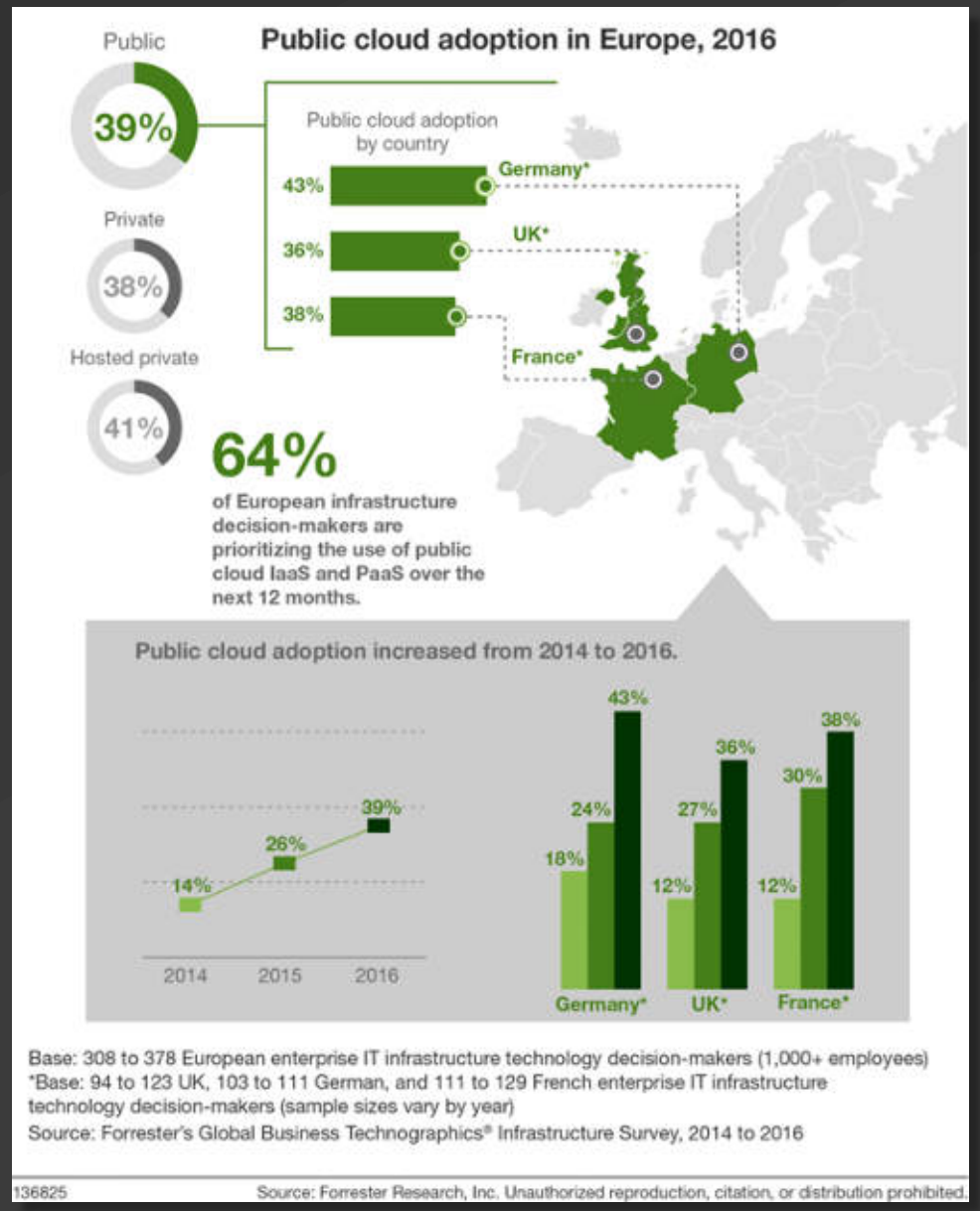

CLOUD: THE ESSENTIAL FOUNDATION.

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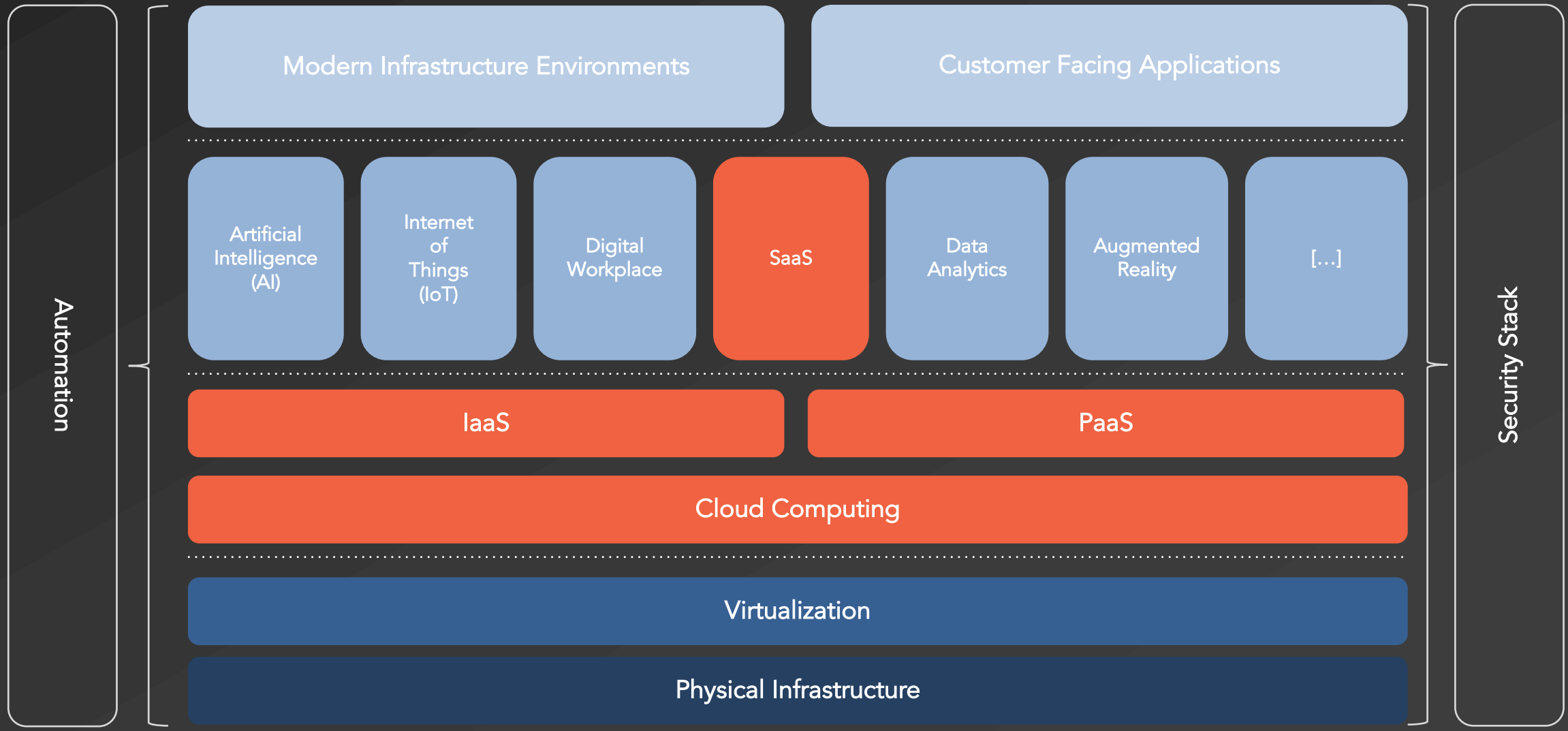

POKEMON GO(ES) RETAIL.

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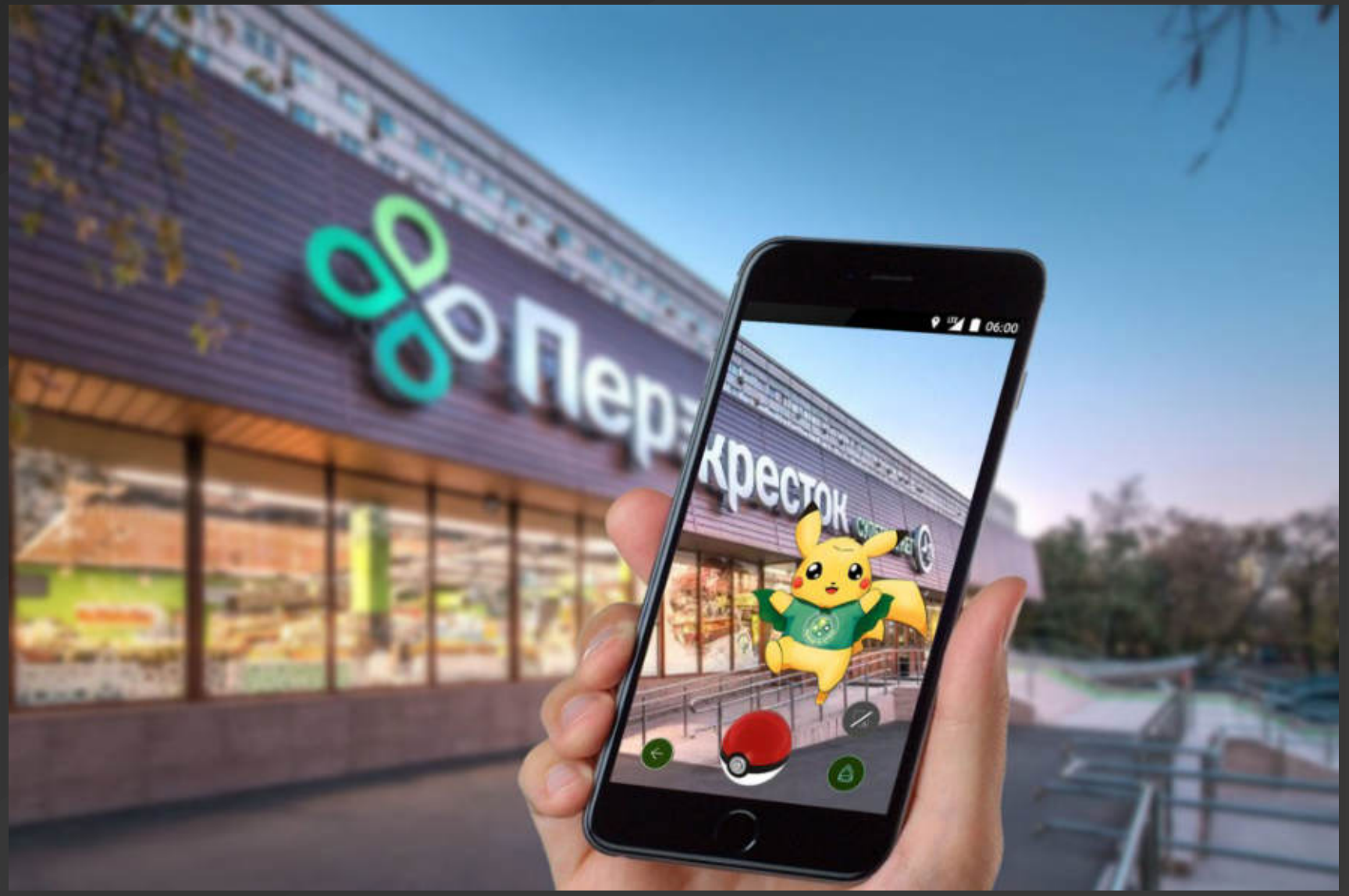

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AI-DRIVEN
The Future of Any Digital Business.

THE DIFFERENCE BETWEEN MARKETING AND SCIENCE.

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1. MACHINES DO NOT UNDERSTAND

They pattern match data to predefined patterns of understanding. Understanding is a question of the size of a data pool, because the more data is matched to something we can understand the more “understanding” a machine seems to have.

2. MACHINES DO NOT HAVE HUMAN LIKE BRAINS

Large neural networks have millions of neurons, brains have billions of neurons. Neural networks only simulate the electrical system in a brain, the brain also has a chemical, potentially a quantum mechanics based system. The layer based modelling of deep learning networks is to simplify training, the brain has no such restrictions. Neural networks are about as far away from a brain in thinking as a snail is from a supersonic jet in speed.

3. MACHINE LEARNING IS NOT EQUAL TO AI

AI research has been an oscillating system between several techniques. Whenever one does not do “the job completely” people get frustrated and turn to another one. Our thinking patterns or our much simpler decision patterns are composed of many techniques. Machine learning is one component of a general AI, not the AI.

AI: THAT'S POSSIBLE TODAY.

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- **Speech recognition and natural language processing and generation**
  - Conversational systems, whereby the computer not only recognizes what the person is saying but can also engage in a longer dialogue.
- **Predictions using machine learning and knowledge engineering**
  - Netflix leverages a variety of machine learning techniques to optimize its recommendations and personalization.
- **Image recognition in combination with machine learning and deep learning**
  - A machine vision system can detect flaws on a production line that are difficult for a human to identify and it can do so more quickly.
- **Advanced discovery techniques**
  - Machines can beat humans any time when it comes to searching through vast amounts of information -- structured e.g. from transaction or financial systems or unstructured e.g. legal texts, medical literature or call center notes.

With content from Forrester Inc.

THAT'S WHAT YOU PROBABLY KNOW AS ARTIFICIAL INTELLIGENCE.

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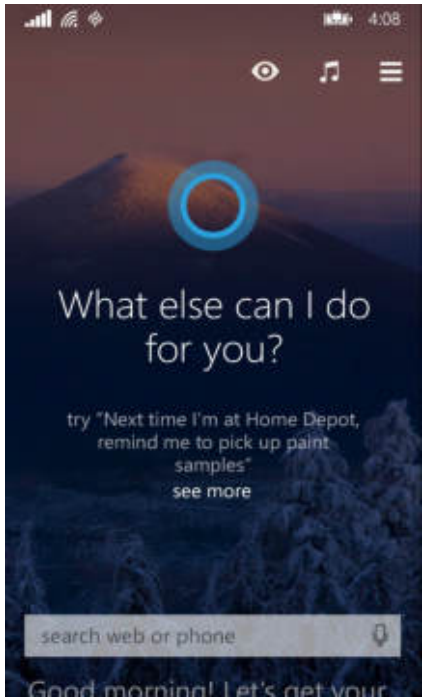
Apple Siri



Microsoft Cortana

Google Now (Home)

Amazon Alexa (Echo)

CUSTOMER INTERACTION (1).

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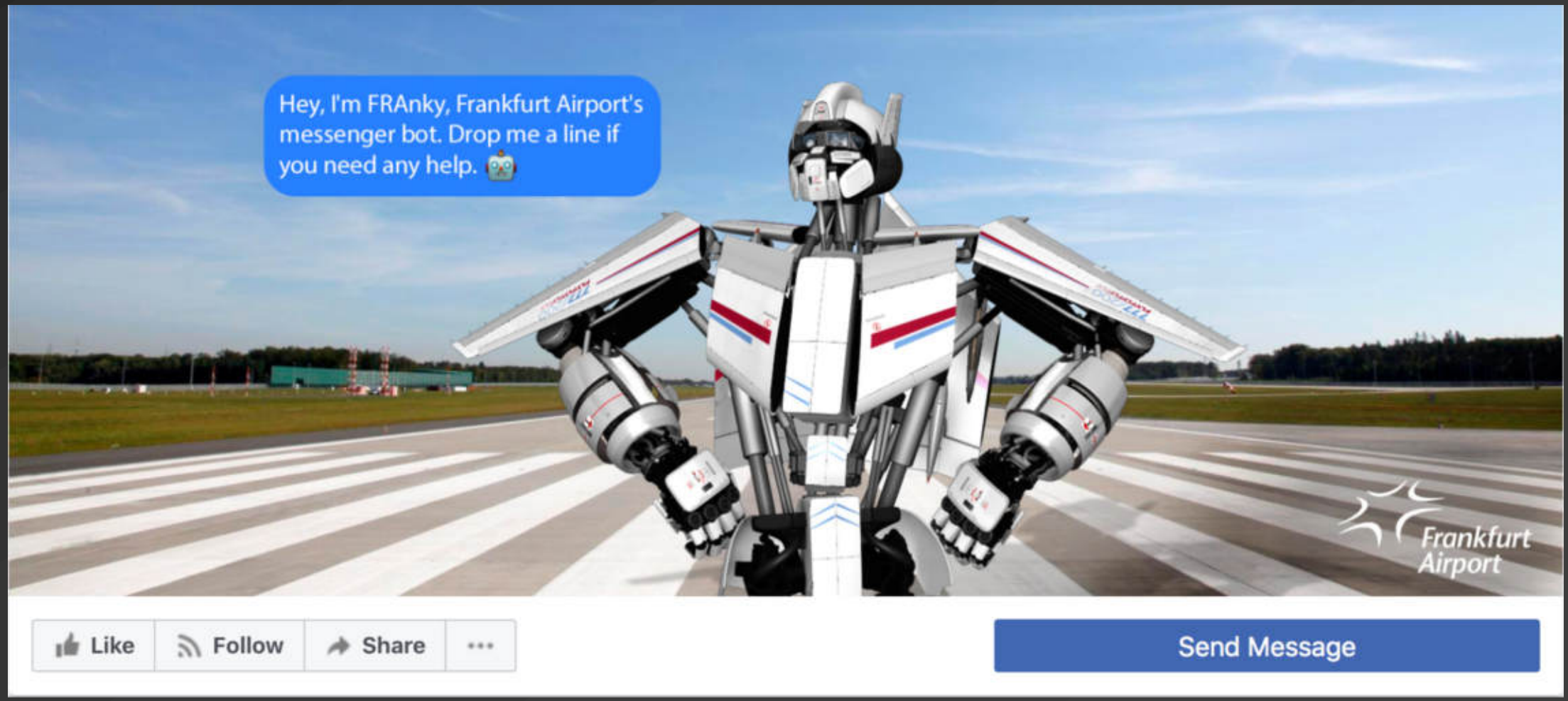

CUSTOMER INTERACTION (2).

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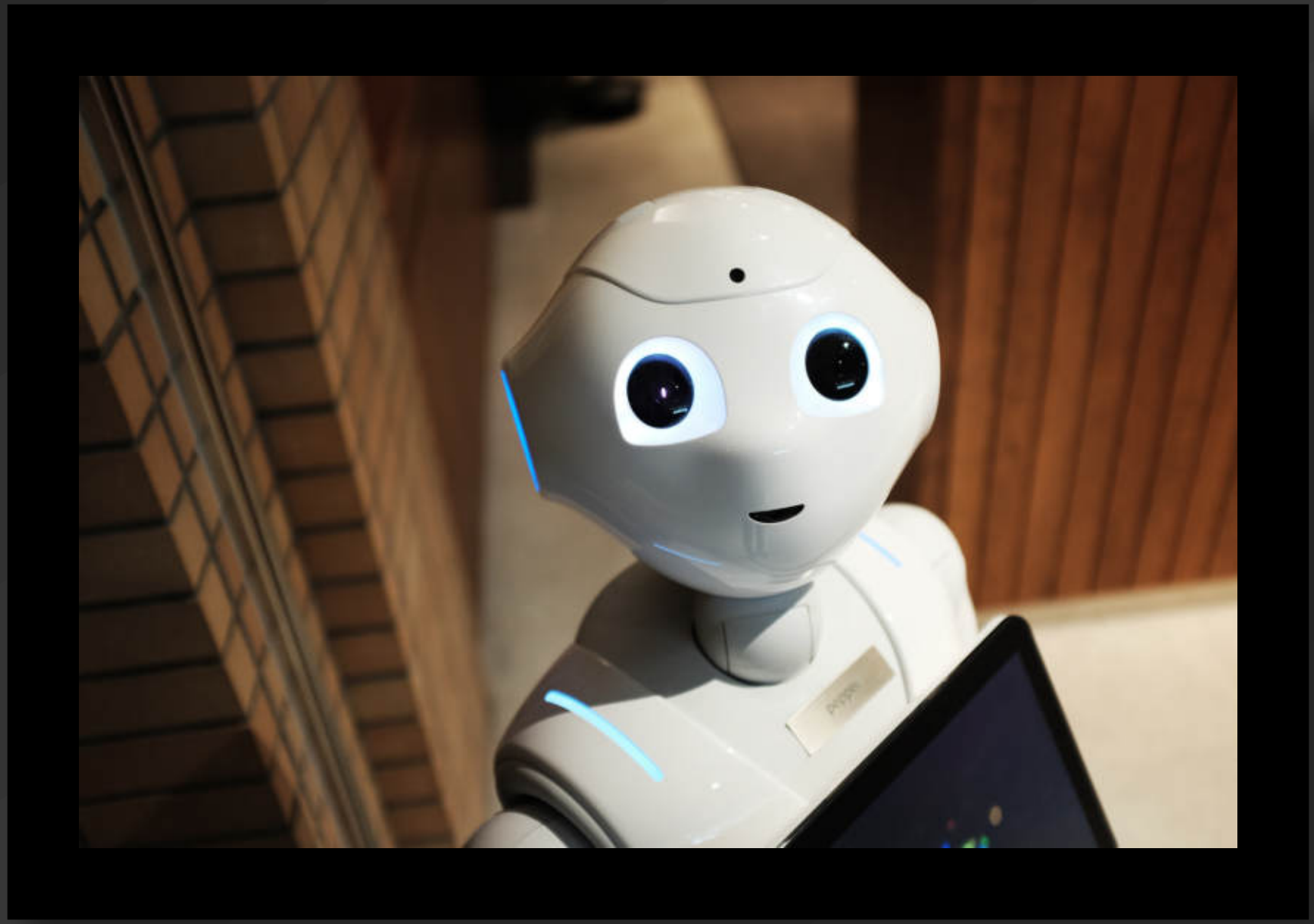

WEB-CENTRIC RECOMMENDATION SYSTEMS.

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ROBOTIC VACUUM CLEANER – EVENTUALLY CLEAN.

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SMART GARDENING.

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BANK RETAINS KNOWLEDGE BY USING AI.

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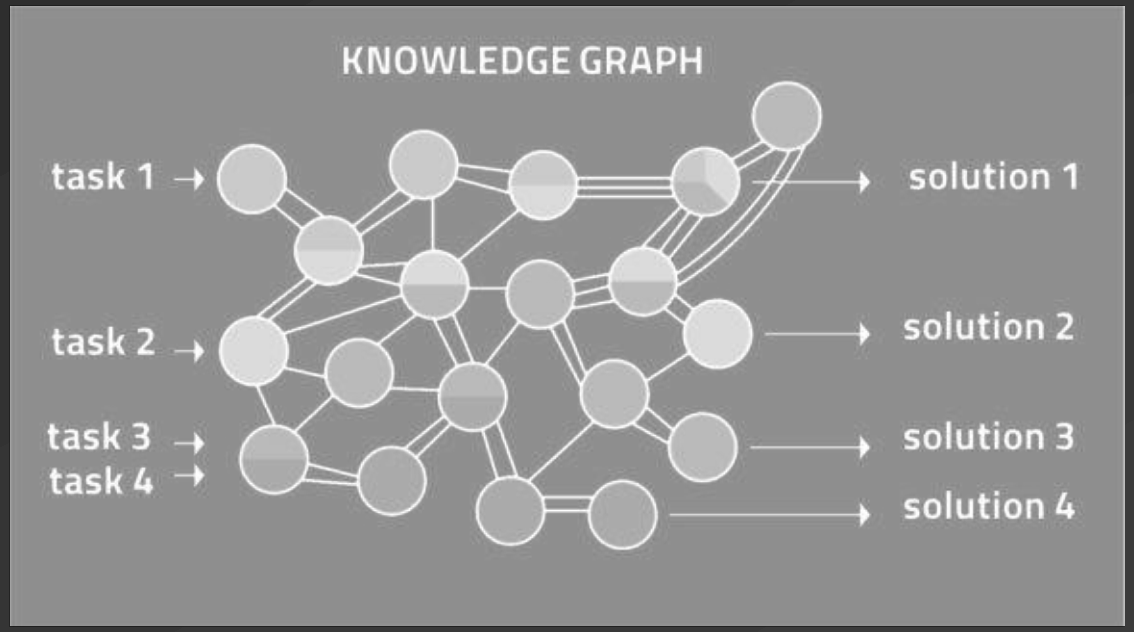
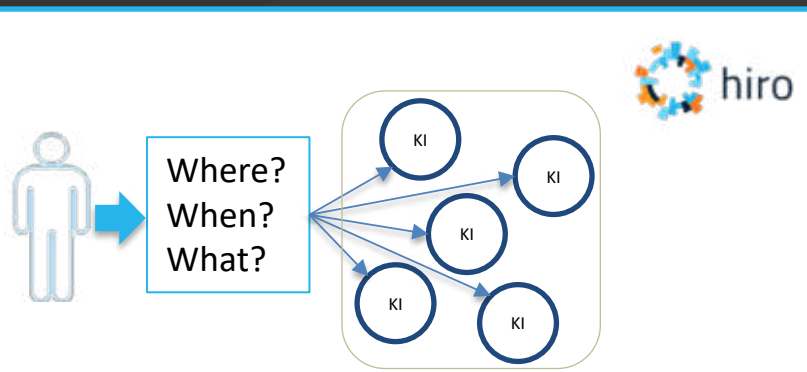
1. Autonomous process automation for IT and business.
2. Increasing efficiency and effectiveness.
3. Preservation of knowledge and experience.



Knowledge Items (KIs)



1. Document small pieces of knowledge.
2. Put knowledge about environment and situation into KIs.
3. Triggering the right KIs to solve problem in any combination required.
4. Create new, reusable KIs to fill any knowledge gaps.

OTHER USE CASES FOR AI-DRIVEN BUSINESS PROCESSES.

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- **Industry:** Aviation – Base Maintenance
- **Case:** Improve overhaul turnaround times by augment planning crews to execute tasks more efficiently.

- **Industry:** Aviation – Engine Maintenance
- **Case:** Improve engine overhaul turnaround times by automate the fact-based decision making process.

- **Industry:** Aviation – Component Placement
- **Case:** Improve material procurement process by autonomously steering material for exception case to ensure availability.

- **Industry:** Specialty Chemicals
- **Case:** Autonomously breed an animal while considering mixture of nutrition, supplements etc. that are tailor-made and adapted to growth process, health state etc.

- **Industry:** Insurance
- **Case:** Autonomous creation of global insurance policies while considering knowledge of local and international regulations.

- **Industry:** Robotics
- **Case 1:** Cooperative workplace - decision making for voice-controlled robot.
- **Case 2:** AI-powered robot learning.

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DIGITAL CORRELATION
Everything Is Directly Interconnected.

DIGITAL CORRELATION.

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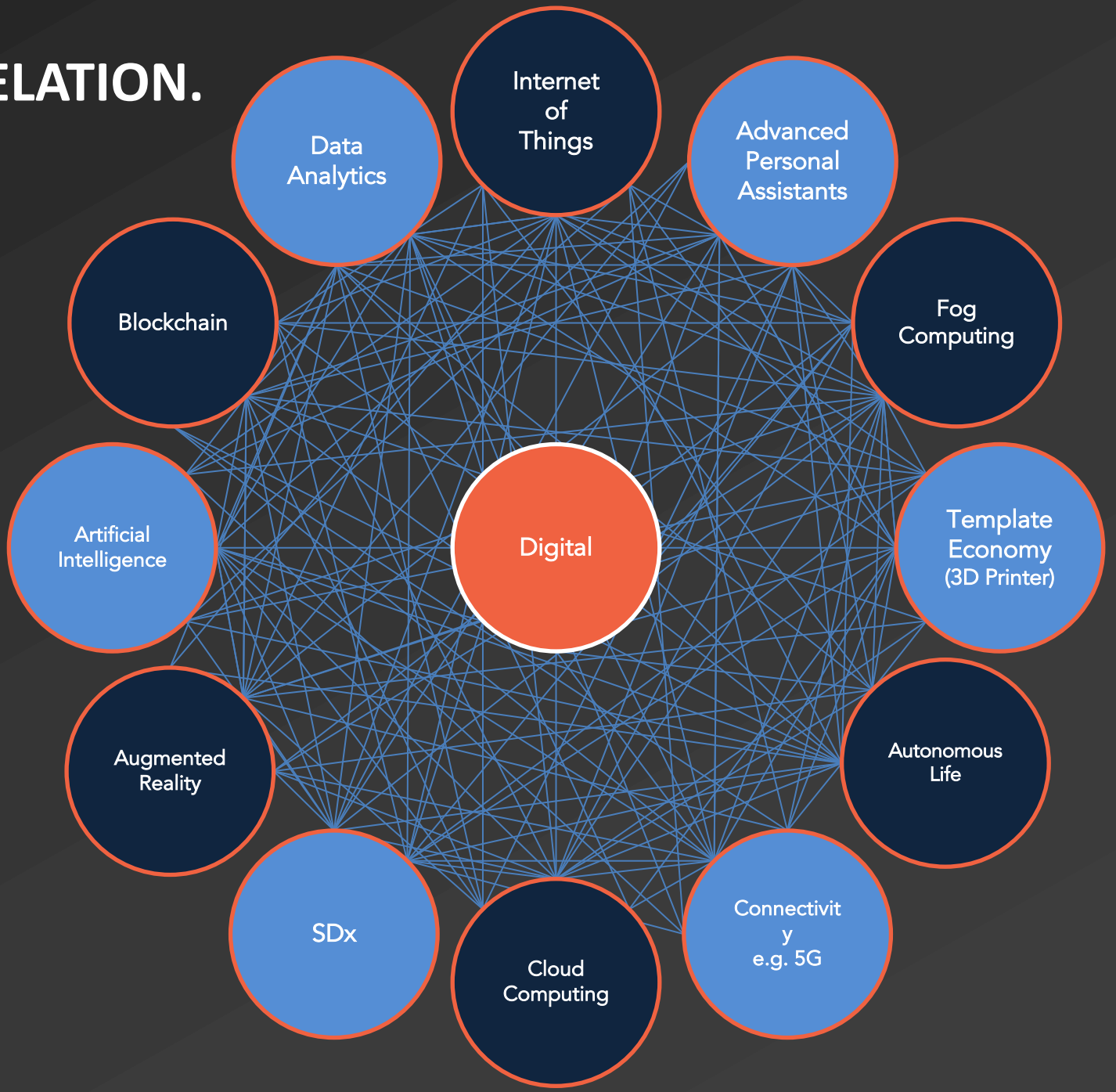

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THANK YOU

GET IN TOUCH.

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OTHER RESOURCES

HIRO™ Story shows data from real HIRO installations across a multitude of clients with IT operations as a sample set. See automation rates by technology or process and examine how HIRO combines many possible solutions out of few Kis to solve a large variety of problems.

HIRO™ Portal provides statistical information to monitor, track and analyze automation activities. It also provides resources for enterprises to improve their automation rates. Furthermore, the portal allows users to manage existing licenses and installations as well as to create new licenses.

HIRO™ Community is where KIs can be shared, requested and reviewed collaboratively by logged-in users and Arago's experts. It also offers an enterprise functionality where KIs and KI bundles can be shared exclusively within organizations.

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