Kecerdasan Bisnis Terapan

Future Trends, Privacy and Managerial Considerations in Analytics

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Sumber awal: http://mail.tku.edu.tw/myday/teaching/1071/BI/1071BI13_Business_Intelligence.pptx

Business Intelligence (BI)

1. Introduction to BI and Data Science
2. Descriptive Analytics
3. Predictive Analytics
4. Prescriptive Analytics
5. Big Data Analytics
6. Future Trends

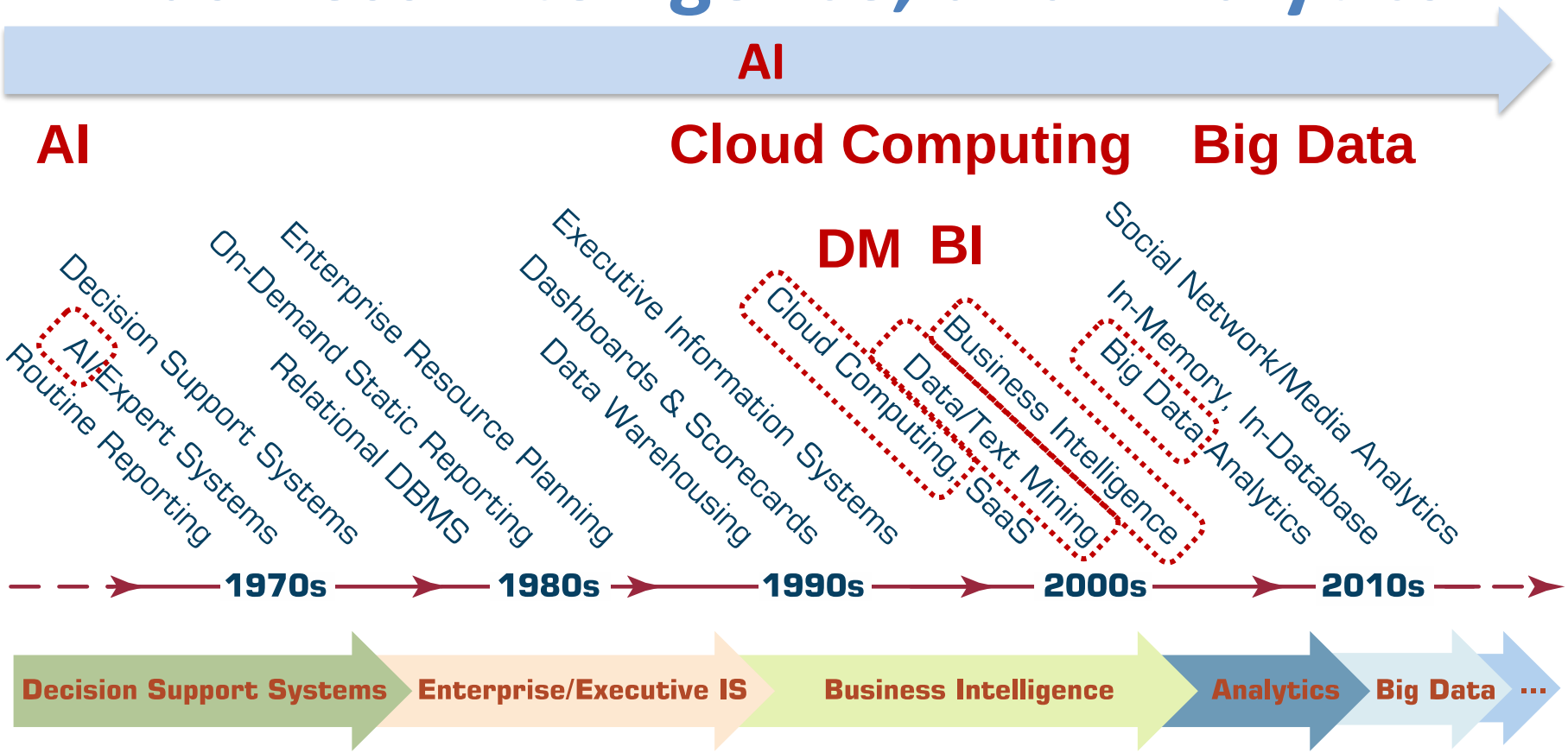
Future Trends, Privacy and Managerial Considerations in Analytics

Outline

- Internet of Things (IoT)
- Cloud Computing and Business Analytics
- Location-Based Analytics for Organizations
- Issues of Legality, Privacy, and Ethics
- Impacts of Analytics in Organizations
- Data Scientist as a Profession

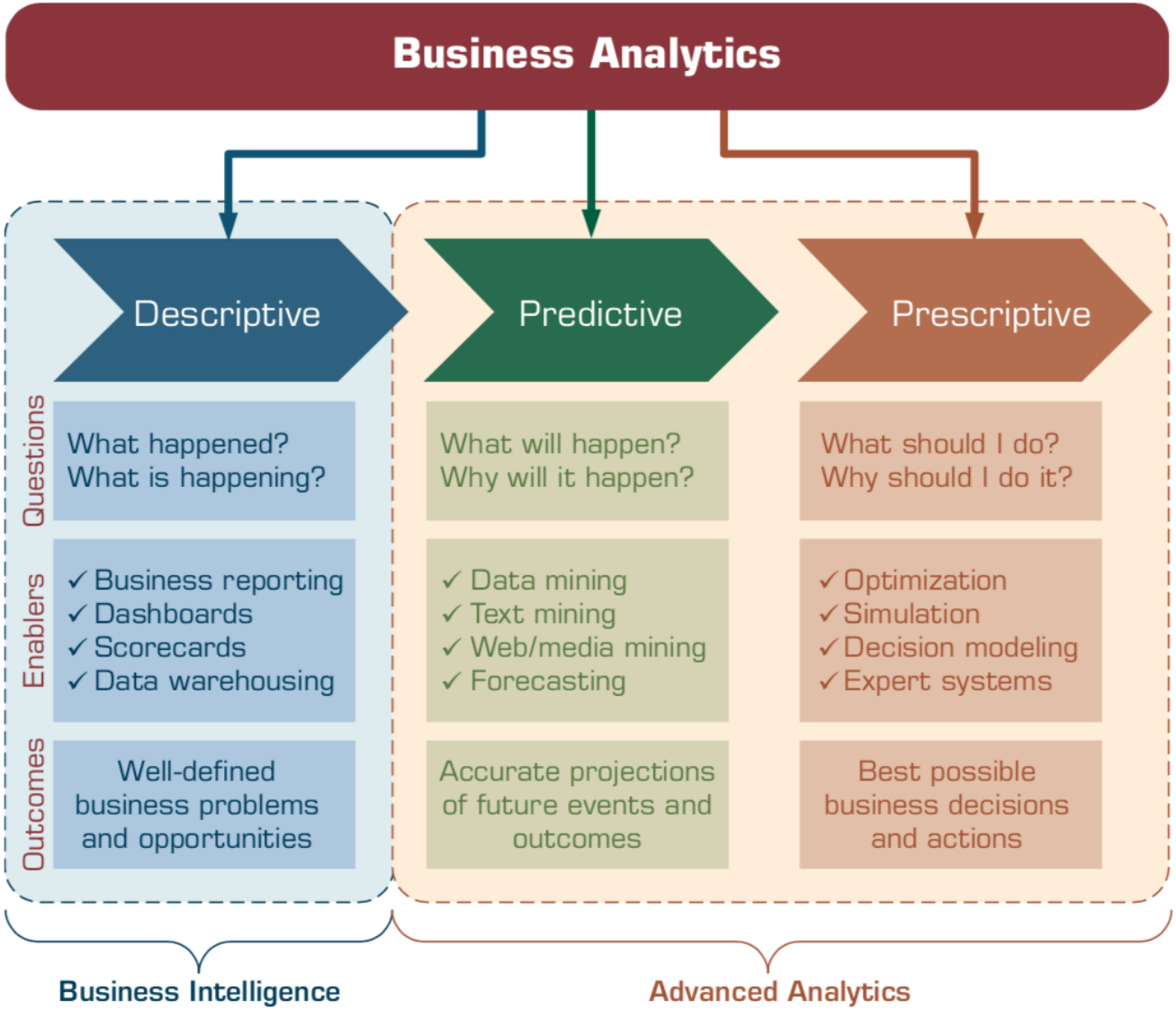
AI, Big Data, Cloud Computing

Evolution of Decision Support, Business Intelligence, and Analytics



Source: Ramesh Sharda, Dursun Delen, and Efraim Turban (2017),
Business Intelligence, Analytics, and Data Science: A Managerial Perspective, 4th Edition, Pearson

Business Intelligence and Business Analytics



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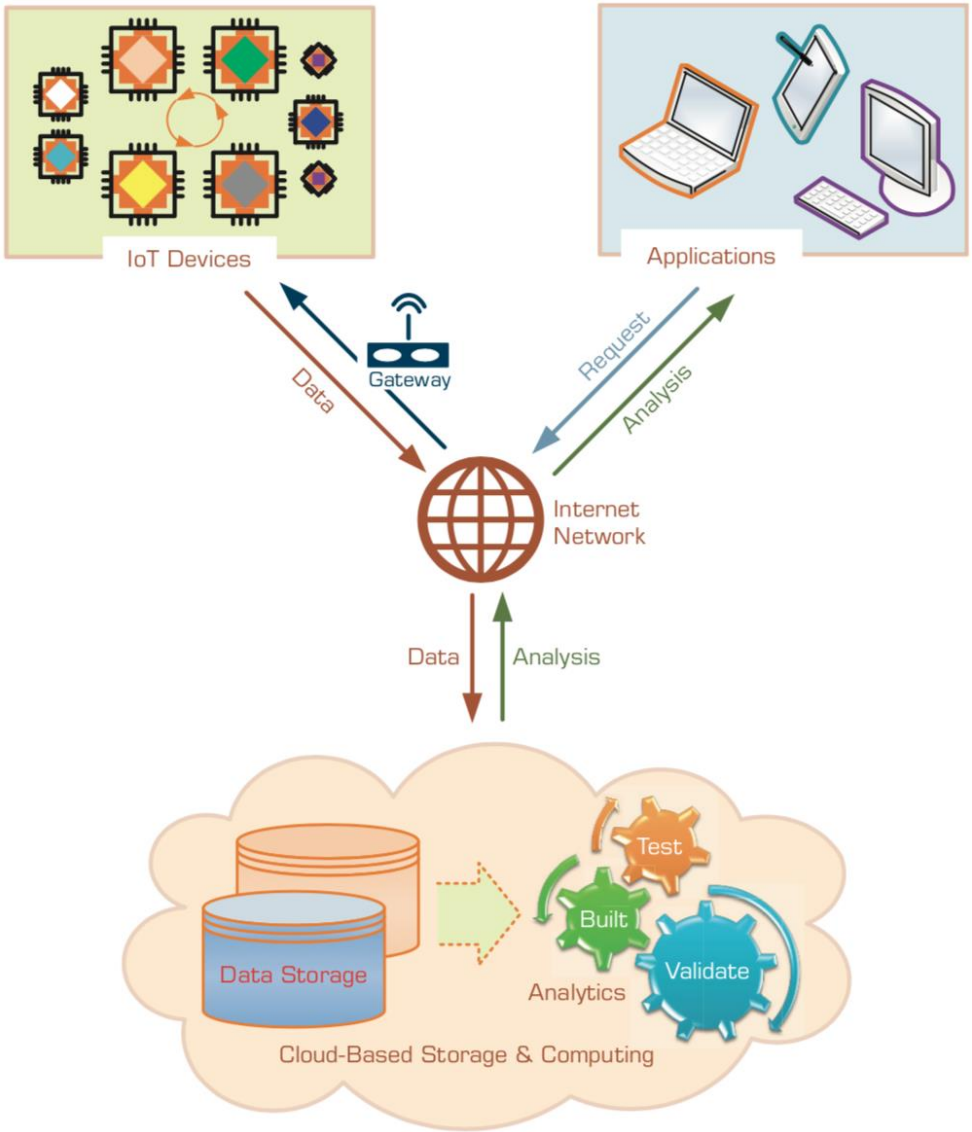
Building Blocks of IoT Technology Infrastructure



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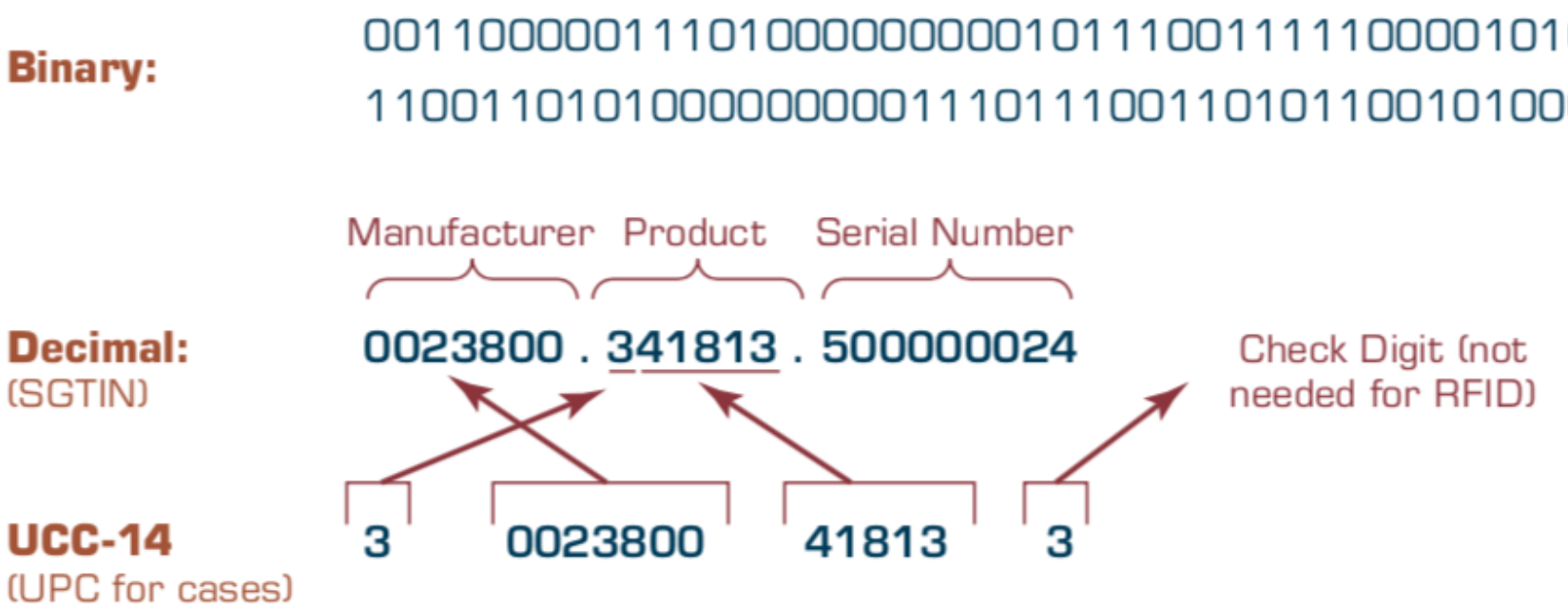
RFID Data Tag



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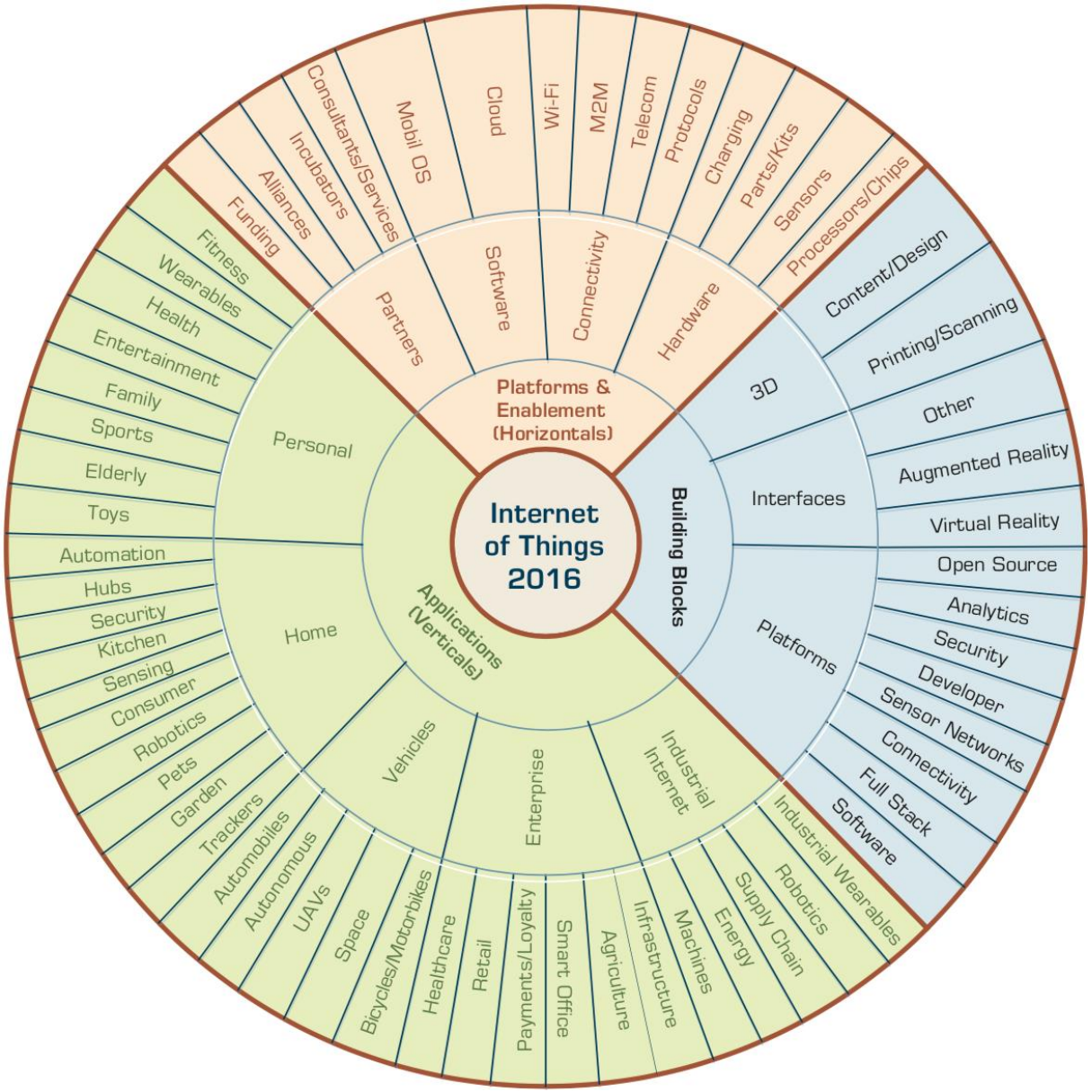
Difference between Fog Nodes and a Cloud Platform

Fog Nodes	Cloud Platform
Receive data from IoT devices	Receives and aggregates data from fog nodes
Run IoT real-time analytics in millisecond response time	Analysis is performed on huge amounts of business data and can take hours or weeks

Internet of Things Ecosystem



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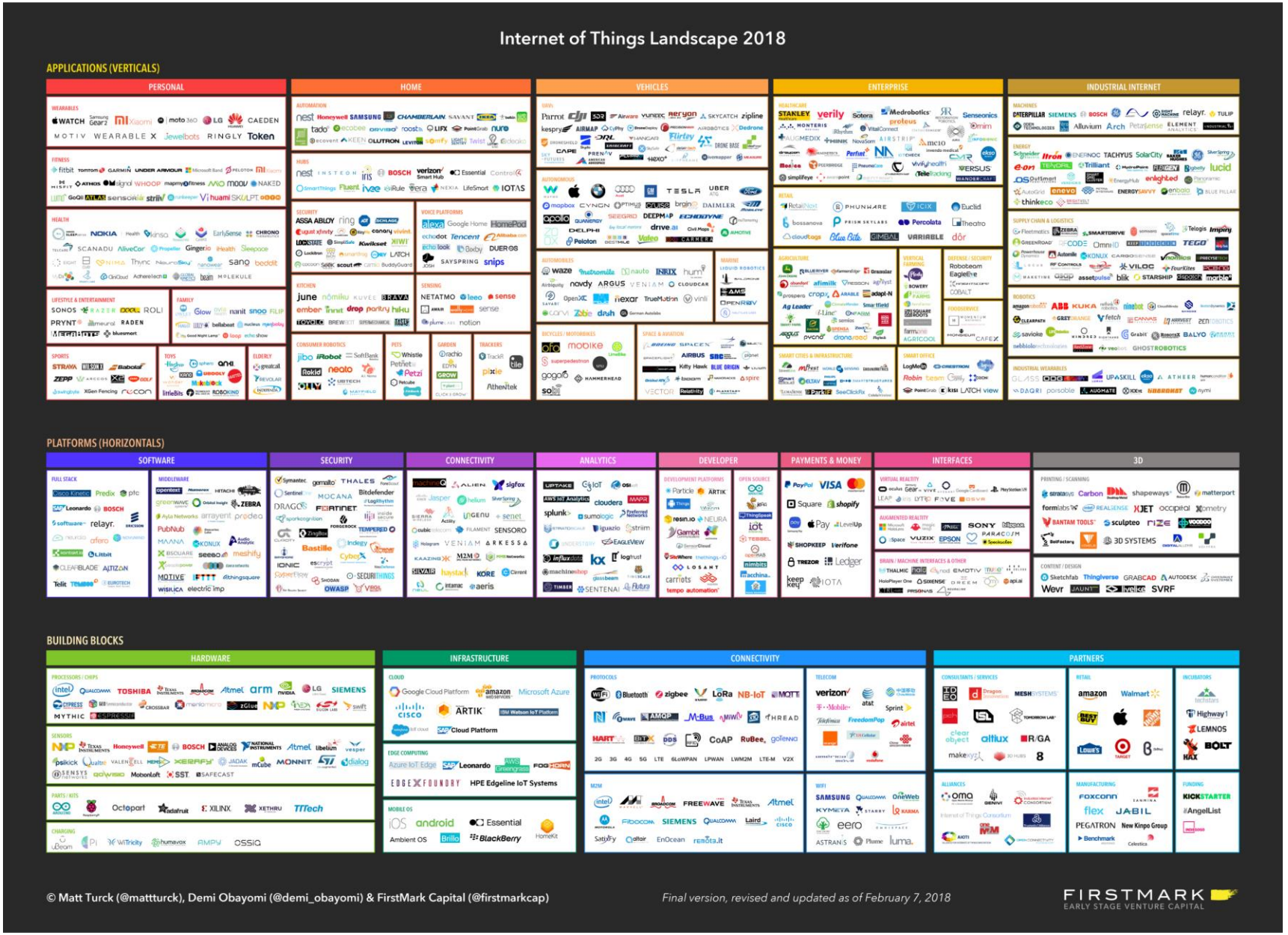
Internet of Things Landscape 2018



Source: Matt Turck (2018), Internet of Things Landscape 2018, http://mattturck.com/iot2018/

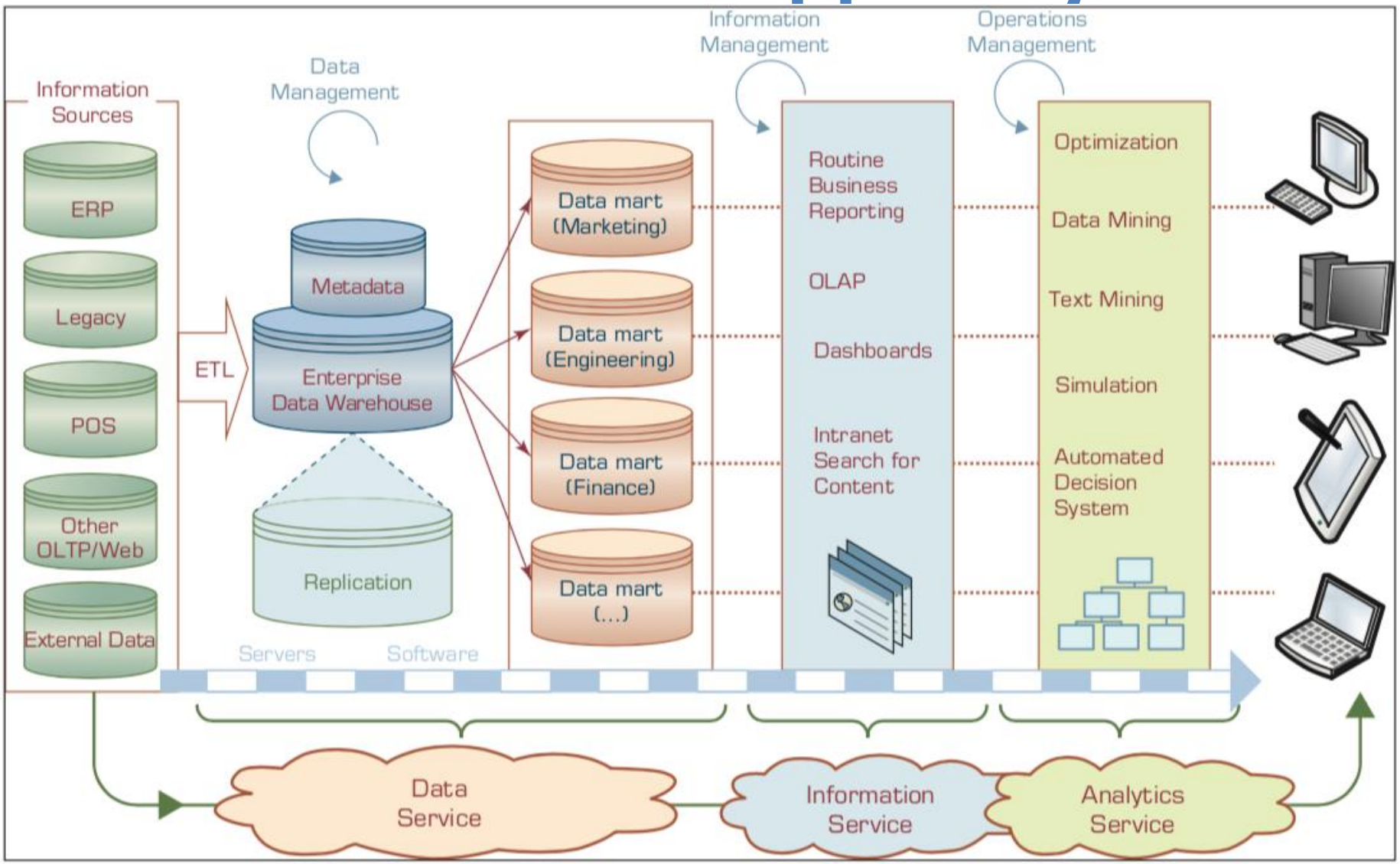
Managerial Considerations in the Internet of Things

- Organizational Alignment
- Interoperability Challenges
- Security

Cloud Computing and Business Analytics

- The National Institute of Standards and Technology (NIST) defines **cloud computing** as "a model for enabling convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, and services) that can be rapidly provisioned and released with minimal management effort or service-provider interaction."

Conceptual Architecture of a Cloud-Oriented Support System



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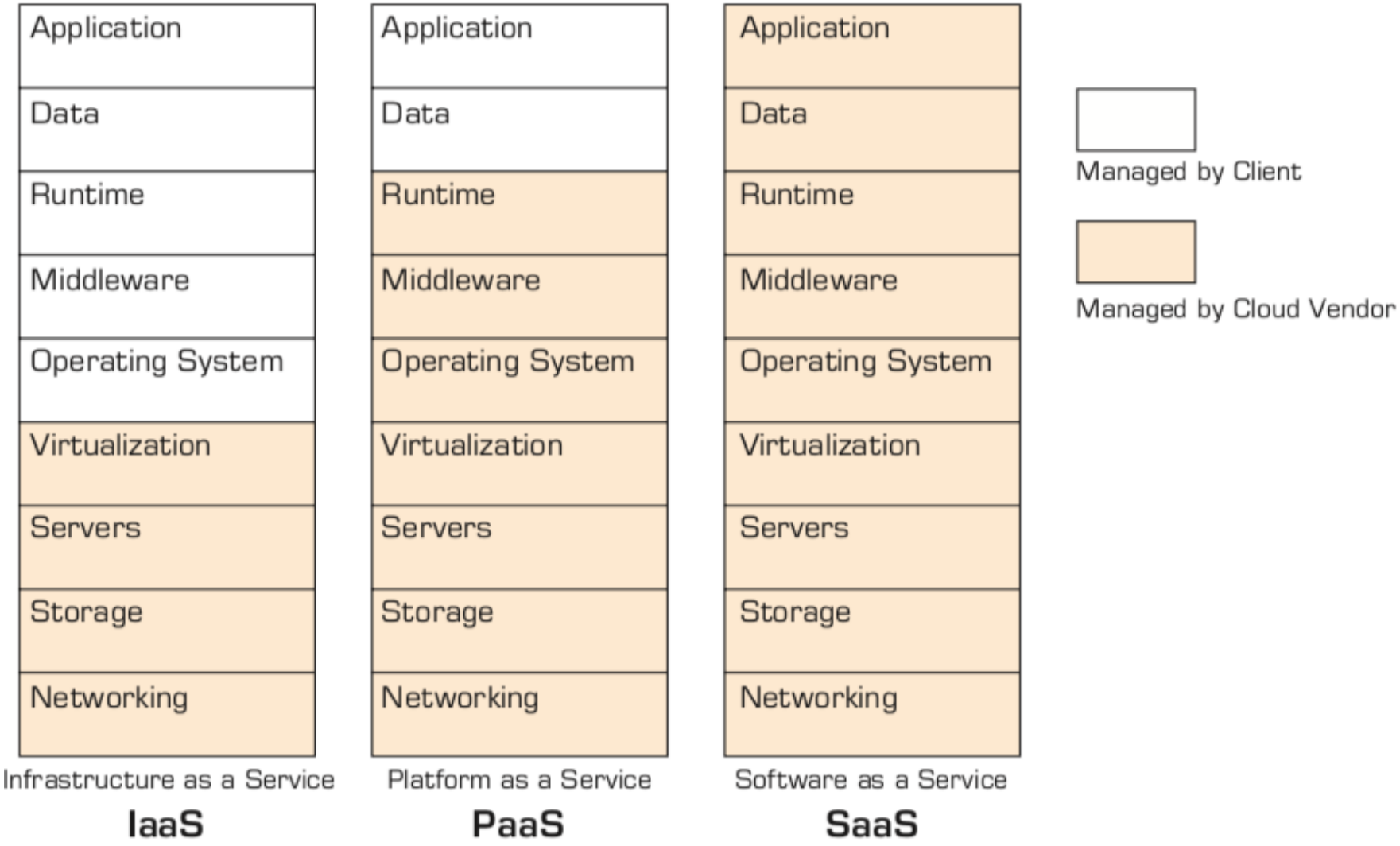
Infrastructure, Platform, Software, Data, Information, and Analytics as a Service

- Analytics as a Service (AaaS)
- Data as a Service (DaaS)
- Software as a Service (SaaS)
- Platform as a Service (PaaS)
- Infrastructure as a Service (IaaS)

Technology Stack as a Service for Different Types of Cloud Offerings



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Essential Technologies for Cloud Computing

- VIRTUALIZATION
  - Virtualization is the creation of a virtual version of something like an operating system or server
  - Virtualization can be in all three areas of computing:
    1. Network virtualization
    2. Storage virtualization
    3. Server virtualization

Cloud Deployment Models

- Private cloud
  - internal cloud or corporate cloud
- Public cloud
  - the subscriber uses the resources offered by service providers over the Internet
    - Microsoft Azure platform
    - Google App Engine
    - Amazon AWS
- Hybrid cloud
  - moving workloads between private and public cloud

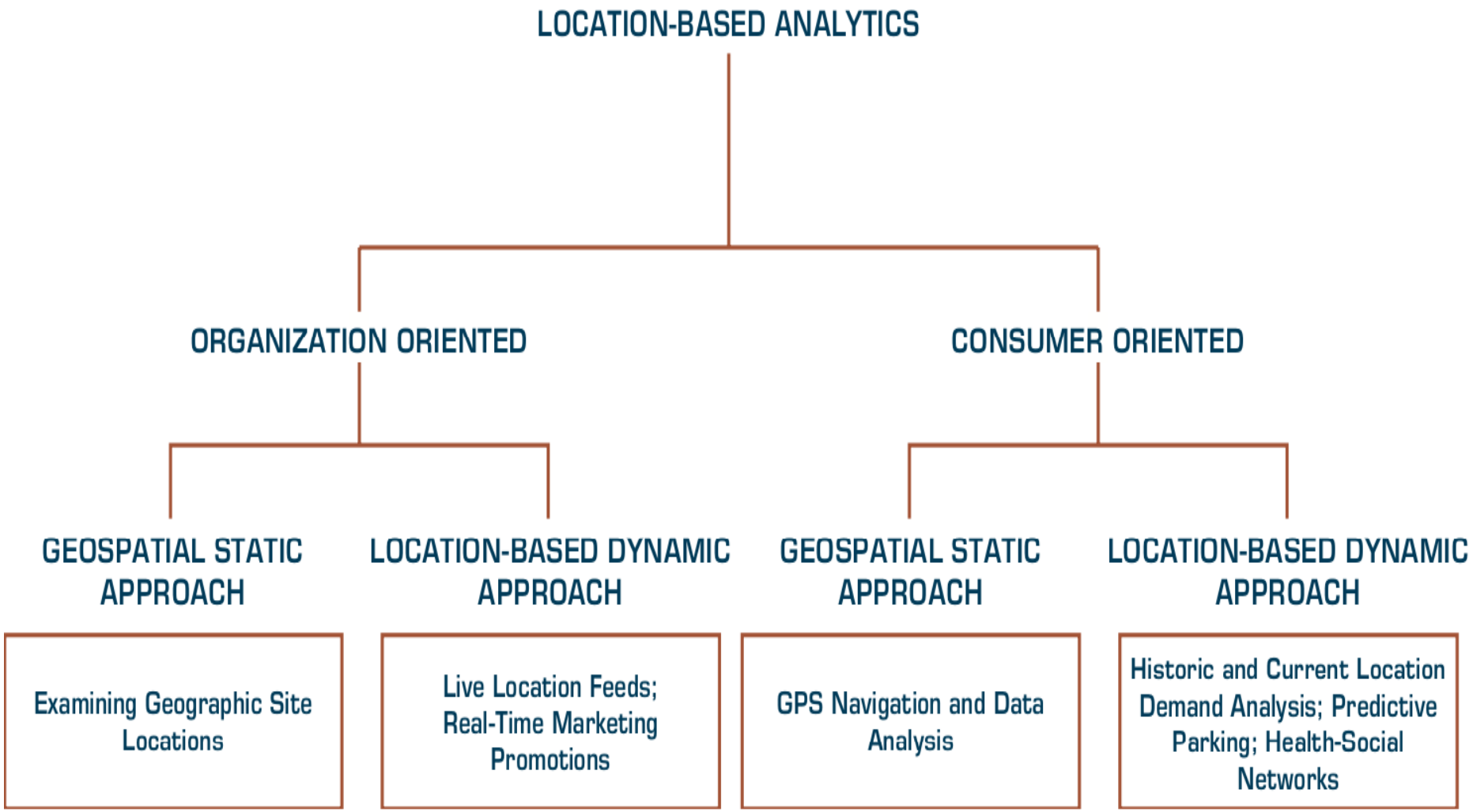
Major Cloud Platform Providers in Analytics

- Amazon Elastic Beanstalk
- IBM Bluemix
- Microsoft Azure
- Google App Engine
- OpenShift

Representative Analytics as a Service (AaaS) Offerings

- ASTER ANALYTICS AS A SERVICE
- IBM WATSON ANALYTICS
- MINEMYTEXT.COM
- SAS VISUAL ANALYTICS AND VISUAL STATISTICS
- TABLEAU
- SNOWFLAKE
- PREDIX BY GENERAL ELECTRIC

Classification of Location-Based Analytics Applications



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Issues of Legality, Privacy, and Ethics

- **Legal Issues**
  - What is the value of an expert opinion in court when the expertise is encoded in a computer?
  - Who is liable for wrong advice (or information) provided by an intelligent application?
  - What happens if a manager enters an incorrect judgment value into an analytic application and the result is damage or a disaster?
  - Who owns the knowledge in a knowledge base?
  - Can management force experts to contribute their expertise?

Privacy Issues

- Privacy means different things to different people.
- **Privacy** is the right to be left alone and the right to be free from unreasonable personal intrusions.
- Two rules of privacy

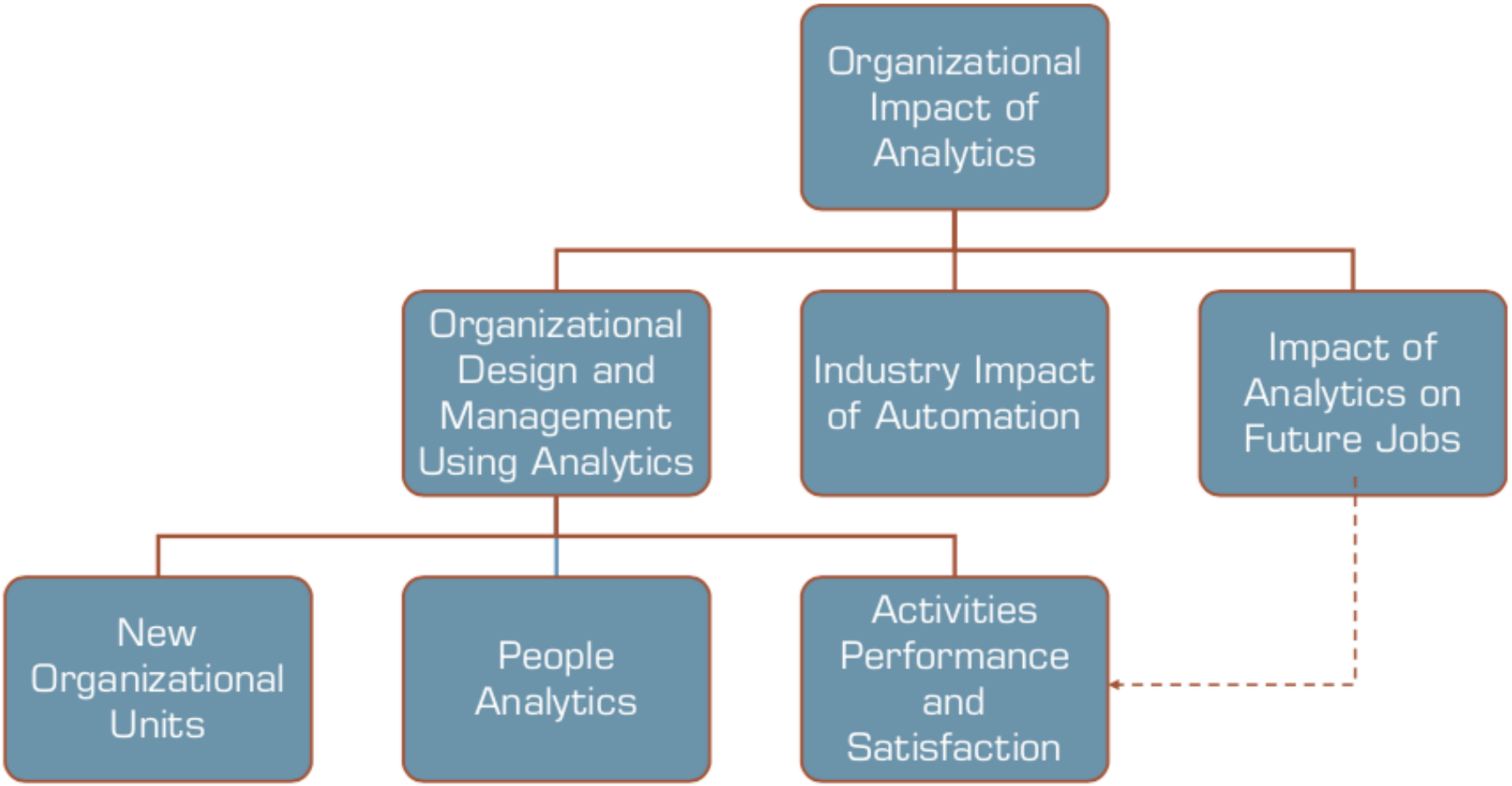
  (1) the right of privacy is not absolute. Privacy must be balanced against the needs of society.

  (2) The public's right to know is superior to the individual's right to privacy.

Ethics in Decision Making and Support

- Electronic surveillance
- Ethics in DSS design
- Software piracy
- Invasion of individuals' privacy
- Use of proprietary databases
- Use of intellectual property such as knowledge and expertise
- Exposure of employees to unsafe environments related to computers
- Computer accessibility for workers with disabilities
- Accuracy of data, information, and knowledge
- Protection of the rights of users
- Accessibility to information
- Use of corporate computers for non-work-related purposes
- How much decision making to delegate to computers

Impact of Analytics on Organizations



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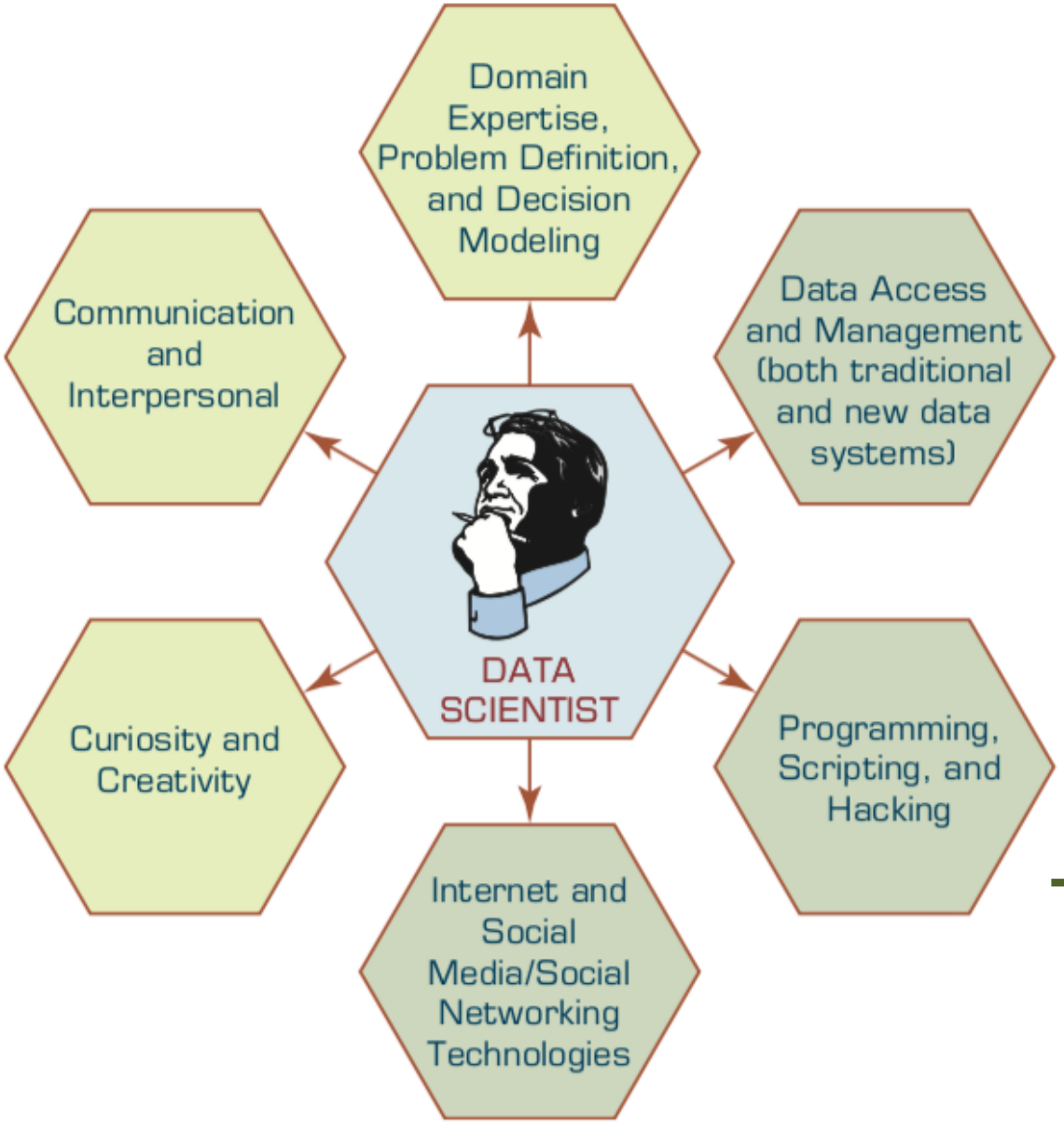
Data Scientist as a Profession

- Data scientist is a role or a job frequently associated with Big Data
- Data scientists use a combination of their business and technical skills to investigate Big Data
  - looking for ways to improve current business analytics practices (from descriptive to predictive and prescriptive) and
  - hence to improve decisions for new business opportunities.

Skills that define a Data Scientist

Soft Skills



Technical Skills

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Summary

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