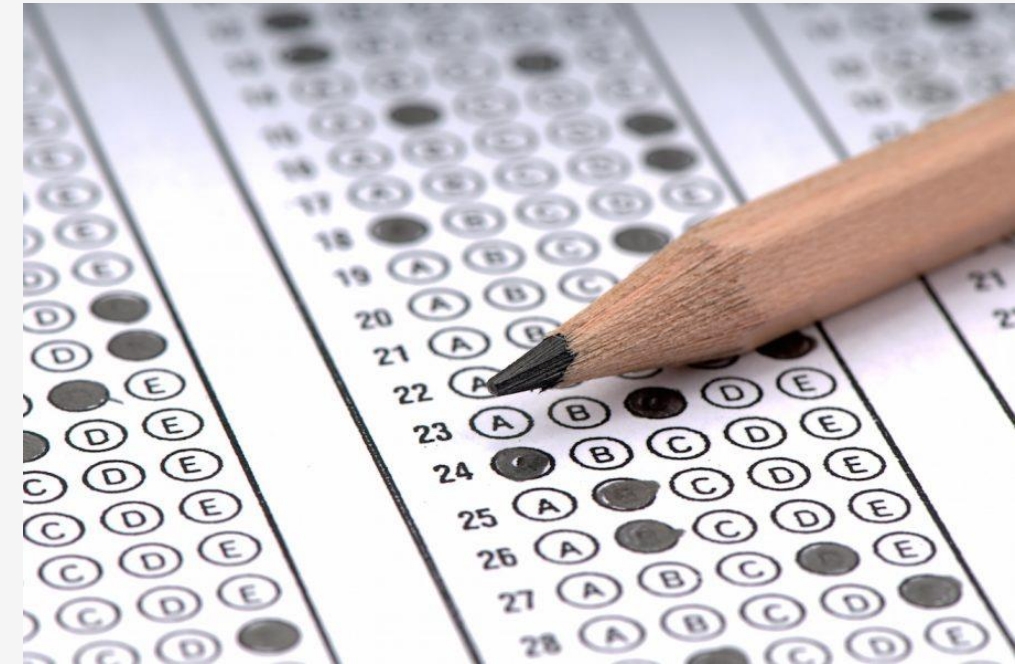FOX | MIS
Management Information Systems

MIS 2101
Exam 2 Review

Exam Will Cover Discussions: week 3 & 4

- **Readings, Videos and Lectures (60%)**
  - ERP & CRM
  - Data Analytics & SCM
  - Platform, Cloud computing & API
  - Cybersecurity & AI

- **Mini-Case – Demonstrate your ability to apply (40%)**
  - Swim Lane Diagram
  - ERD

TEMPLE UNIVERSITY

FOX MIS

Advice

How to prepare…

Review the slide decks

Review assigned readings

Information Systems - Part 1

Topics and Required Reading

What is ERP?

5 ERP Trends

What is CRM?

Missing the Most Important Part of CRM

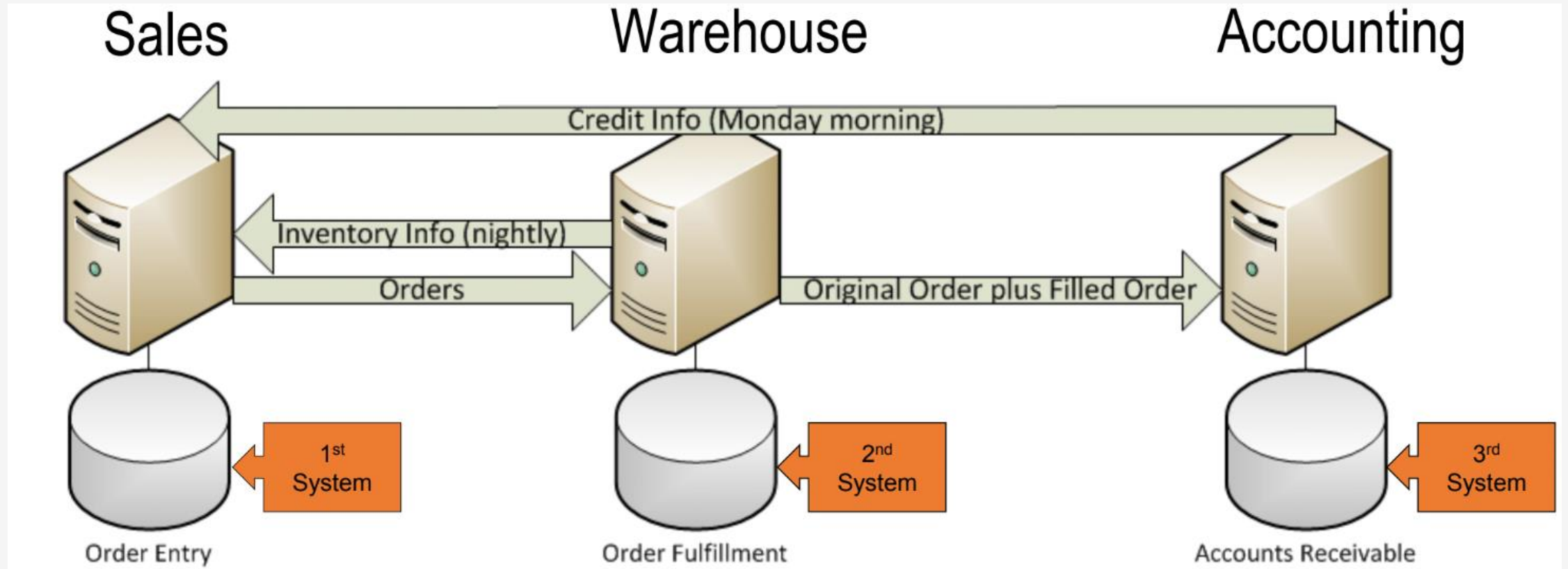CRM vs. ERP: What's the Difference?

3 CRM Use Cases

What is ERP?

Enterprise Resource Planning

- Software or a System that
  - Integrates functions
  - Streamlines processes
  - Manage core business

Legacy Systems

ERP – Key Takeaways

How does ERP create value?

- Integrated Database

  - **One copy of data**

- Collaboration

  - Improves decision making

- Flexibility & Mobility

  - Access anywhere/anytime

- Lower costs

What is CRM?

Customer Relationship Management

- Who uses CRM?
    - Sales
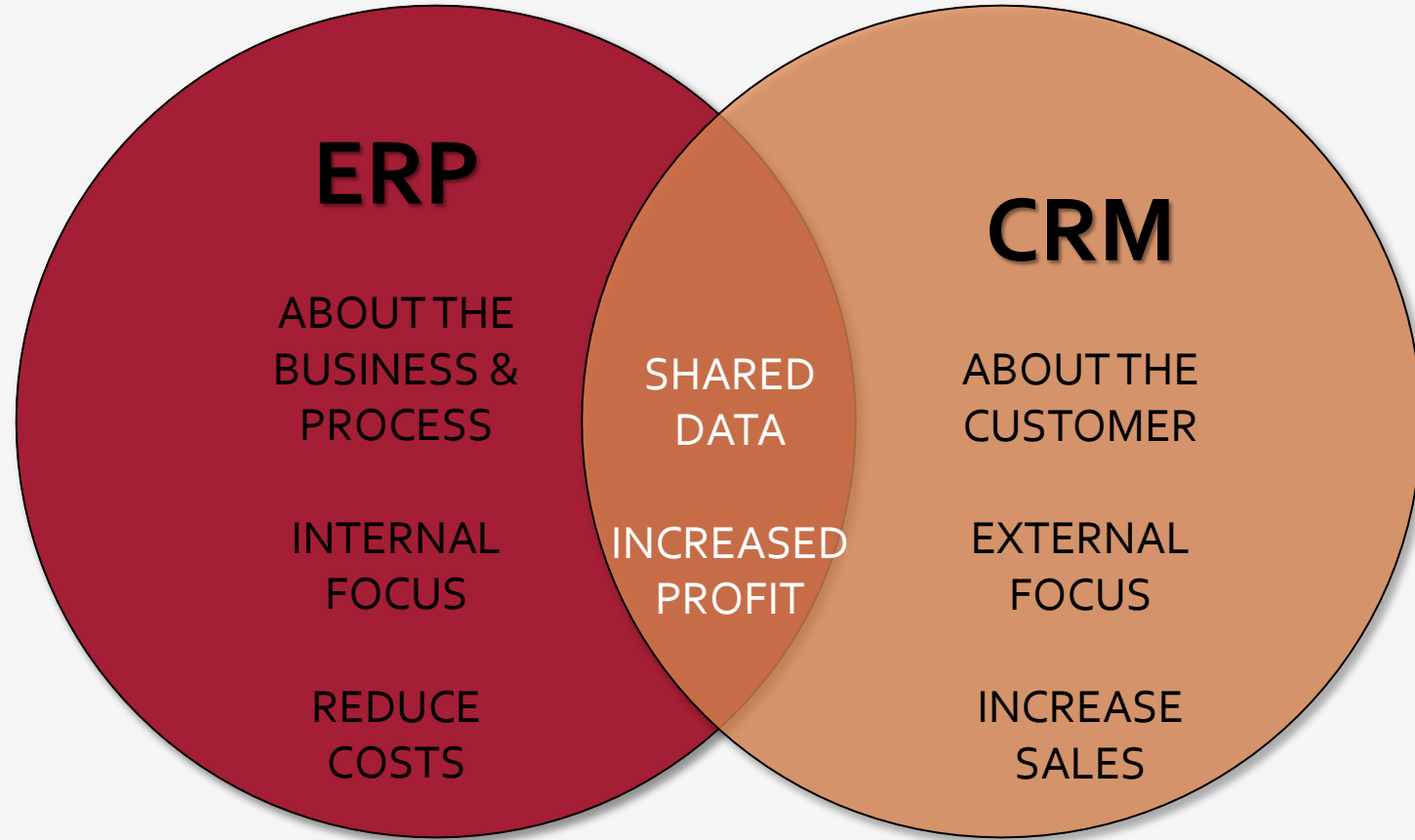   - Marketing
    - HR
    - Accounting

CRM Benefits

- Maximize Profits

- Understand Your Customer (data)

  – Analyze buying patterns

  – Problem solve

- Accountability

- Customer Communication

ERP & CRM

- **What's the Difference?**

- **What do they have in common?**

- **Which is a better first investment for a business?**

- **Why?**

ERP

ABOUT THE BUSINESS & PROCESS

INTERNAL FOCUS

REDUCE COSTS

SHARED DATA

INCREASED PROFIT

CRM

ABOUT THE CUSTOMER

EXTERNAL FOCUS

INCREASE SALES

Information Systems – Part II

Topics and Required Reading

What Is The Difference Between Data Analysis And Data Visualization?
What is BI?
Companies Are Failing in Their Efforts to Become Data-Driven
Disney's $1 Billion Bet on a Magical Wristband
McDonald's Bites on Big Data With $300 Million Acquisition
How Companies Say They're Using Big Data

What is Data Analytics?

"The use of tools & people to uncover hidden patterns in the data that might not be readily available to the naked eye"

– Professor Lavin

3 types of analytics

- Descriptive – Dashboards (BI)

- Predictive – use past data to model future

- Prescriptive – Optimization – advise on how best to do your job.

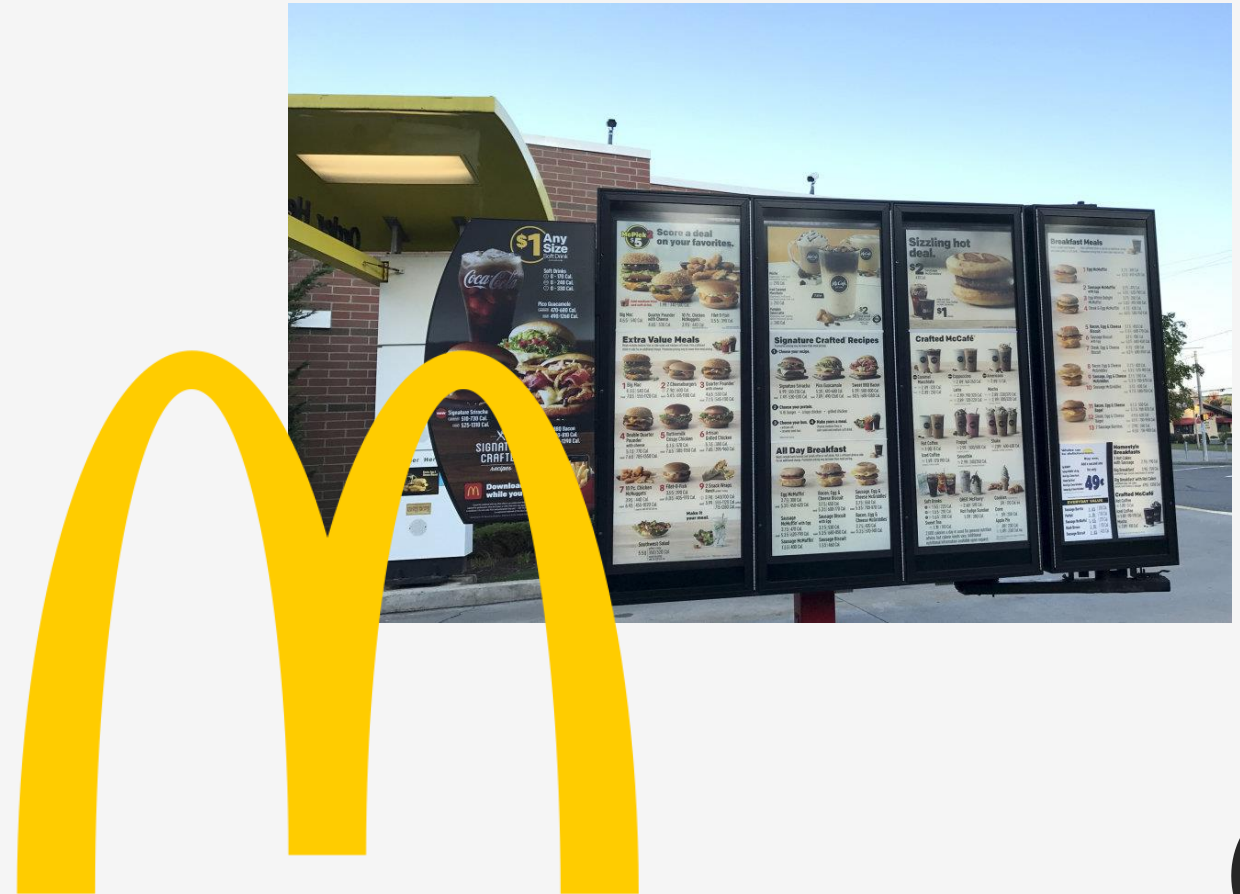# Data Investments… Why Care?

Top Reasons Why:

- Decrease Expenses

- Find New Innovations

- Launch New Products/Services

- Increase Efficiency
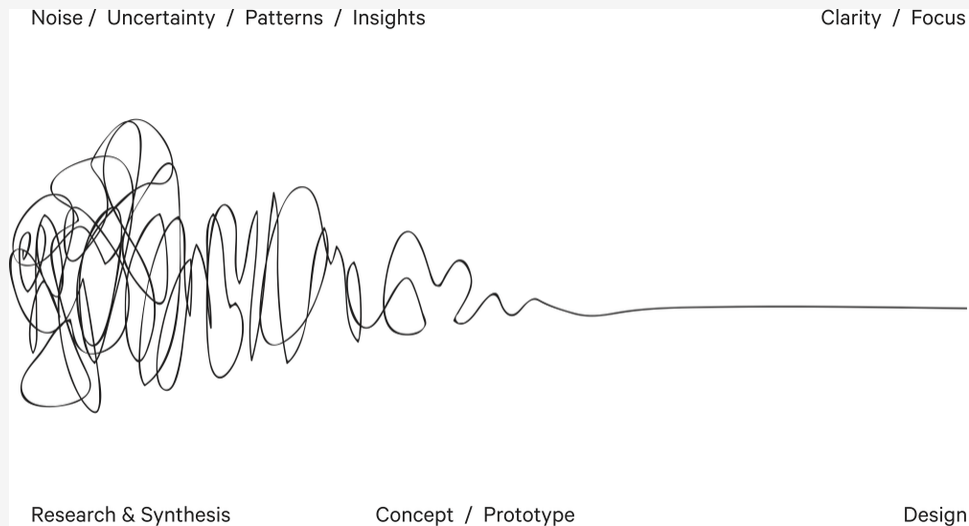
- Transform Business

- Establish Data-Driven Culture

McDonald's & Big Data

300 Million Acquisition

- Customer experience
  - Mass personalization
- Infrastructure
- Technology Transformation
  - Algorithms crunch data
  - Machine Learning
- Replacing stagnant signs
  - **Digital displays**

Data Analysis & Data Visualization

Noise / Uncertainty / Patterns / Insights   Clarity / Focus

Research & Synthesis   Concept / Prototype   Design

- Data analysis is an exploratory process that often starts with specific questions.

- Data visualization involves the visual representation of data, ranging from single charts to comprehensive dashboards.

Business Intelligence (BI)

- BI Leverages Software & Services to Transform Data into actional intelligence that informs the organization's business decisions

- BI is descriptive analytics: it describes a past or current sate

- Analytical findings can be presented in:
  - Reports
  - Summaries
  - Dashboards
  - Graphs
  - Charts
  - Maps

Track

- Website engagement
- Number of sessions
- Number of pages visited
- Bounce Rate
- Conversion Rate

Supply Chain Management

"Supply Chain includes many components…from Procurement to Manufacturing to Distribution. It's about getting the right product on the right shelf at the right time!"
    – Professor Doyle

Best approach: Planning backwards and project execution

Cross Functional Approach:

- Improves trust & collaboration

- Improves inventory visibility & velocity

- Improves company long-term performance
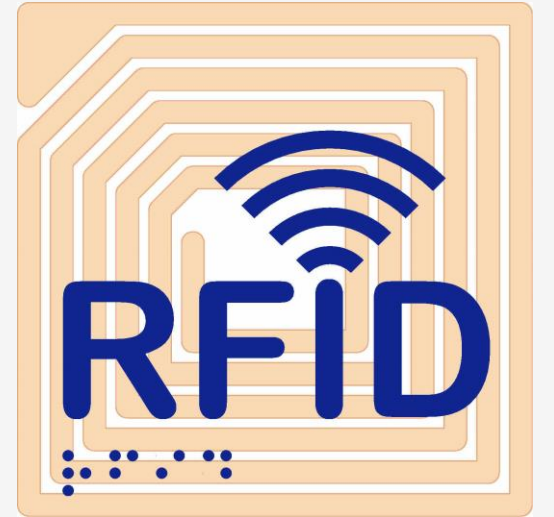
RFID

What is RFID?

- Radio Frequency Identification
- Wireless technology that lets you identify objects that have been fitted with special RF identification tags

What is RFID good for?

- Inventory control, access control...

How it works

- Antenna reads electromagnetic energy
- Can penetrate non-metallic solid objects

Disney Magic Band

$1 Billion Investment

- **Design the Customer's experience**

- **Customer Tracking**

  - **Parks & Hotels**

- **Everything is linked together**

  - **Removes the customer's need for:**

    - **Credit Cards**

    - **Tickets**

    - **Trip Itinerary**

Platforms & Digital Business Models

Topics and Required Reading

API Imperative

How the API economy is igniting a cultural shift in businesses

What are digital platforms?

Product Managers for the Digital World

saas-vs-paas-vs-iaas-whats-the-difference-and-how-to-choose
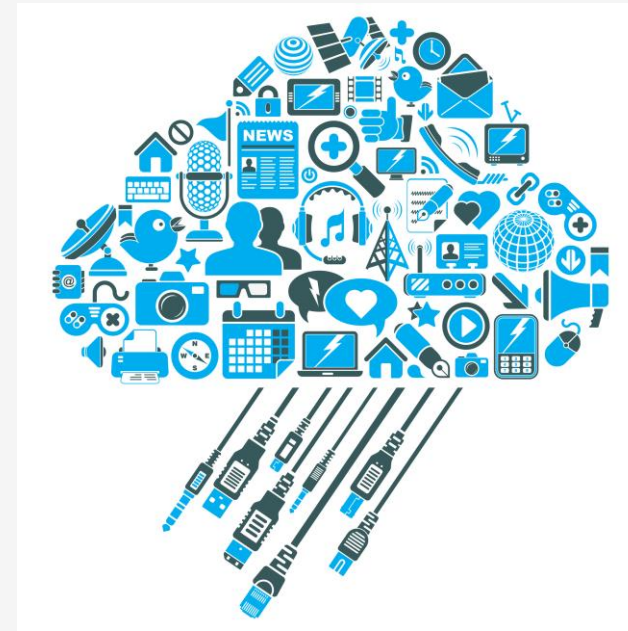
What is the Network Effect?

Platform Businesses

9 types of software platforms

Digital Platforms?

"…facilitates commercial interactions between at least two different groups…"

What are some core functions of a platform?

- Audience Building

- Matchmaking

- Providing Core Tools & Services

Digital Platform **Benefits**

- Easier to find customers

- Monetize underutilized assets

- Reduce transaction costs

- Reduce barriers to entry

- Reduce Search costs

Network Effects

The indirect value goods and services gain as more people use them.

- ex. Uber, dating sites

Cloud Computing

Pros

- Collaboration

- Environment

- Cost

- Ease of use

Cons/Pitfall

- Security

- Data Integrity

- Availability

- Privacy

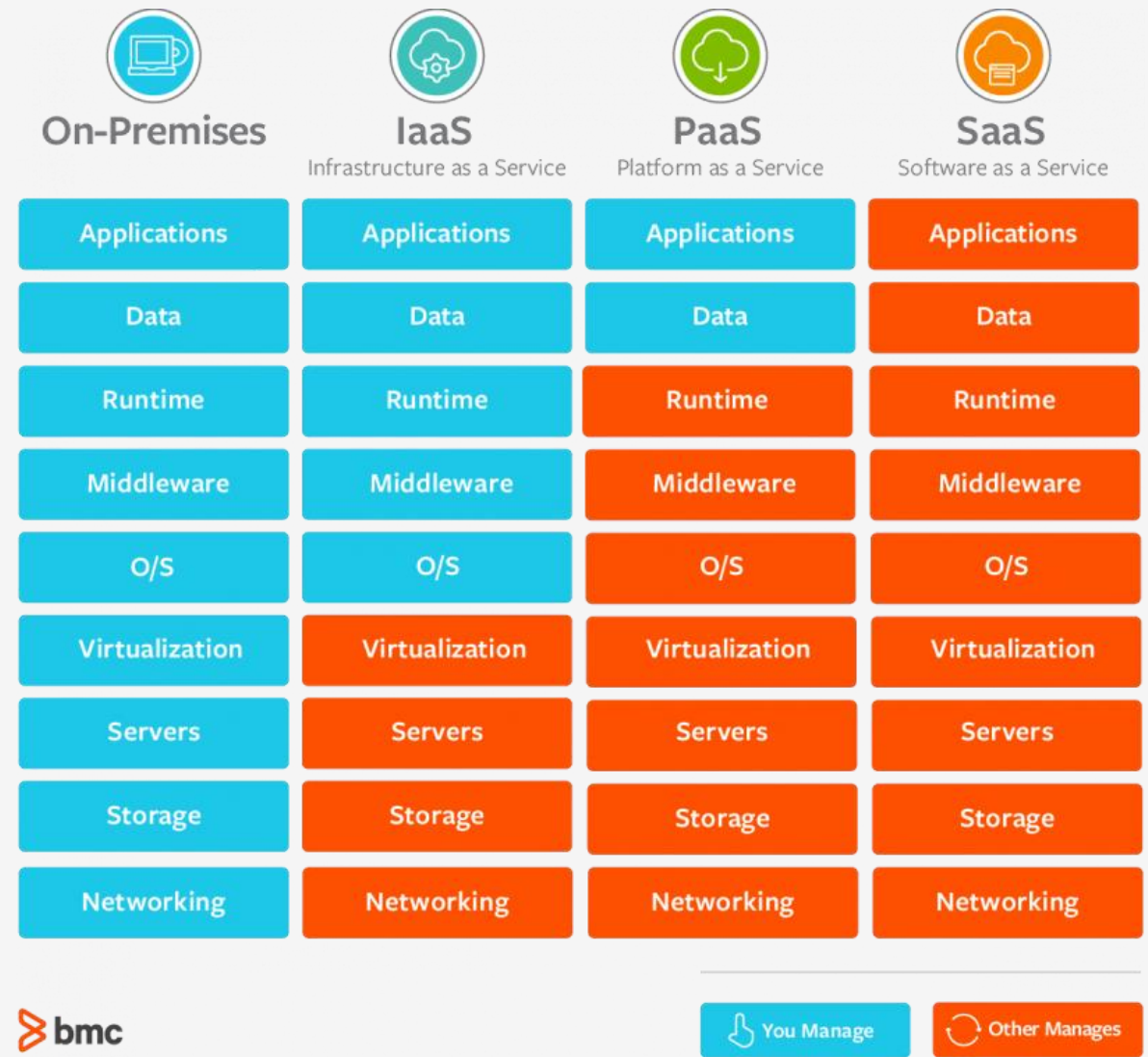# API's: Application Programming Interface

What is an API?

- Connect computer software components
  - API enable organization to open their back-end data for use
- Contract for Data Interaction
  - Facilitates interactions between front & backend IT systems (Web API's)
- Facilitate development of applications: Web, Mobile, Cloud
- **Re-usable asset.... It's a product!**
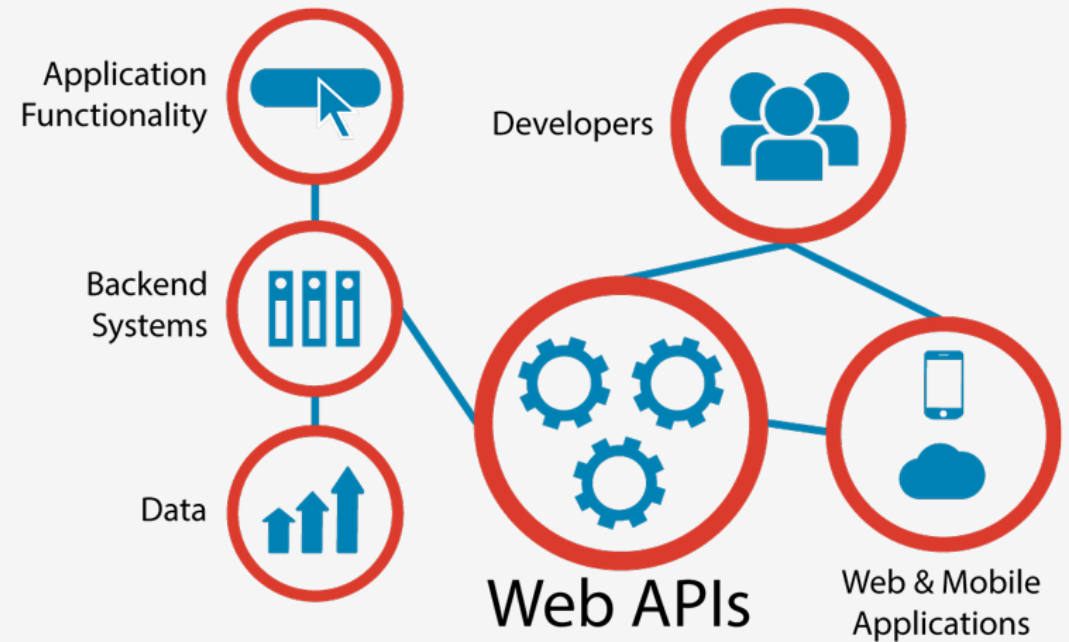
Cloud Computing

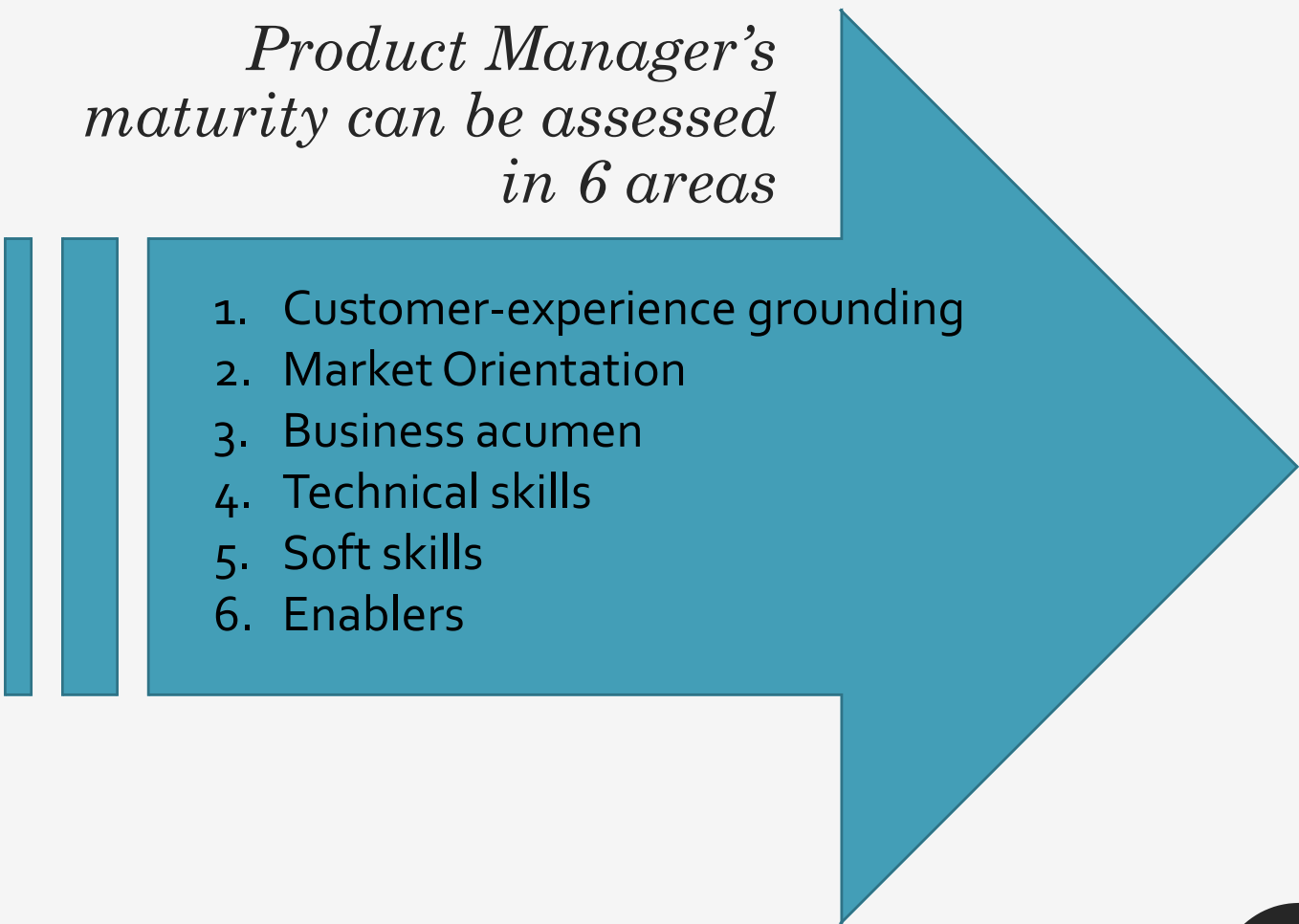**3 Basic Service types to Consider**

1. Infrastructure as a Service (IaaS)

   – Amazon Web Service

2. Platform as a Service (PaaS)

   – Google App Engine

   – Microsoft Azure

3. Software as a Service (SaaS)

   – DropBox

   – G-Suite (gmail, google doc…)

On-Premises	IaaS Infrastructure as a Service	PaaS Platform as a Service	SaaS Software as a Service
Applications	Applications	Applications	Applications
Data	Data	Data	Data
Runtime	Runtime	Runtime	Runtime
Middleware	Middleware	Middleware	Middleware
O/S	O/S	O/S	O/S
Virtualization	Virtualization	Virtualization	Virtualization
Servers	Servers	Servers	Servers
Storage	Storage	Storage	Storage
Networking	Networking	Networking	Networking

bmc

You Manage   Other Manages

Product Manager

Product managers of the future will be **analytics gurus** and less reliant on analysts for basic questions. They will be able to quickly spin up a Hadoop cluster on Amazon Web Services, pull usage data, analyze them, and draw insights. They will be adept at applying machine-learning concepts and tools that are specifically designed to augment the product manager's decision making.

Product Manager's maturity can be assessed in 6 areas

1. Customer-experience grounding
2. Market Orientation
3. Business acumen
4. Technical skills
5. Soft skills
6. Enablers

McKinsey, "Product managers for the digital world"

Cybersecurity & the Enterprise

Topics and Required Reading

What is threat modeling?

Data Breaches

John Deere's Promotional USB Drive Hijacks Your Keyboard

These are the worst corporate hackers of all time

5 Worst Data Hacks

What is AI

The Wired Guide to Artificial Intelligence

Why Hospitals Are The Perfect Target For Ransomware

Video

IBM video

Cybersecurity – Core Fundamentals

Five Questions for <u>threat modeling</u>:

1. What do you want to protect?

2. Who do you want to protect it from?

3. How likely is it that you will need to protect it?

4. How bad are the consequences if you fail?

5. How much trouble are you willing to go through in order to try to prevent those consequences?

Myths of Protection

Right fit for the Organization

Five key BUILD elements:

- Build 1:do/not do

- Build 2: risk/cost ratios

- Build 3: industry risk profile

- Build 4: growth perspective

- Build 5: sustainability
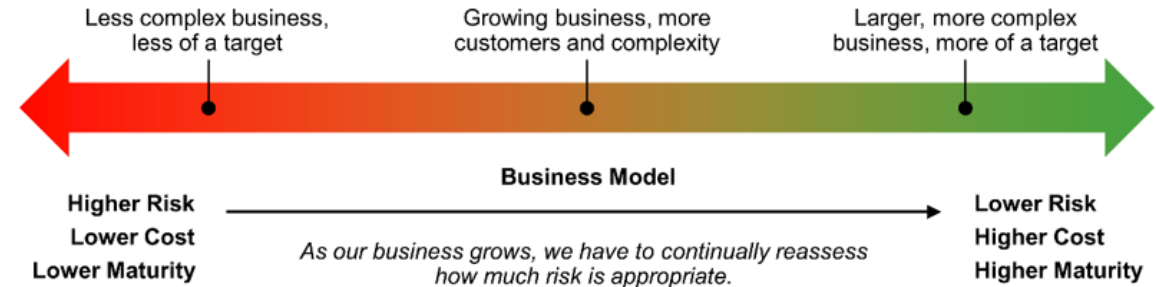
# Regulations

Privacy and Personal Data Protection

- California Consumer Privacy Act (CCPA)

Few Federal cybersecurity regulations

- 1996-Health Insurance Portability and Accountability Act (HIPAA)

- 1999-Gramm-Leach-Bliley Act

- 2002 Homeland Security Act, includes

- Federal Information Security Management Act (FISMA)

IT Professional need to consider regulatory acts when developing systems (example: ERP)!

The CCPA Effect — Privacy Regulations Introduced by State
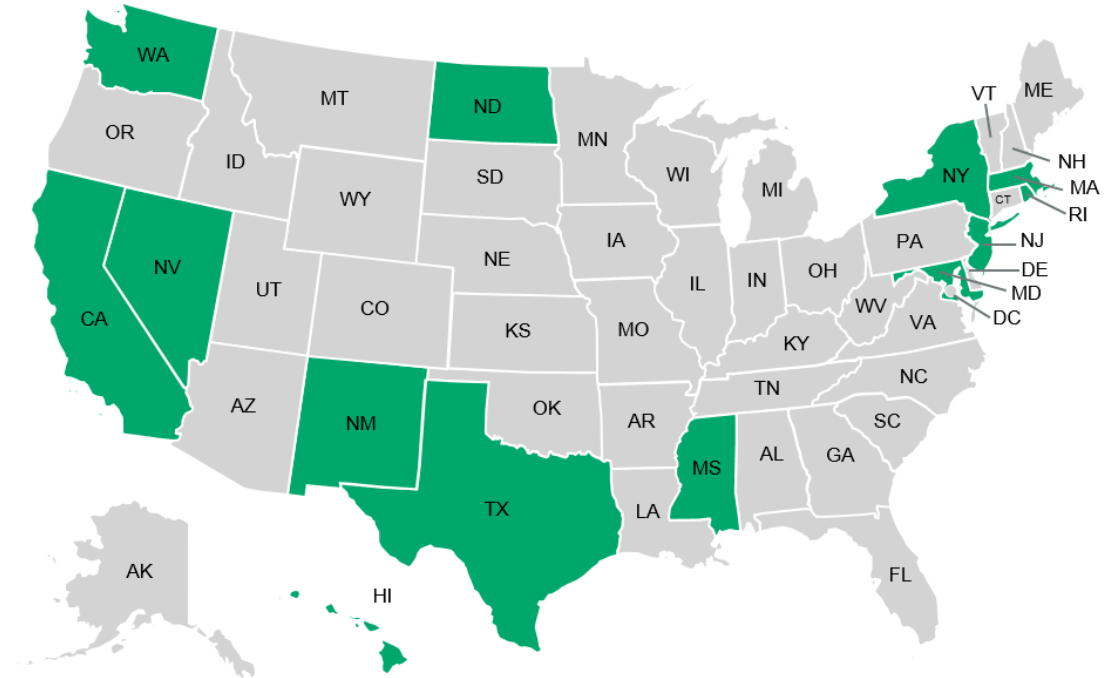
Source: Gartner
Footnote: California (AB375), Hawaii (SB418), Maryland (SB0613), Massachusetts (SD341), Mississippi (HB2153), New Mexico (SB176), New Jersey (S2834), New York (S00224), North Dakota (HB1485), Rhode Island (S0234), Washington (SB5376), Texas (HB4518), Nevada (SB220)
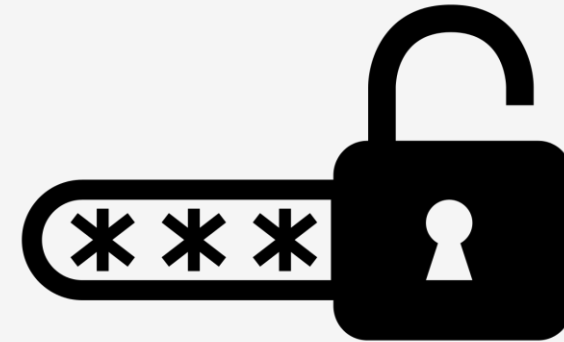ID: 376084

Password Management

Password Basics

- Keep them in you head?

- Don't change them?

- Reuse them?
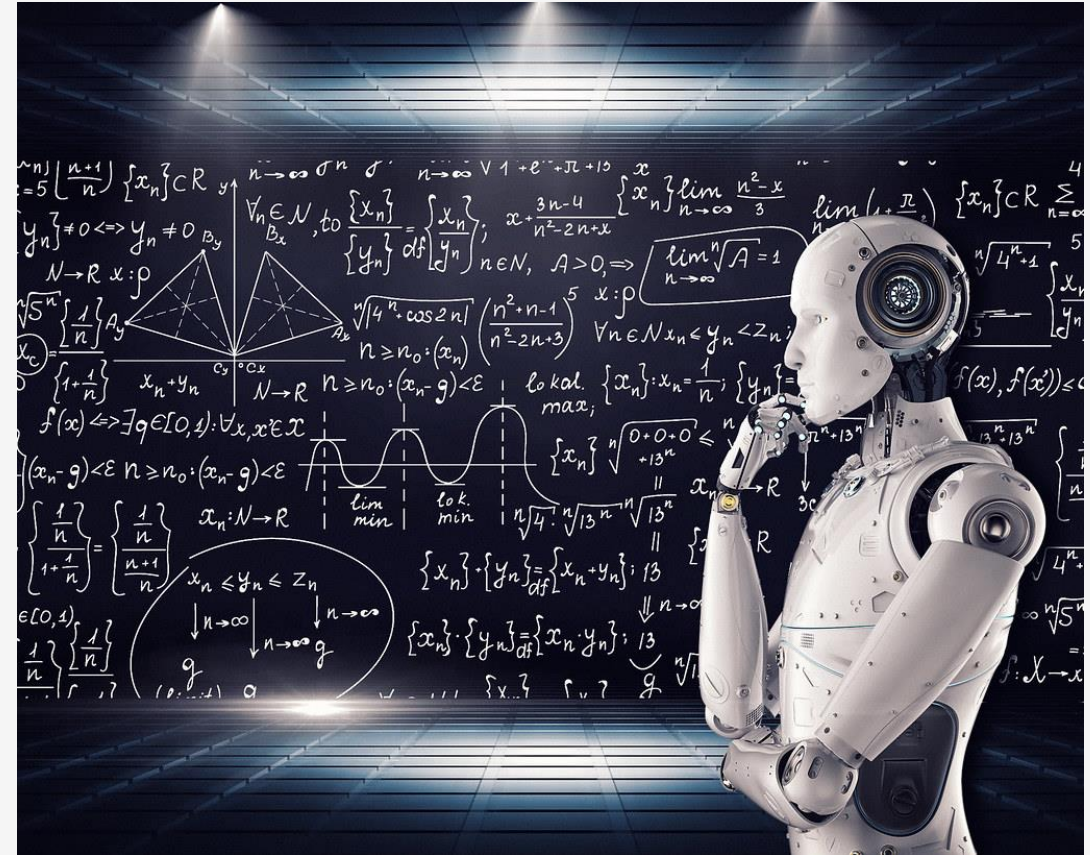
Password Management

- Consider a passphrase

  – Access a vault of your passwords

- Two-Factor Authentication

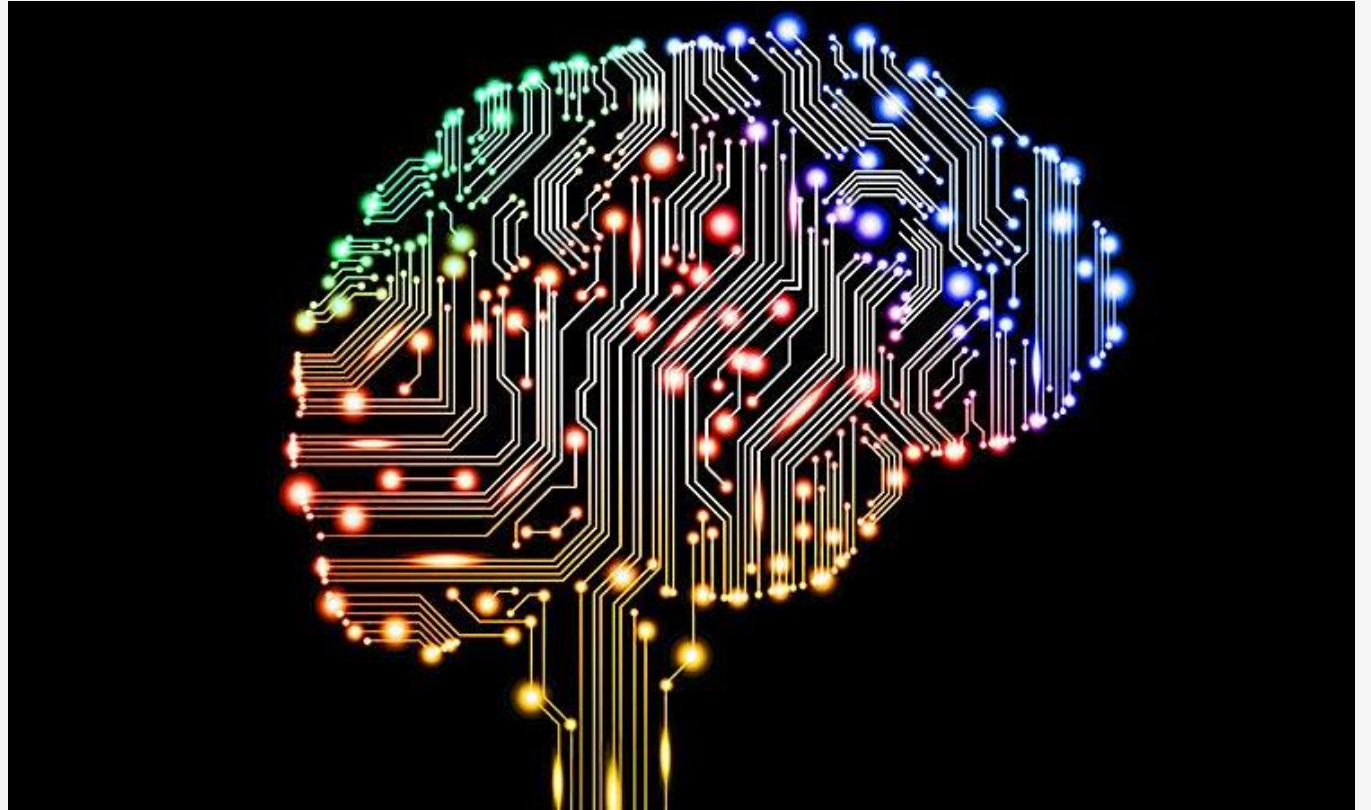# Artificial Intelligence

Three Types

- Narrow (ANI)

- General (AGI)

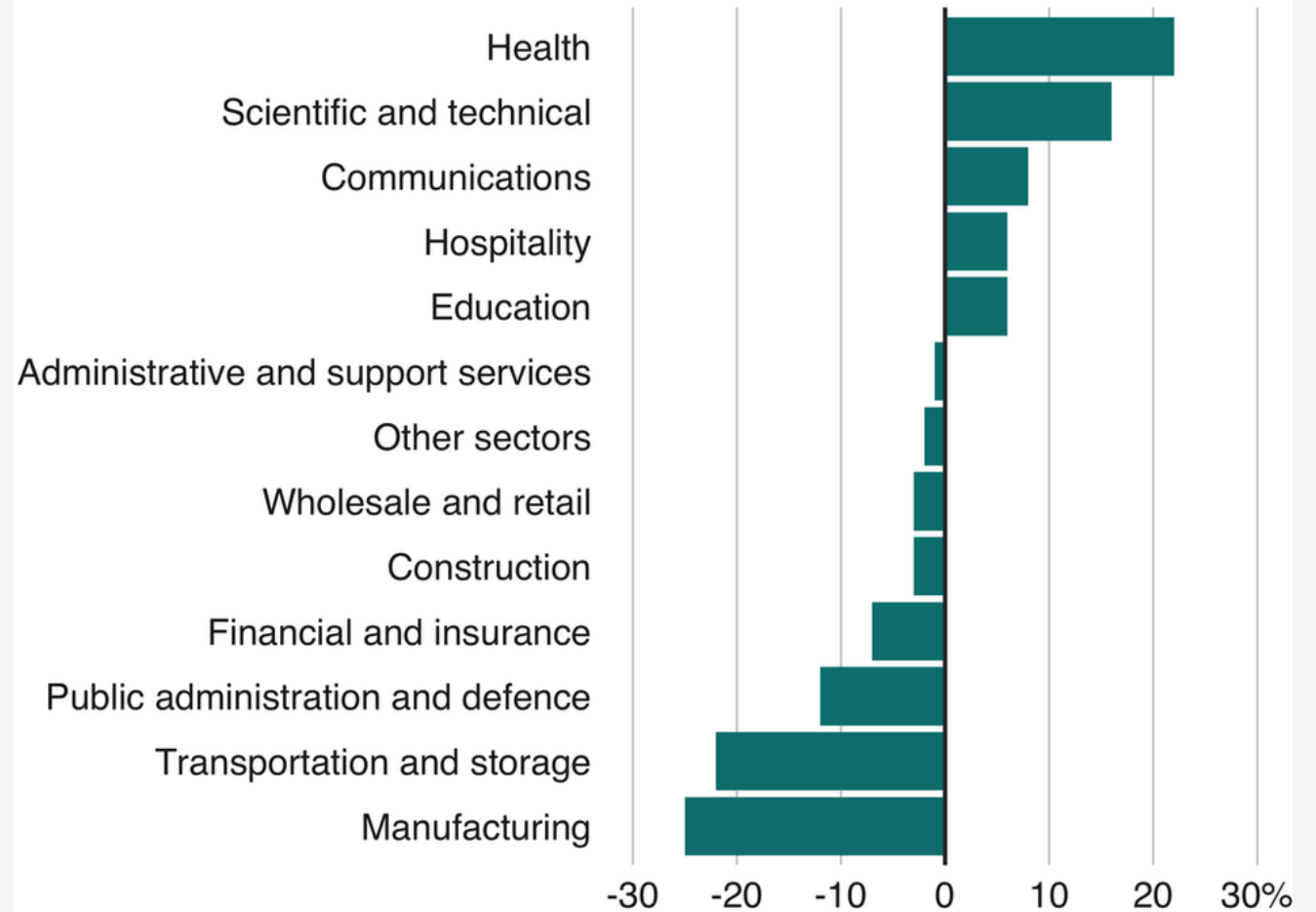- Superintelligence (ASI)

AGI Tests

- The Turing Test

- The Coffee Test

- The College Student Test

- The Employment Test

Future of AI

How AI could change the job market
Estimated net job creation by industry sector, 2017-2037

Source: PwC

BBC