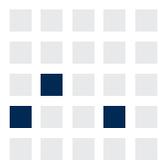




# Management in the digital age

## Old Economy vs. New Economy



Chair of Business Informatics  
Processes and Systems  
*University of Potsdam*



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## Learning Objectives

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1. Understand the differences between the new and old economy.
2. Understand the economic role of data and digital technologies.
3. Understand the economic impact of the new economy.
4. Understand the phenomena of digital transformation.



Two economic paradigms: A comparative approach

What constitutes the Old Economy?

What constitutes the New Economy?

How do these economic paradigms interrelate?



## **Two economic paradigms: A comparative approach**

What constitutes the Old Economy?

What constitutes the New Economy?

How do these economic paradigms interrelate?

# Two economic paradigms: A comparative approach

Companies of the Old Economy and the New Economy



Mercedes-Benz



Nestlé



Lufthansa



adidas

The Old Economy VS The New Economy



airbnb

amazon

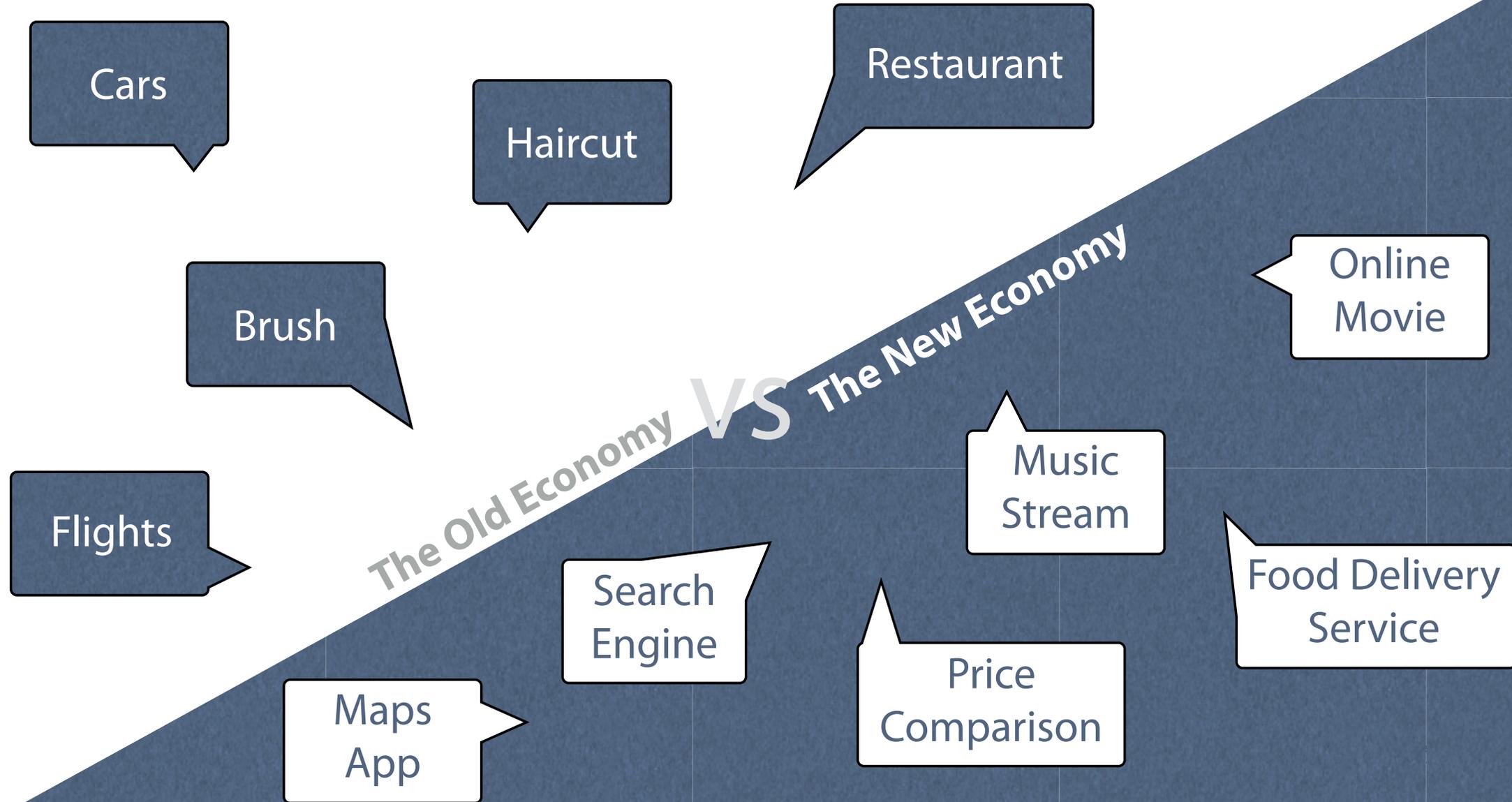
Google

Uber

NETFLIX

## Two economic paradigms: A comparative approach

What do the companies offer?



## Two economic paradigms: A comparative approach

The Old Economy offers ...

... physical  
goods

Physical products are tangible  
and need to be manufactured.

examples:

- cars and furniture
- food and groceries
- fashion and cosmetics

... physical  
services

Physical services are intangible  
work processes to provide solutions  
for individual problems.

examples:

- haircuts and massages
- financial services
- teaching and consulting

Products and services rely on different scarce physical resources.

## Two economic paradigms: A comparative approach

The New Economy offers ...

... digital content

Digital goods or content are intangible and need to be stored and made available on-demand.

examples:

- software applications
- movie or music files
- information website

... digital services

Digital services are intangible automated processes to provide solutions for individual problems.

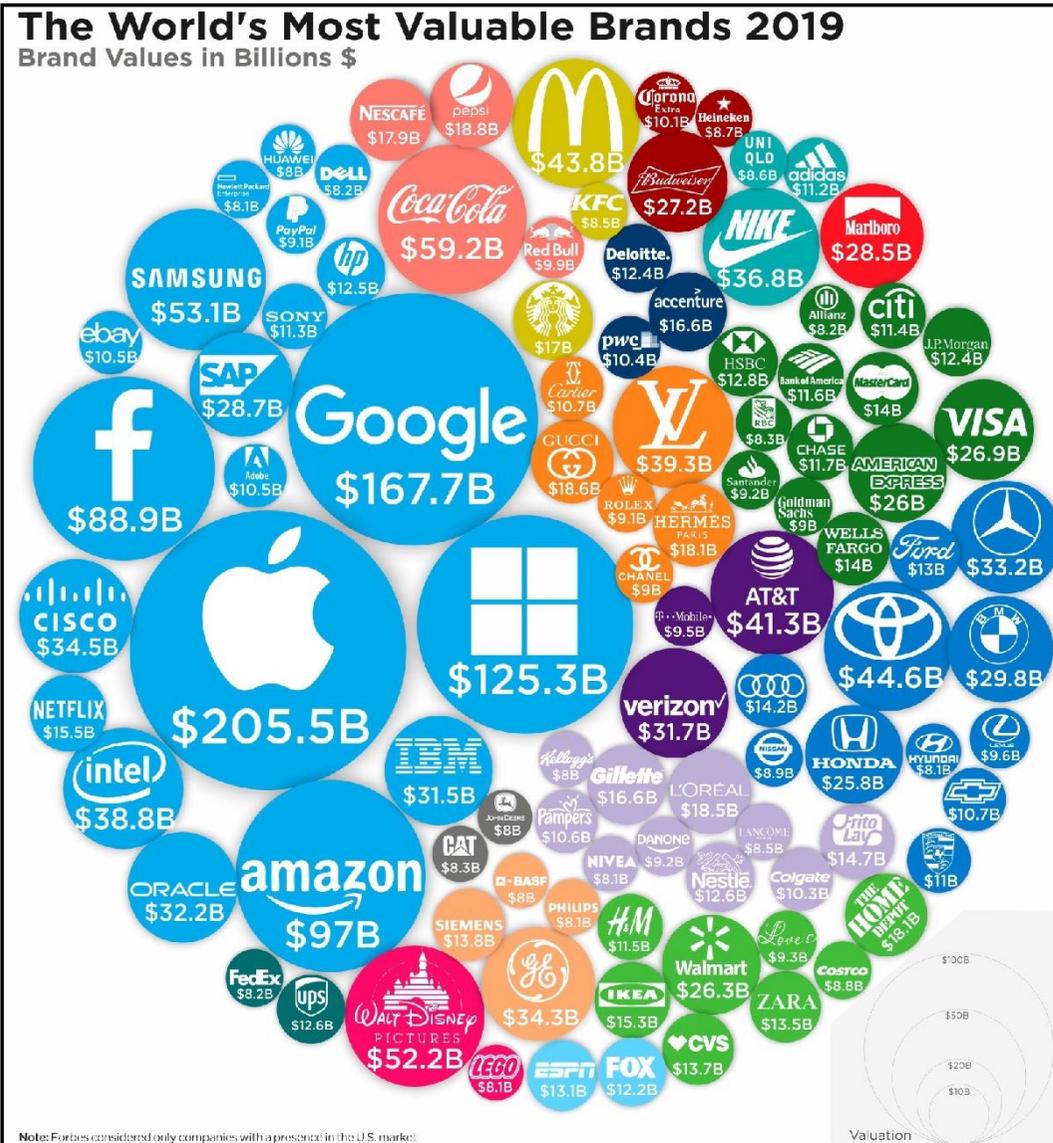
examples:

- search engine
- food delivery platform
- streaming service

Digital goods are data-based and easily reproducible.

# Two economic paradigms

## A Comparison of Values



Why is the Digital Economy so valuable?

How do these two economy paradigms interrelate?

How can Old Economy companies approach the digital challenges?



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# Quiz Session

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Two economic paradigms: A comparative approach

**What constitutes the Old Economy?**

What constitutes the New Economy?

How do these economic paradigms interrelate?

# What constitutes the Old Economy?

## Value Creation: Key Resources

### Physical resources

- sites, machines, tools, materials, systems

### Intellectual resources

- brands, recipes, patents, copyrights, manuals

### Human resources

- knowledge, experience, physical strength

### Financial resources

- cash, credits, equity options



**Value Creation in the Old Economy needs various scarce resources.  
Data and digital technologies can help extracting efficiency and effectivity.**

# What constitutes the Old Economy?

## Technology Potentials and Effects for Old Economy Companies

### How IT can enable new processes:

- integration and combination of tasks
- horizontal & vertical decision making
- de-linearization & parallelization of steps
- flexibilization & variation of steps
- removal of barriers in time and space
- minimizing/automation of checks & controls
- minimizing of reconciliation
- implementation of single points of contact

### What effects can be leveraged?

- more effective & efficient processes
- higher flexibility & new structures
- innovation & strategic advantages



**Digital technologies provide several potentials that may help leverage positive effects to improve a company's organization, processes or products.**

Hammer & Champy (1993)

# What constitutes the Old Economy?

## The „Legacy“ of the Old Economy

### Potential problems + barriers for successful digital transformation

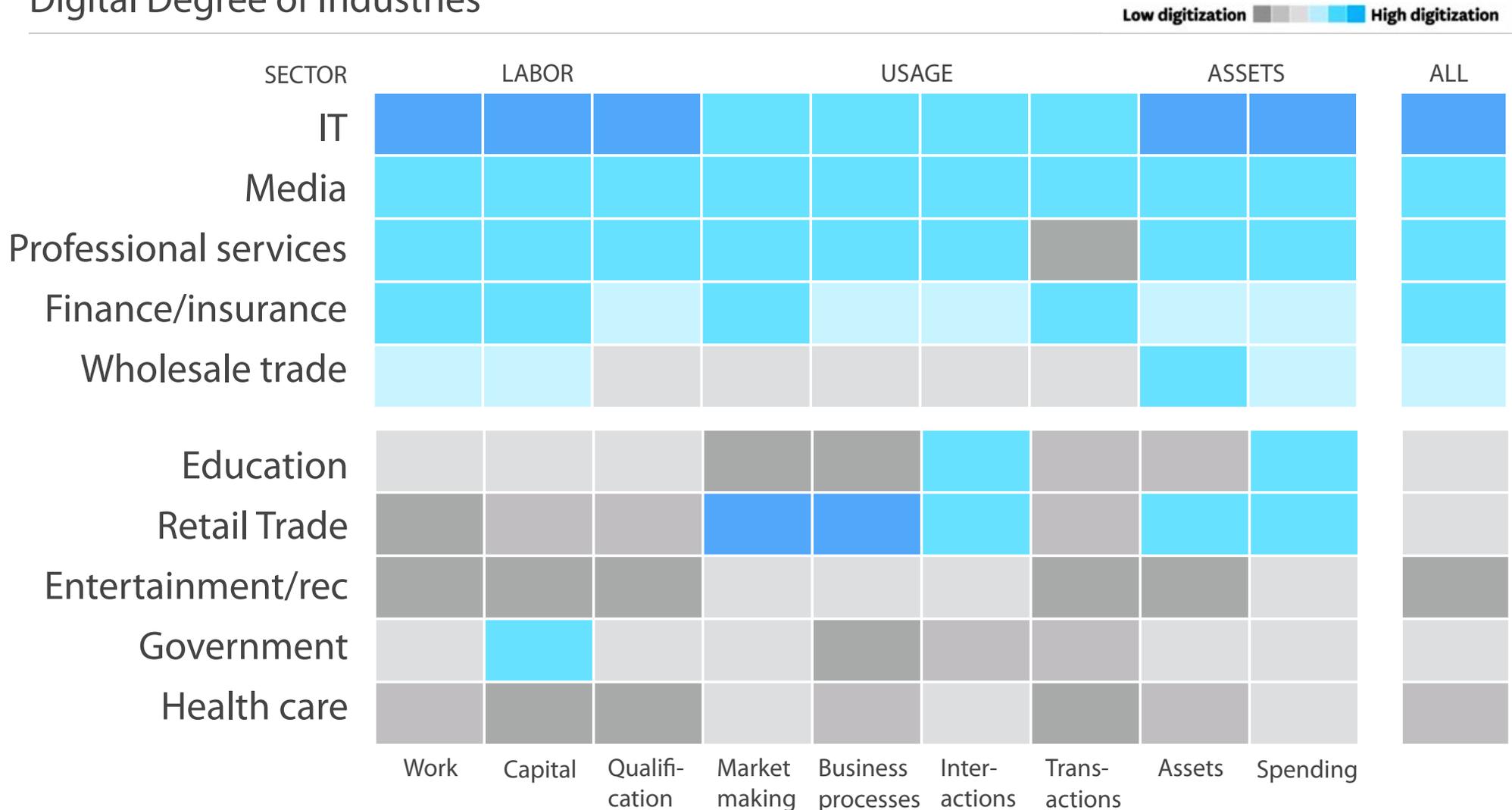
- IT
- Staff
- Organization
- External Developments



**The Old Economy has to address internal and external challenges at once.**

# What constitutes the Old Economy?

## Digital Degree of Industries



The digital readiness of industries differs as the optimal digital degree does.



Two economic paradigms: A comparative approach

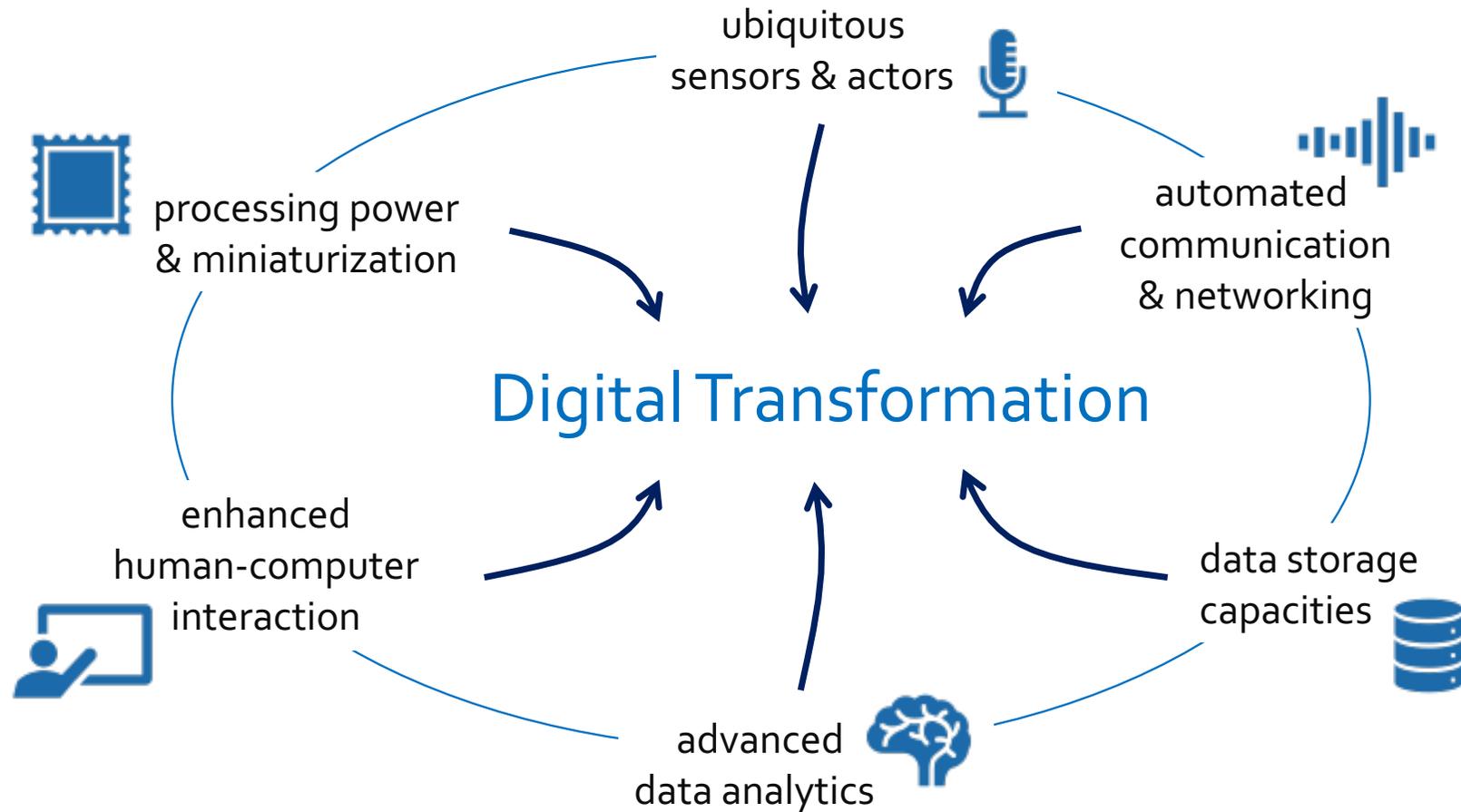
What constitutes the Old Economy?

**What constitutes the New Economy?**

How do these economic paradigms interrelate?

# What constitutes the New Economy?

## Causes of Digital Transformation



**Particularly, the combination of these causes leads to new potentials for comprehensive automation of cognitive und mixed mechanical-cognitive tasks.**

# What constitutes the New Economy?

## Value Delivery in the Digital Age

### Companies of the New Economy leverage these potentials to offer digital value offerings:

- Digital value offerings can be digital or data-based content and/or services
- These offerings rely on the availability of
  - digital infrastructures
  - (mobile) devices
  - and data

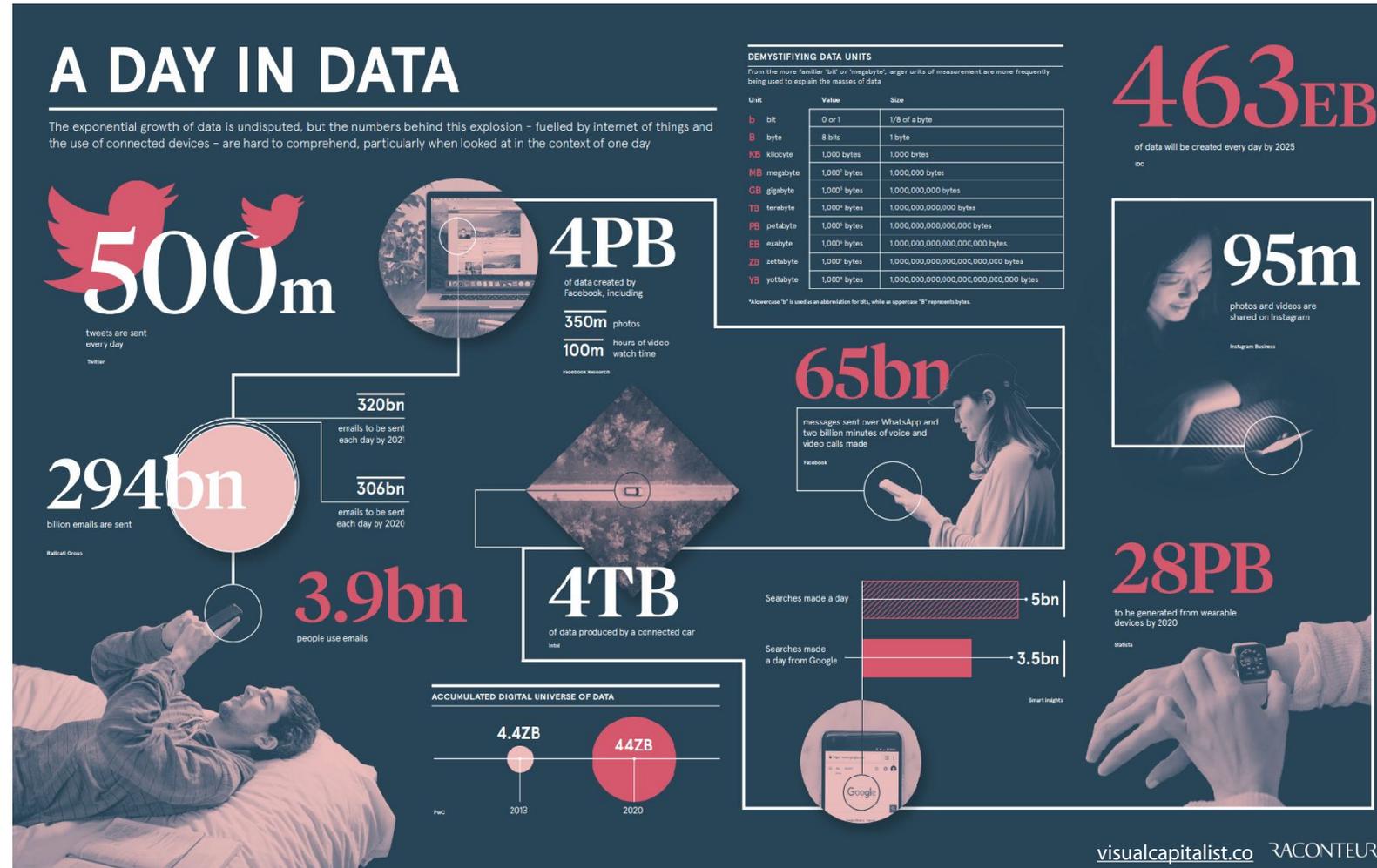
**New Economy companies provide digital value propositions. Here, they rely on the ubiquity of data and devices.**



# What constitutes the New Economy?

## Our World in Data

- We produce 2.5 quintillion bytes of data — per day (That's 1,000 petabytes!)
- 90% of the world's data was created in the last two years
- The main challenge is to transform data into value



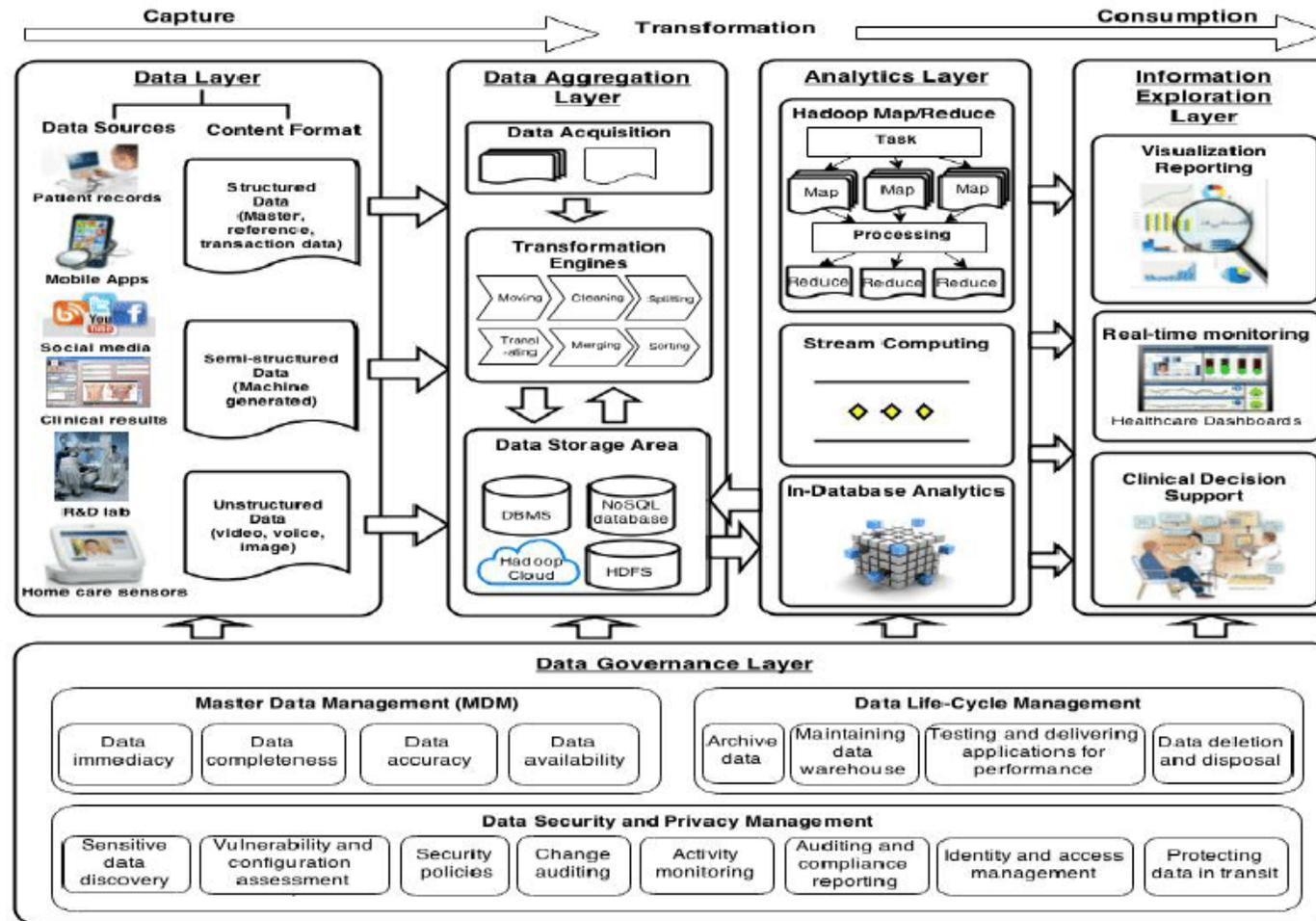
Data has become a key resource of the digital economy.

Bartley (2021)



# What constitutes the New Economy?

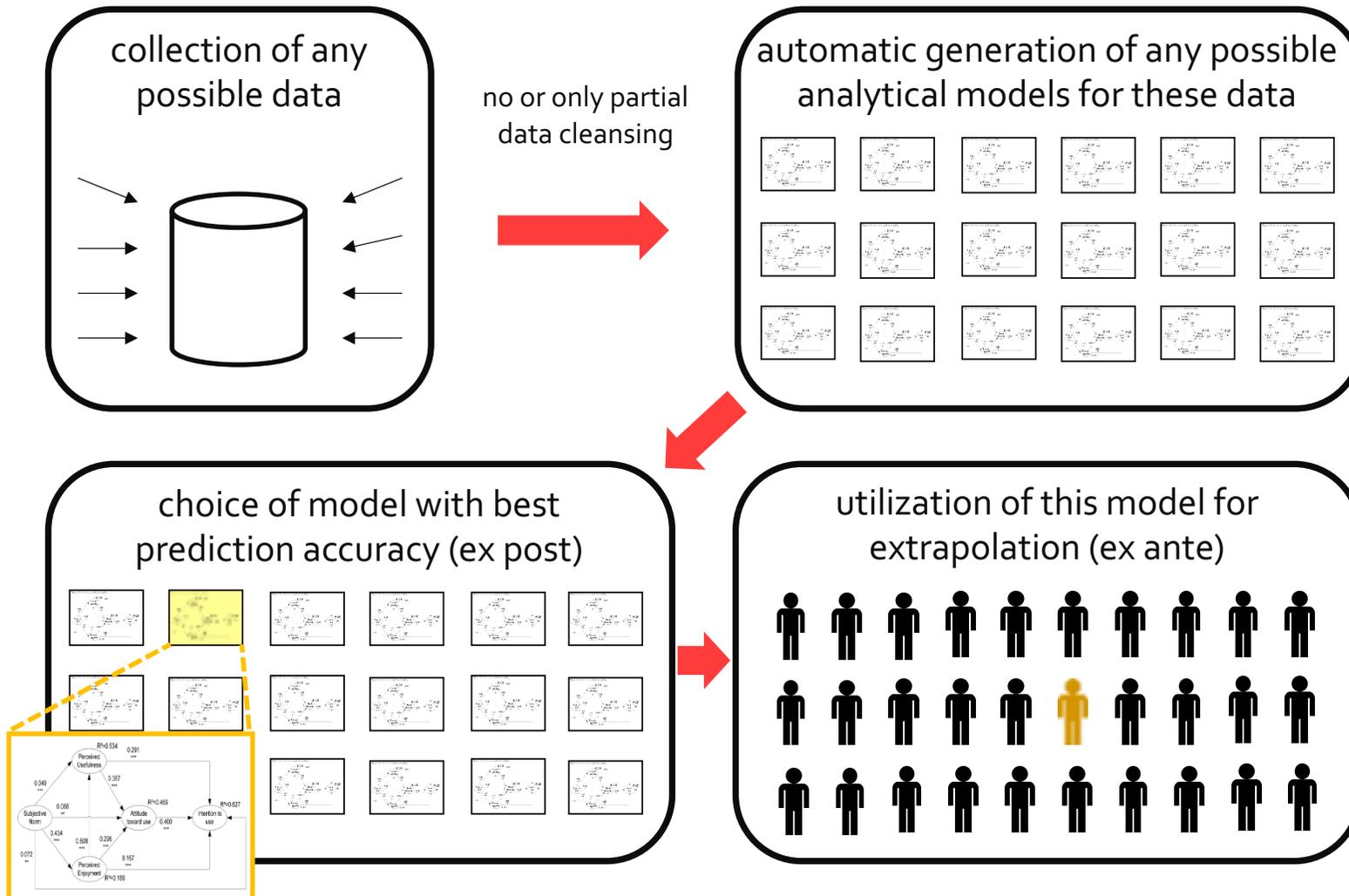
## Data as a Key Resource



Data has become a key resource, data processing a key activity in the digital age as a basis for automation and innovative business models

# What constitutes the New Economy?

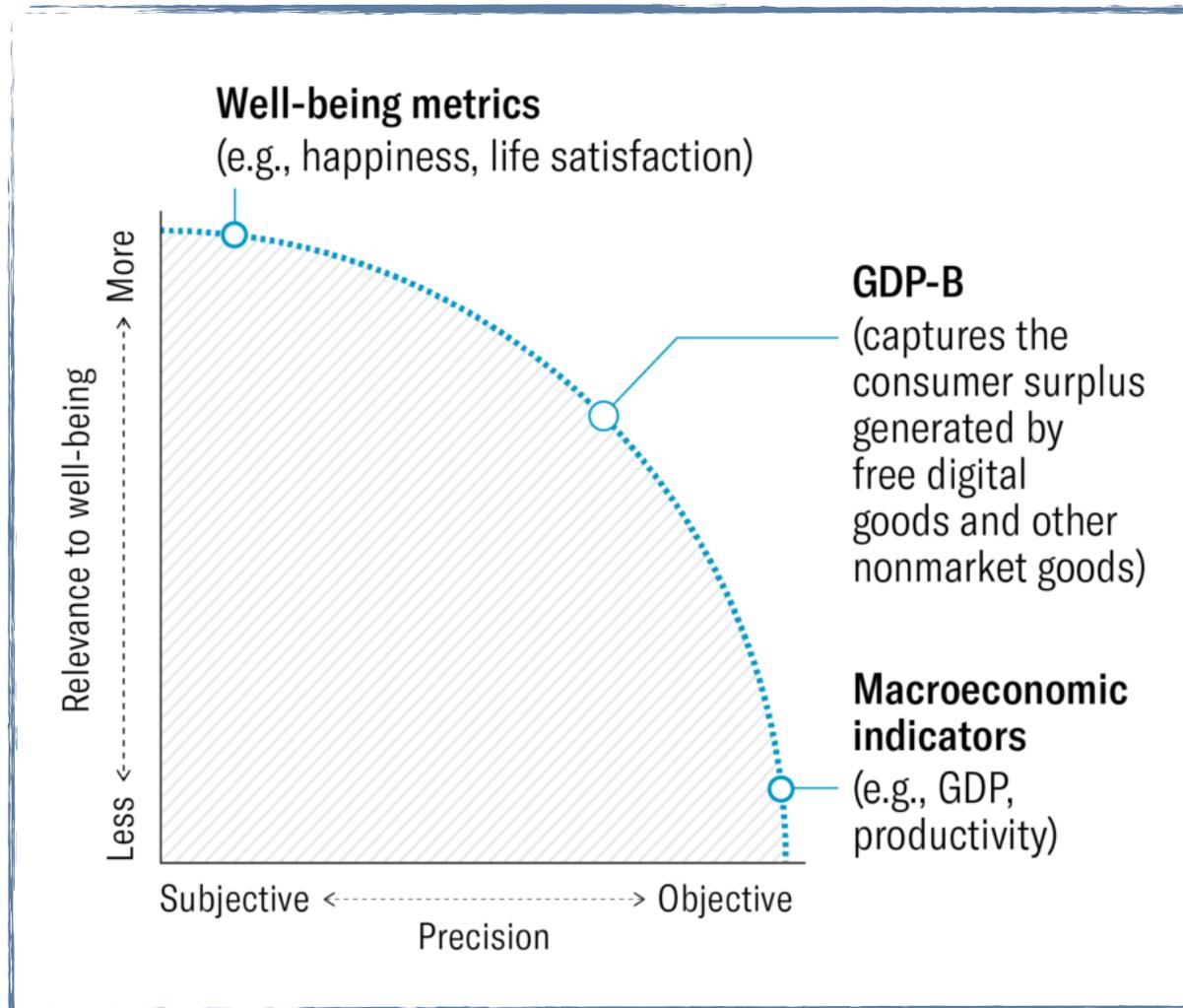
## New Paradigms of Data Analysis



The growth of data requires and allows new analytical techniques to provide predictions and offer pinpoint value propositions.

# What constitutes the New Economy?

## Measuring the Economic Impact



Brynjolfsson & Collis (2019)

*"We see the digital age everywhere except in the GDP statistics."*

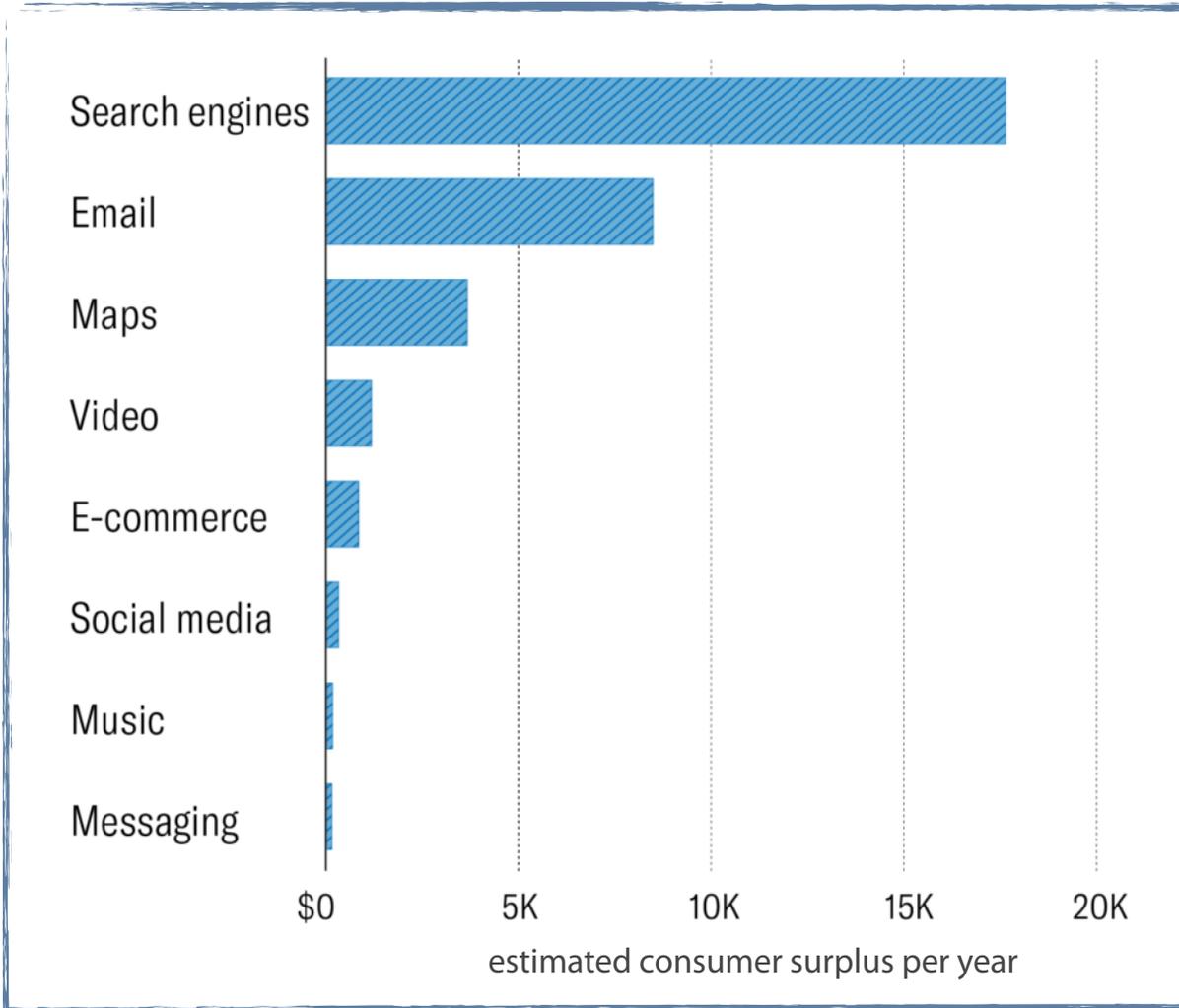
- R.M. Solow -

### How to measure the Digital Economy?

- A new metric, GDP-B, is a step toward a more complete dashboard of economic indicators
- Effective management of the digital economy depends on our ability to accurately assess the value of free digital goods and services.

# What constitutes the New Economy?

## Consumer Surplus of the Digital Economy



Brynjolfsson & Collis (2019)

How much time do you spend using such services?



Could you live or work without them?

How much would you pay for one day of Google, YouTube or Instagram?



Two economic paradigms: A comparative approach

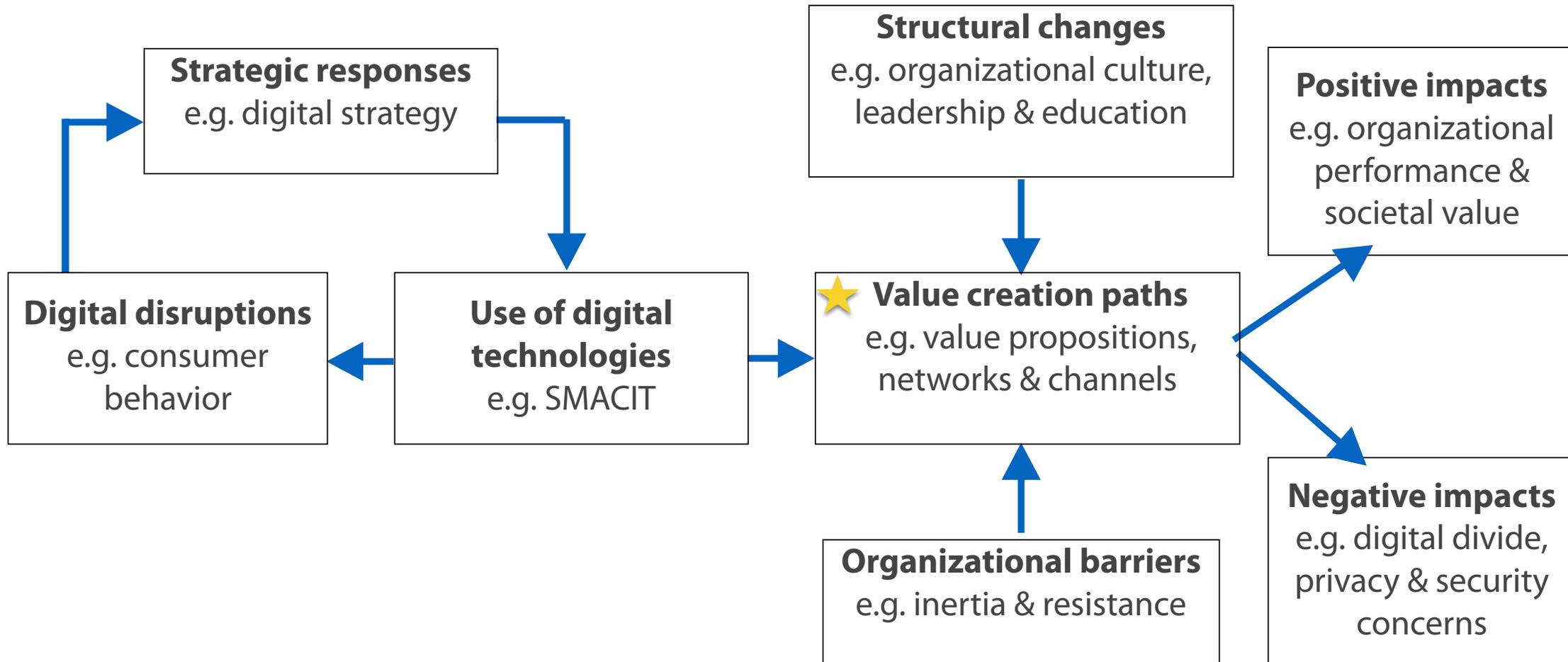
What constitutes the Old Economy?

What constitutes the New Economy?

**How do these economic paradigms interrelate?**

# How do these economic paradigms interrelate?

## Towards Digital Transformation



**The process of digital transformation is complex and open-ended.**

cf. Vial 2019

# How do these economic paradigms interrelate?

## Enabling New Forms of Customer Relations



### Personal Communication

Is based on human interaction as the customer communicates with a real human service consultant.



### Automated Services

Mix of self-service and automated processes which can detect customer needs and expectations.



### Individual Assistance

One customer has one personal consultant who can be contacted in case of questions or problems.



### Communities

Customers help each other in dedicated online forums.



### Self-Service

The companies offers any required building blocks for the customers to help themselves.



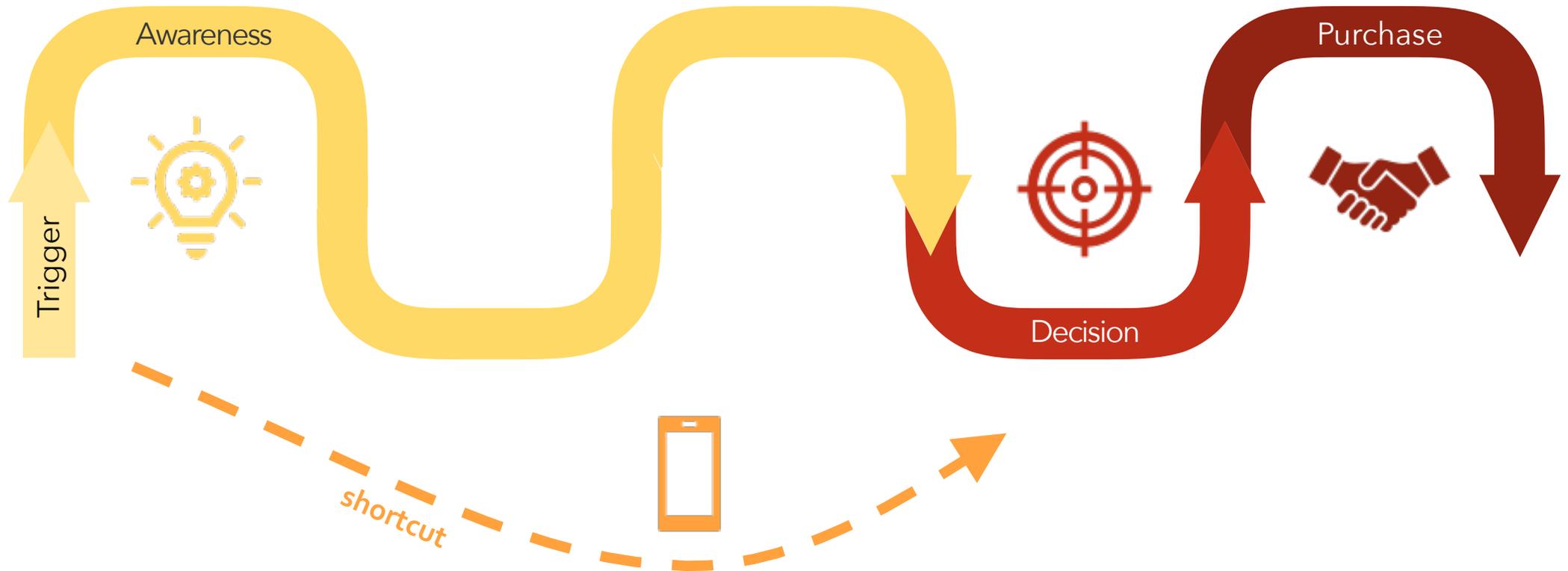
### Co-Creation

Customers are integrated into product development processes.

**Companies have various options to manage customer interaction.**

# How do these economic paradigms interrelate?

## Understanding the Digital Customer Journey



Digital devices and data analytics can shorten the decision process of the customer.

# Data Analytics in the Digital Age

## Benefits & Risks

	<b>Benefits</b>	<b>Risks</b>
<b>individual</b>	<ul style="list-style-type: none"><li>- personalized offerings</li><li>- improved wellbeing</li><li>- more access to information</li></ul>	<ul style="list-style-type: none"><li>- surveillance of private/work life</li><li>- job substitution through automation</li><li>- information overload</li></ul>
<b>economy</b>	<ul style="list-style-type: none"><li>- data-driven business models</li><li>- higher efficiency of value creation</li><li>- improved collaboration</li></ul>	<ul style="list-style-type: none"><li>- economic disruption</li><li>- focus on shareholder value</li><li>- creation of lousy jobs</li></ul>
<b>society</b>	<ul style="list-style-type: none"><li>- transformation to a knowledge society</li><li>- improved health and wealth</li></ul>	<ul style="list-style-type: none"><li>- societal divide</li><li>- environmental pollution</li></ul>

**Data and digital tools enable new business models and automation in value creation. However, it brings risks for economy, society, and environment.**

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# Quiz Session

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