PerMediQ

Personal Medical Quality

The Economics of Data

Dr. Elena Ramírez Barrios

1st German SOLID Symposium

Data Integration

Mathematical Modeling

Knowledge Management
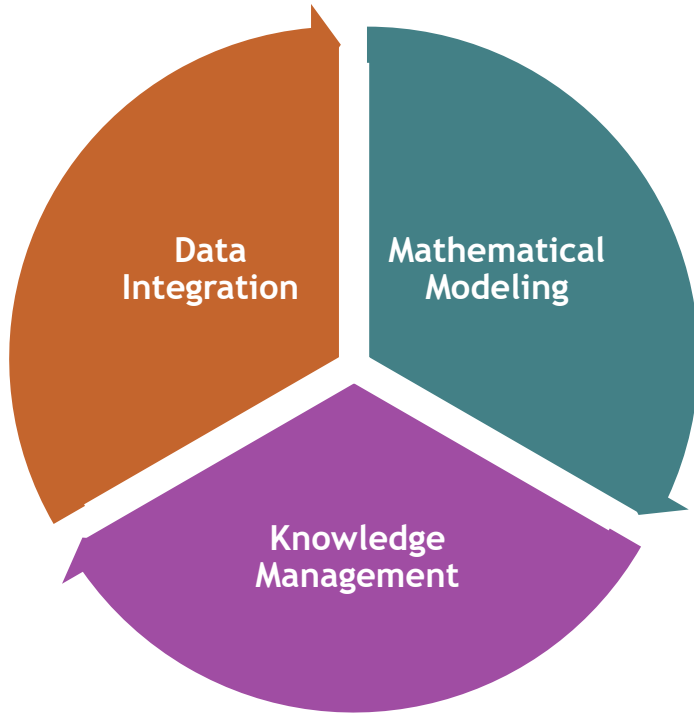
Mathematical Modelling

- Systems Biology / Medicine
- Pharmacology
- Industry

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The Economics of Data

Business → Data as a Resource

↑

How to manage scarce resources?

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Economy

↓

How to improve people´s wellbeing
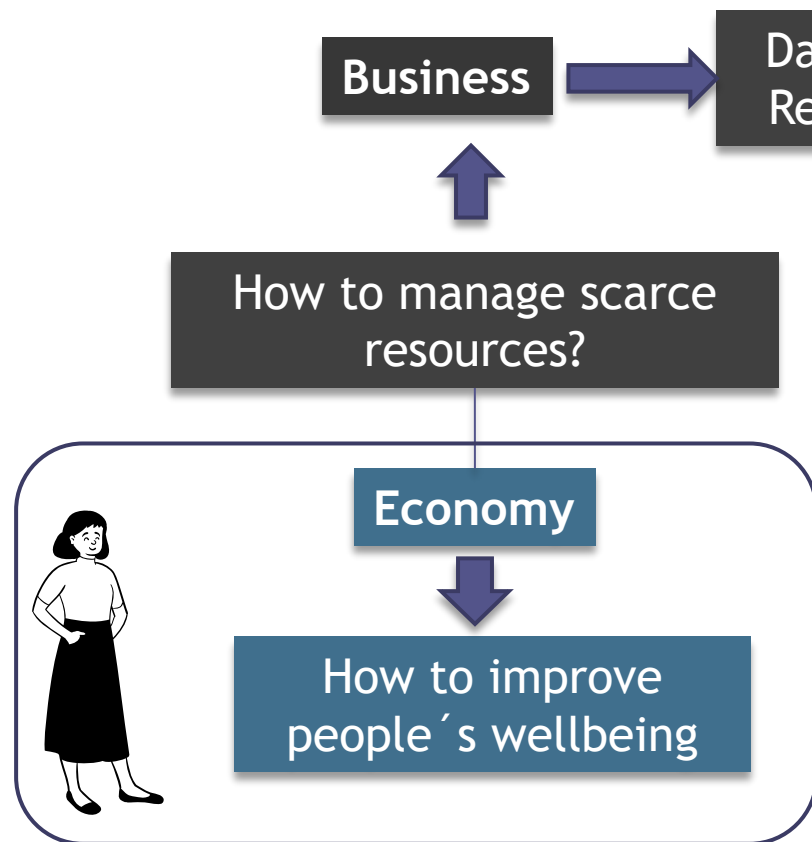
- Perhaps all the definitions of data as resource are misleading, since it often leave behind the human component (real economy)
- Data as a resource is however useful to define a set of business offering a narrow well being in form of services

The Economics of Data

Data as a Resource

Economy

How to improve people´s wellbeing

- **Data and Information:**
Information is created when data are processed, organized, or structured to provide context and meaning. Information is essentially **processed data**.

- **Data as basis to make decisions:**
Knowledge is unique to each individual and is the accumulation of past experience and insight that help us to interpret, and assign meaning to, **information**. For knowledge to result in action, an individual must have the authority and capacity to make a decision.

The Economics of Data

How to manage scarce resources? → Data as a Resource

Business

Citizens as Resource (for instance attention)
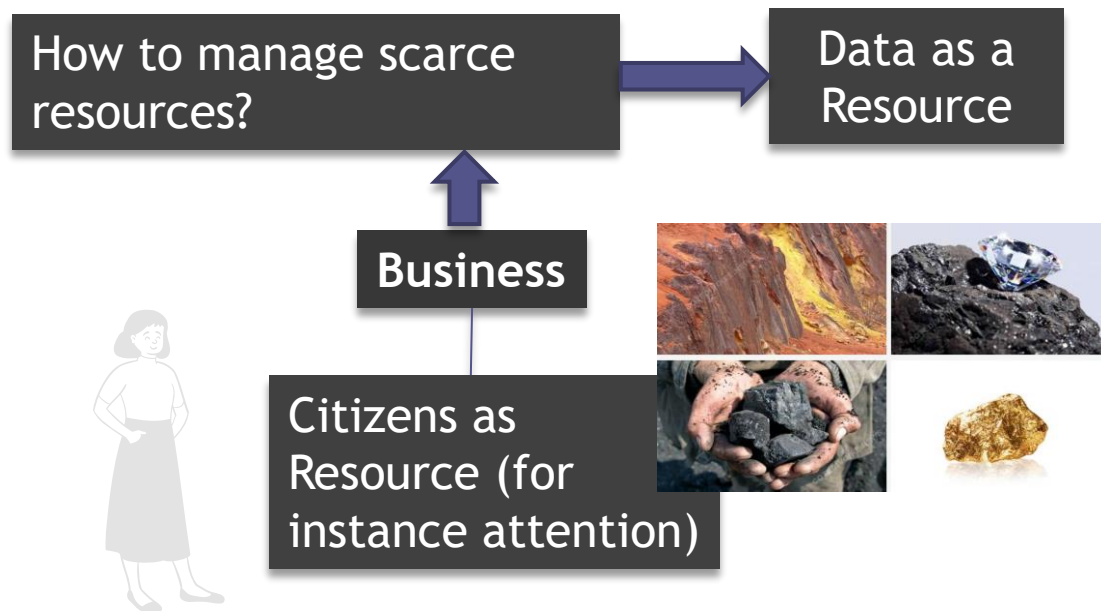
- Data as a resource reduces humans to mere objects.
- Wellbeing is no longer a goal.
- Each service is used to exploit additional "resources".

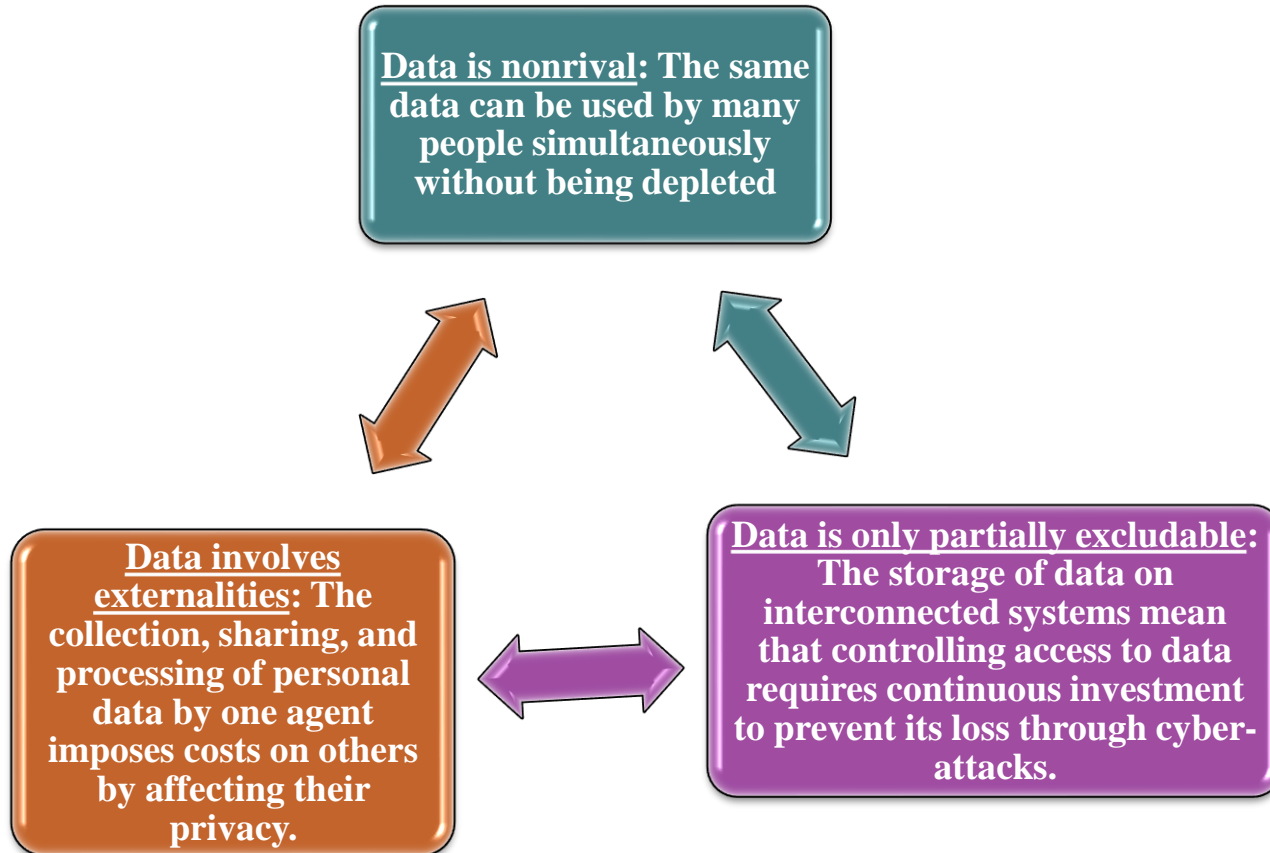**Persons get blurred and are converted "resources"**

Data as production factor

Data is unlike other "resources", including oil, in several different ways:

- The same data can be used by many people simultaneously without being depleted.

- As a result, its accumulation will boost productivity and long-term growth.

- The value of data gets unlocked when it can be accessed by many firms or researchers, who then compete to innovate and generate knowledge.

Data as production factor

Data is nonrival: The same data can be used by many people simultaneously without being depleted

Data involves externalities: The collection, sharing, and processing of personal data by one agent imposes costs on others by affecting their privacy.

Data is only partially excludable: The storage of data on interconnected systems mean that controlling access to data requires continuous investment to prevent its loss through cyber-attacks.

Data policies

Data markers are too opaque: we aren't **fully aware** of how our data is used, transferred, and processed.

This leads to too much data collection and too little privacy

Companies who build up large datasets **have an incentive to hoard them**. This potentially **stifles competition and reduces the social benefits that could flow from wider data access**.

→ Governments can deploy a range of policies to encourage data sharing that can promote competition and innovation, while respecting privacy.

It is unclear that companies are **doing enough to protect the data** they hold from theft and misuse.

→ This **threatens public trust and creates risks to stability** that policy measures should mitigate to ensure adequate investment in cybersecurity.

Data as production factor

Is *AI democratization* democratic when data is siloed?

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