Action Research on Process Analysis Maps. What does an arrow mean?

Paola Mauri

Senior Consultant in System Management

ICMCI Certified Management Consultant

Star srl Italy

STPIS19

About me

- **Reliability Method and Data Analyst in a microelectronics company**
- **Practitioner on (Quality) Management System for companies with different characteristics**

'The story of socio-technical design is closely allied with action research'

E. Mumford

Summary

- **Action Research approach**
  - **Framework of ideas and Methodology**
  - **Real word situation: Process Analysis in Large Sized Companies**
  - **Reflection: Process Taxonomies and Notations**
  - **Research themes: Methods, Tools and Notations**
  - ***Findings***

Action Research

- **The researcher is actively involved**
- **The knowledge obtained can be immediately applied**
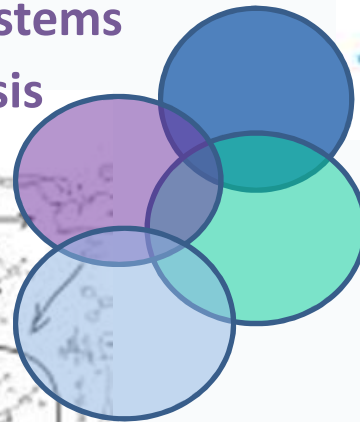- **The research is a cyclical process linking theory and practice**

Checkland Model

Framework of ideas. Methodology

Research Themes

Real word situation

Reflection based on framework of ideas and methodology

Findings

Action
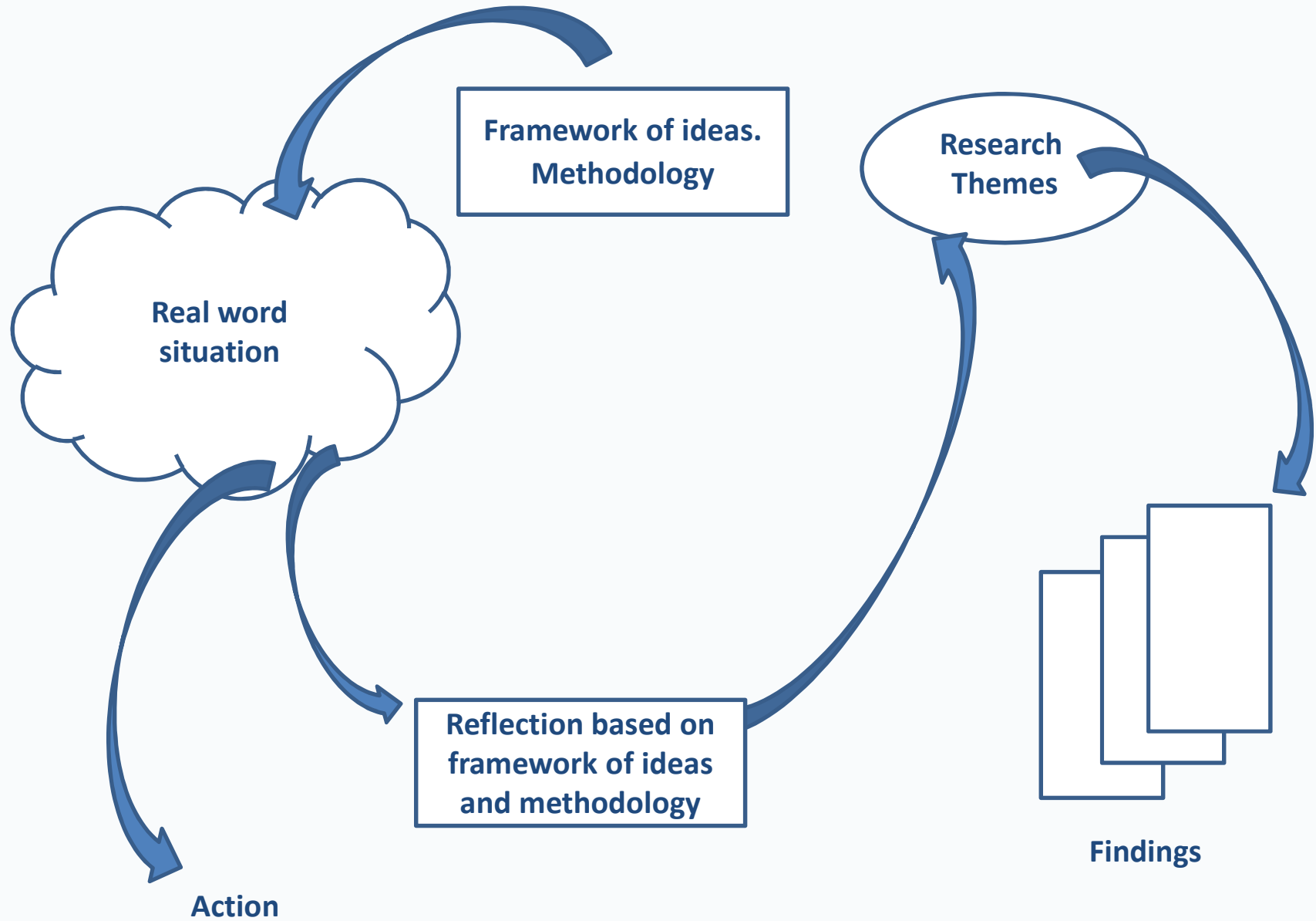
Framework of ideas. Methodology

Management Systems

Process Analysis

Socio-technical Design

Ethnographic Approach

Role of Maps

Real word situation. Large sized companies

- **Governance: Board of Directors, Business Model and Strategies**

- **Worldwide distribution of sites and markets**

- **Organizational structures: complex and subject to change**

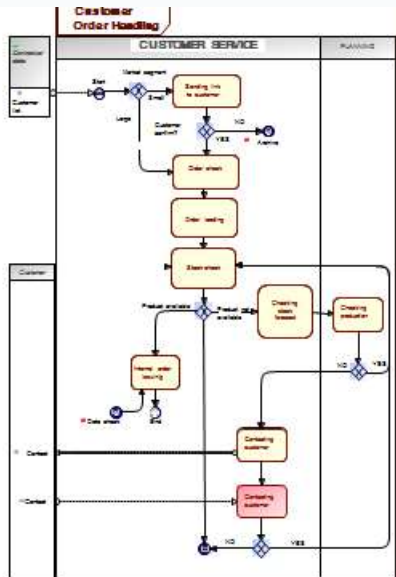- **ICT management: developers and end-users**

Projects and actions

- **Contractual commitment and objective: producing maps to describe processes**
- **Method: involvement of all the functions**
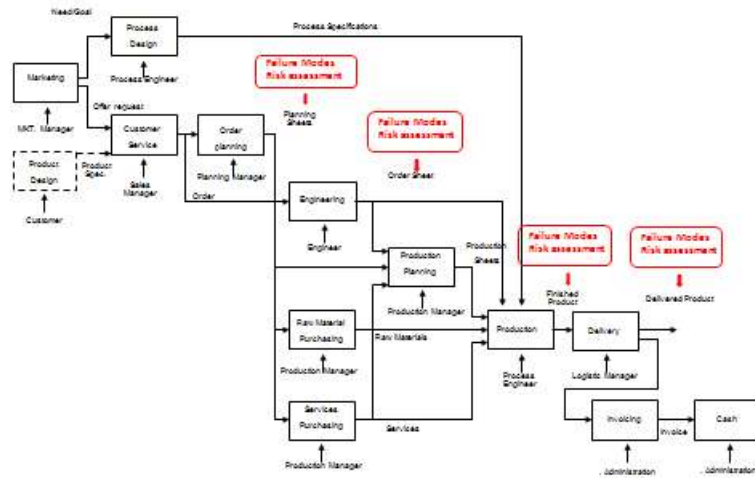- **Mapping tools**

Process Description

- **Taxonomies and levels**
  - **Roughly structured: Order Handling, Production, Delivery, …**
  - **ISO/TS 22163 (Railway): Project Management, Configuration Management, Obsolescence Management, …**
  - **APQC Process Classification Framework: Develop Vision and Strategy, Market and Sell Product, Acquire, …**
  - **ERP Processes: Order Handling, …**
- **Mapping: notations and tools**

BPMN

Customer Order Handling

CUSTOMER SERVICE

IDEF0

SIPOC

Supplier	Input	Process	Output	Customer
Quality	Check 1	Quality Check 1	Quality	Check 1
Purchasing	Order		Purchasing	Order

TURTLE CHART

PROCESS MAP

WHAT	WHO
INPUT	OUTPUT

MANUFACTURING

HOW	MEASURE, RISK

P1 STRATEGIC MARKETING - INNOVATION

P2 FRONT-END PROCESS

P3 BACK-END PROCESS
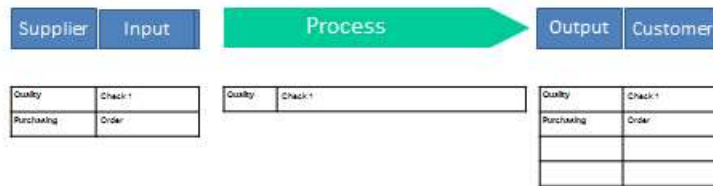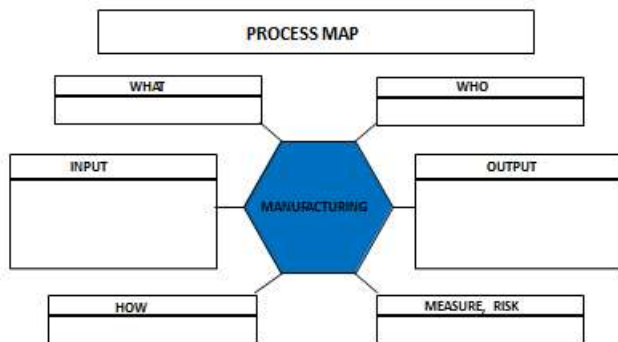
Experience
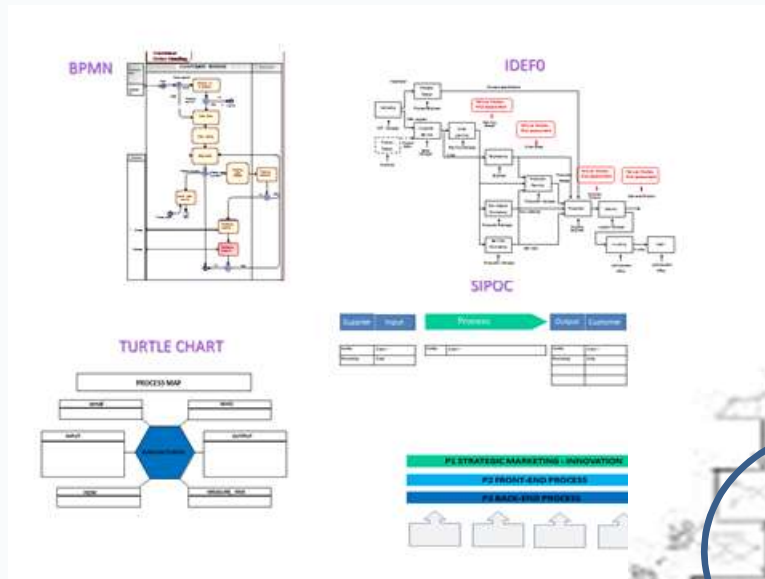
An example
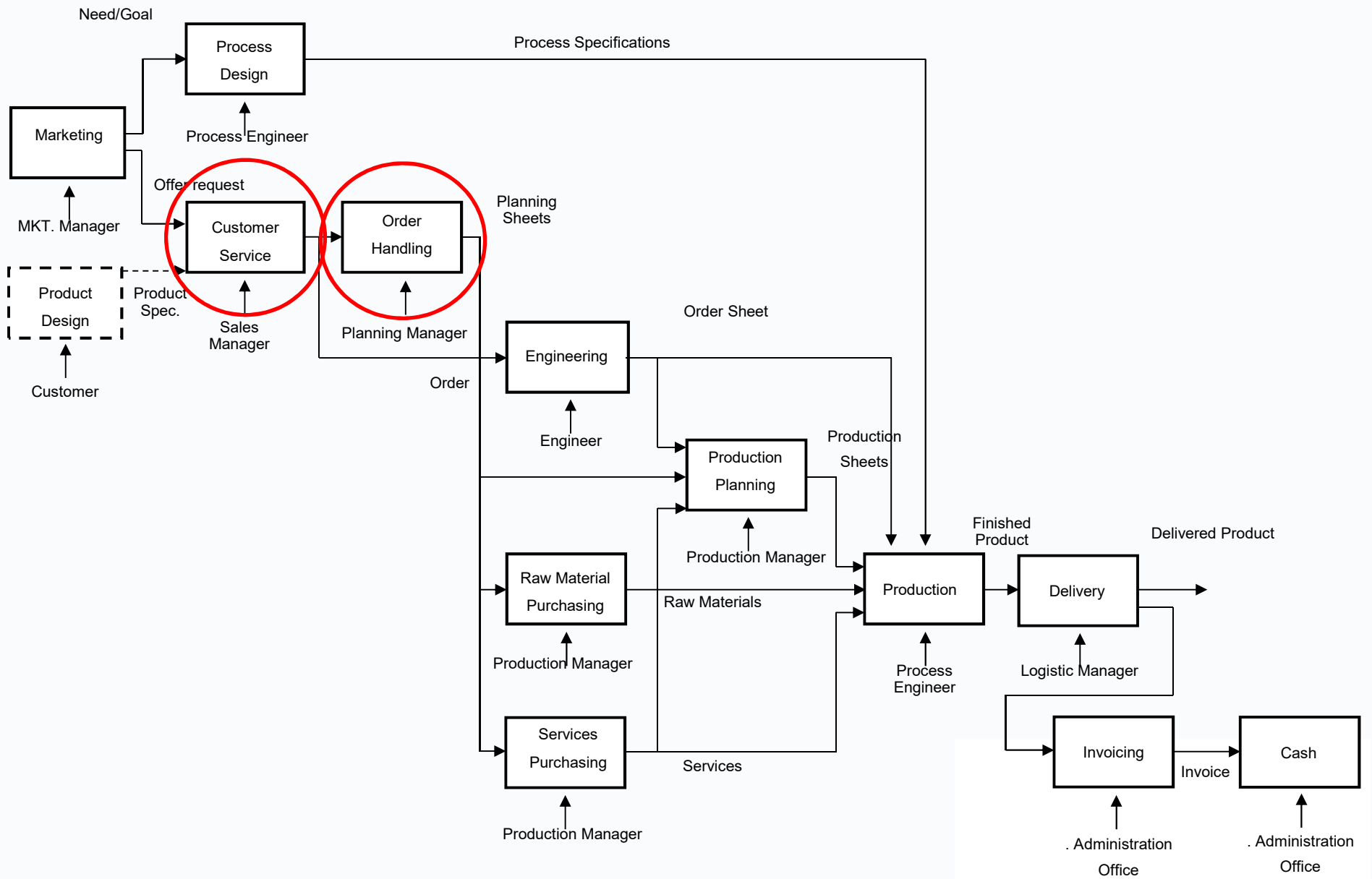
Requirement of ISO 9001: Operation

- Customer related processes

- Design

- Provision of product and services

- Production

- Delivery

- Control

Customer Order Handling

CUSTOMER SERVICE	PLANNING

Contractual data

Customer list

Start → Market segment

- Small → **Sending link to customer** → Customer confirm? → YES → Archive
- Large → **Order check**

Order check → **Order loading** → **Stock check**

Stock check → Product available / Product not available

- Product available → **Internal order issuing** → Data check → End
- Product not available → **Checking stock forecast** → **Checking production** → NO / YES

Contact → **Contacting customer** → **Contacting customer** → NO / YES

Customer

Order Handling

Customer Service	Accounting	Production Planning	Logistic

A — Customer order receipt formalized with the Internal order form (A).

B / **C** — Fill in of customer order in ERP system as Draft Order (B) according to the price list defined by Sales (C)

Check of the delivery date

D — **Check of credit position with the Over credit limit report (D)**

If credit limit exceeding the order become "blocked" and can not be confirmed to the customer.

**Check of the customer credit position.
Unblock only in case of financial approval by the Accounting Manager**

E — Order confirmed to the customer according to the delivery date (E)

Check of order confirmation consistency

The order acknowledgment to the customer

Delivery

Results

- **Refinement of the design method**
  - **Planning of meetings**
  - **Involvement of top management and 'process deputies'**
- **Relationships with other process analysts**
  - **Controlling Area**
  - *Information System Area*
- **Mapping**
  - **Effective way of communication**
 - *Choice and meaning of the notation*

Reflections

- **Any type of graph is better than a table**

- **Drilling down the processes**
  - **Several layers**
  - **Different points of view to describe the same process**
  - **No relationships, even with the same notation**

- **Meaning of the graphical symbols**
  - **Arrows relate to time, goal, entity**

Outlook

- **(Action) Research theme**
  - **Defining a method**
  - **Proposing a socio-technical project to my customers**
  - **Sharing methods and tools with IT function**
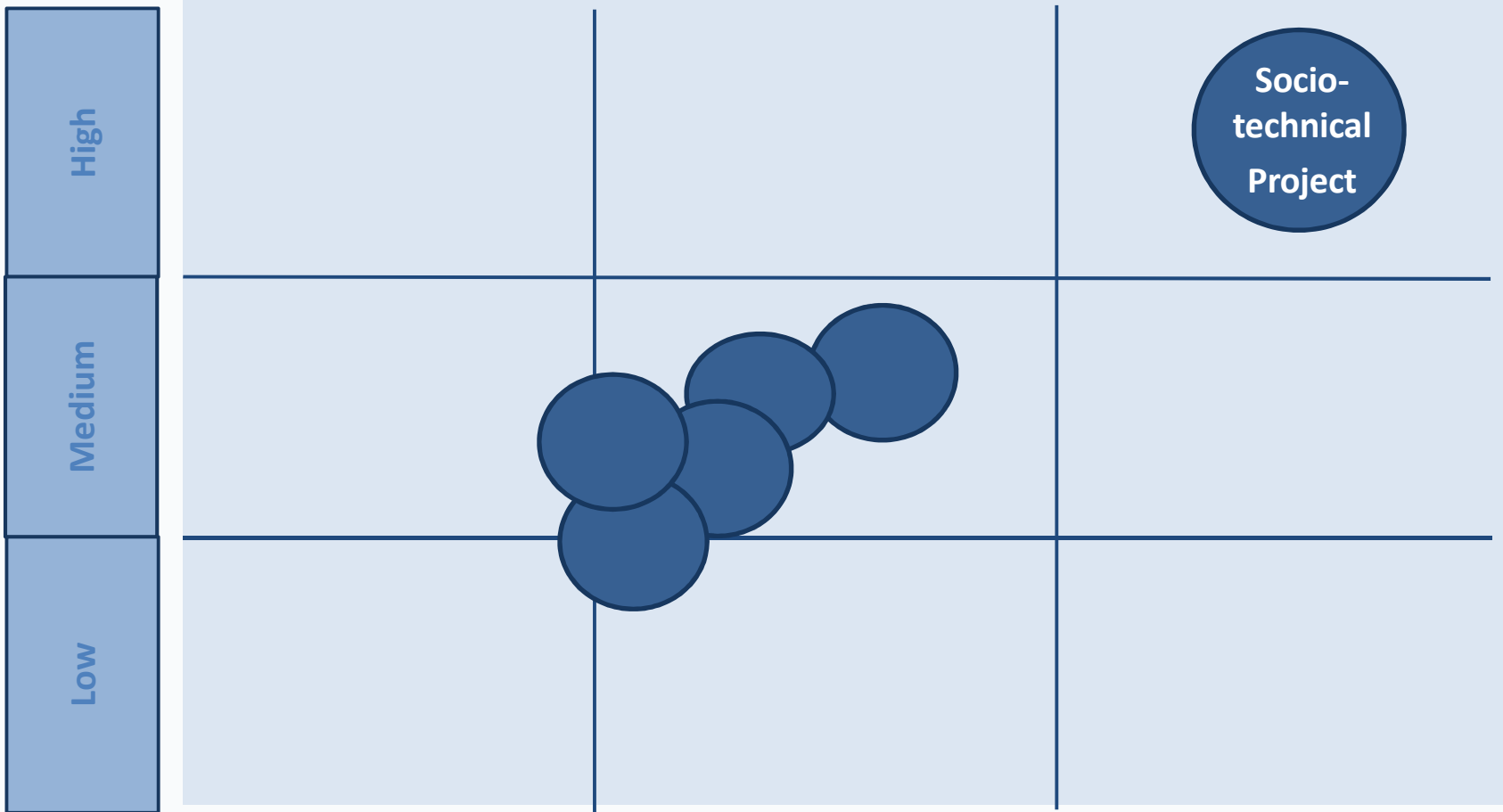
Outlook

- **Research theme**
  - **Reflecting on maps and graphical symbols: ontological dependence**
  - **Ontology versus Epistemology. How the model corresponds to the observed reality**
  - **Exploring other maps and graphical symbols**

Thank you