

# Monitoring and Evaluation of UDTII Projects



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# Background and Methodology

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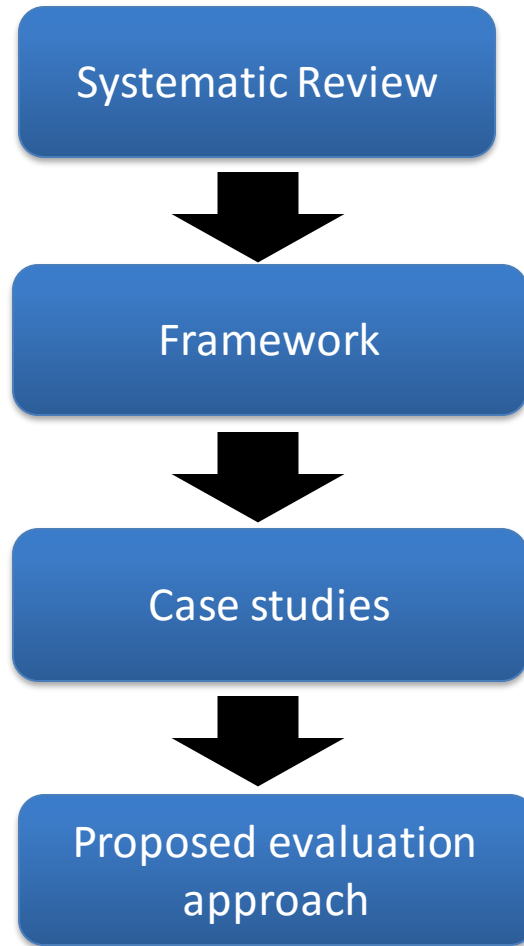
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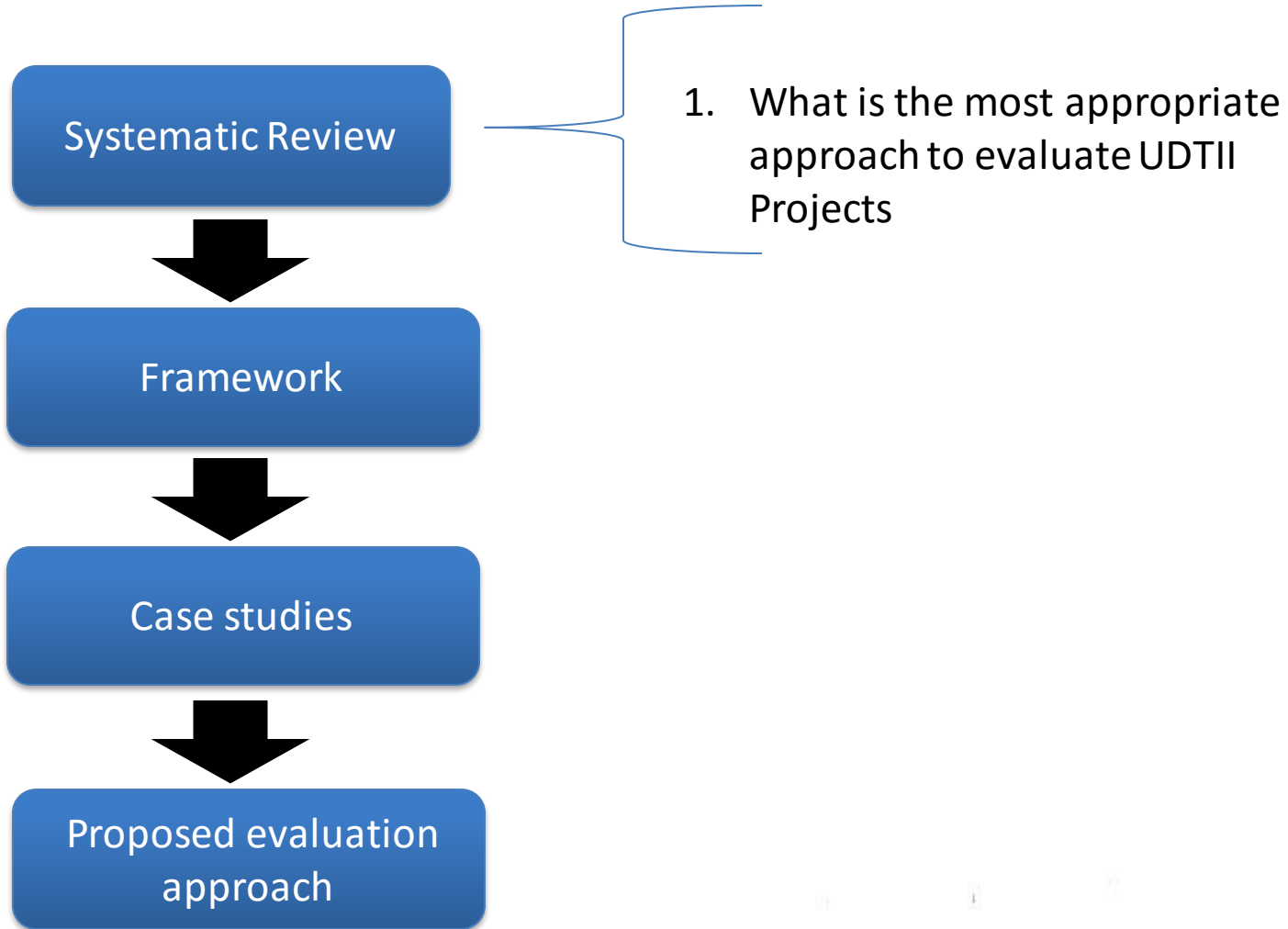
- R&D Management conference, Cambridge (2016)
- Presented at the SAIE conference (2016)
- Published in the SAIE (2016)

# Background and Methodology

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# Method



# Step 1 : Systematic Literature Review

Search

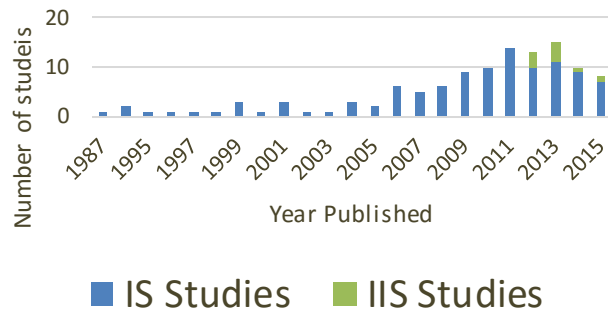
117 Studies

8 Approaches

Criteria

Selection

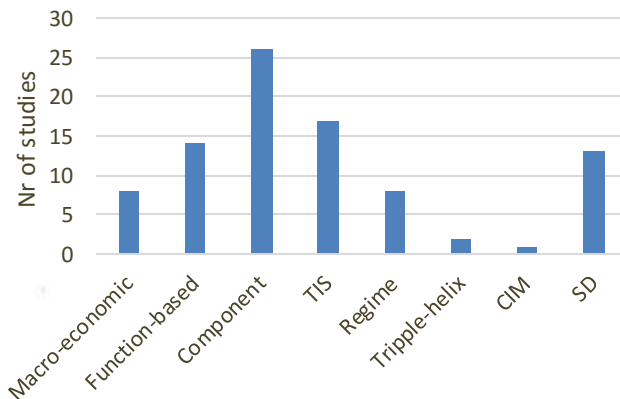
Amount of studies published per year



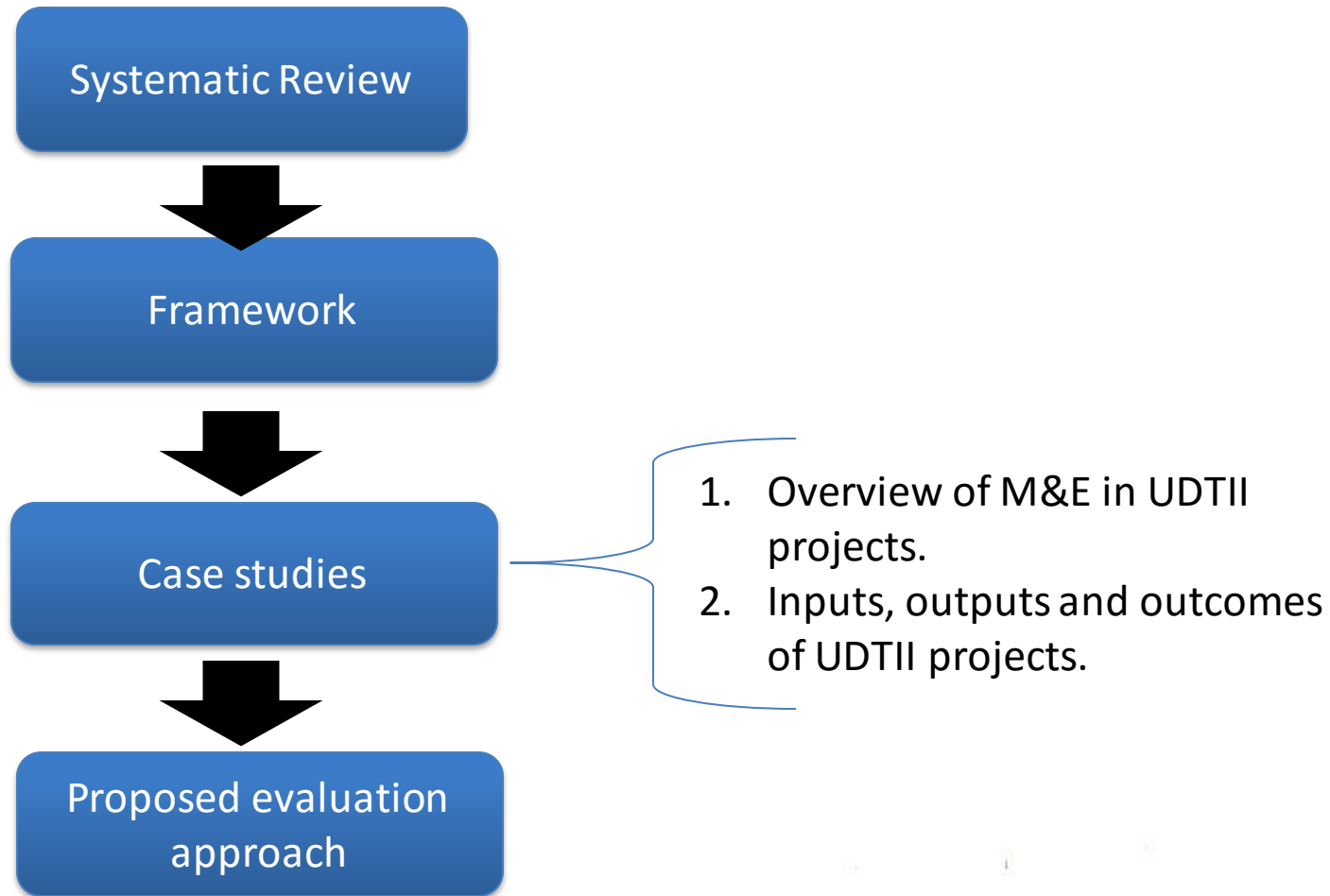
## 8 Approaches Identified

1. Macro-Economic
2. Functions
3. Components
4. Component-Functions (TIS)
5. Regime
6. Tipple Helix
7. CIM
8. Systems Dynamics

Frequency of approaches



# Method



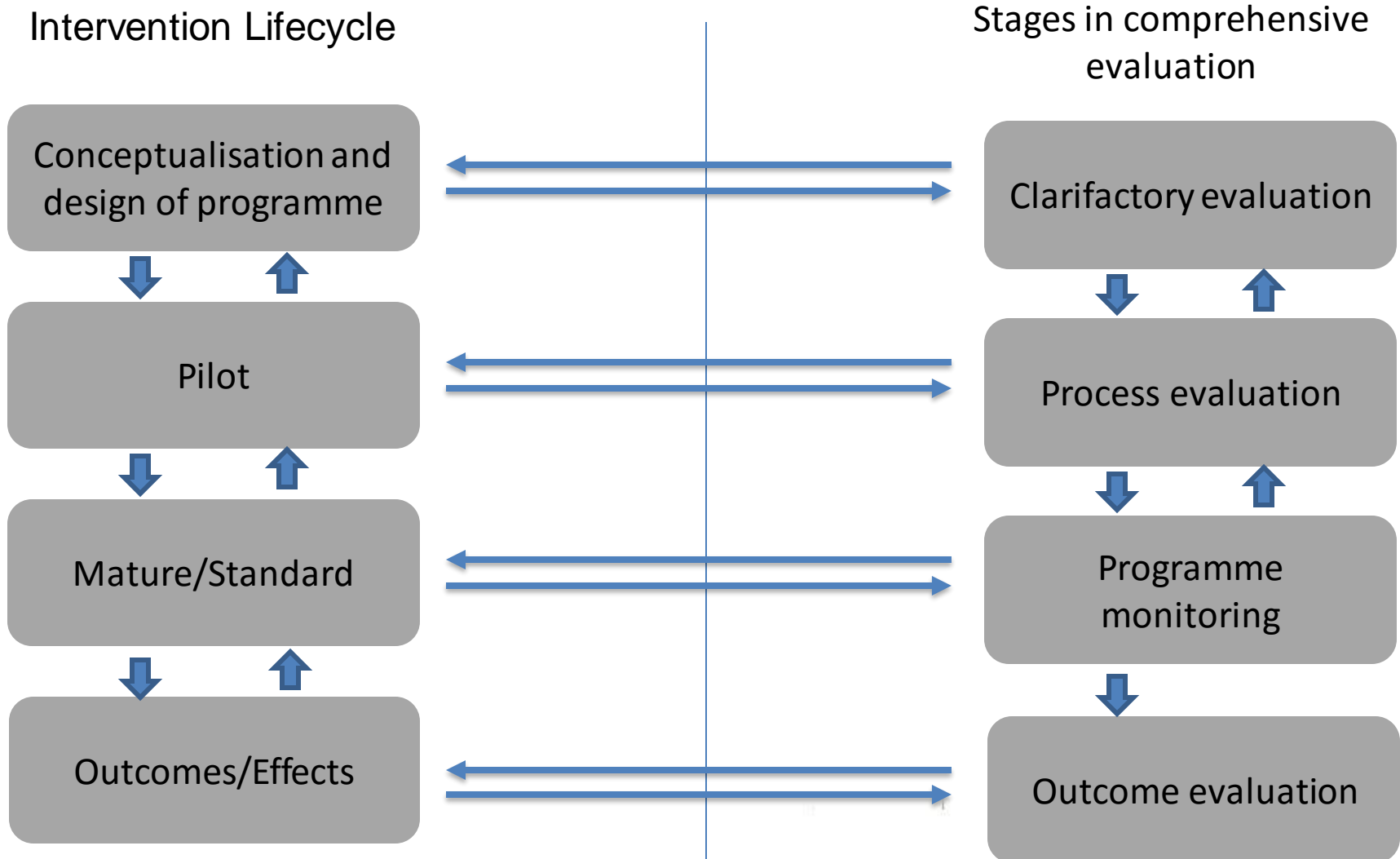
# 1. M&E in UTII projects

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Questions we set out to answer:

- Are projects being monitored and evaluated? To what extent?
- Barriers that inhibit outcome/impact evaluation?

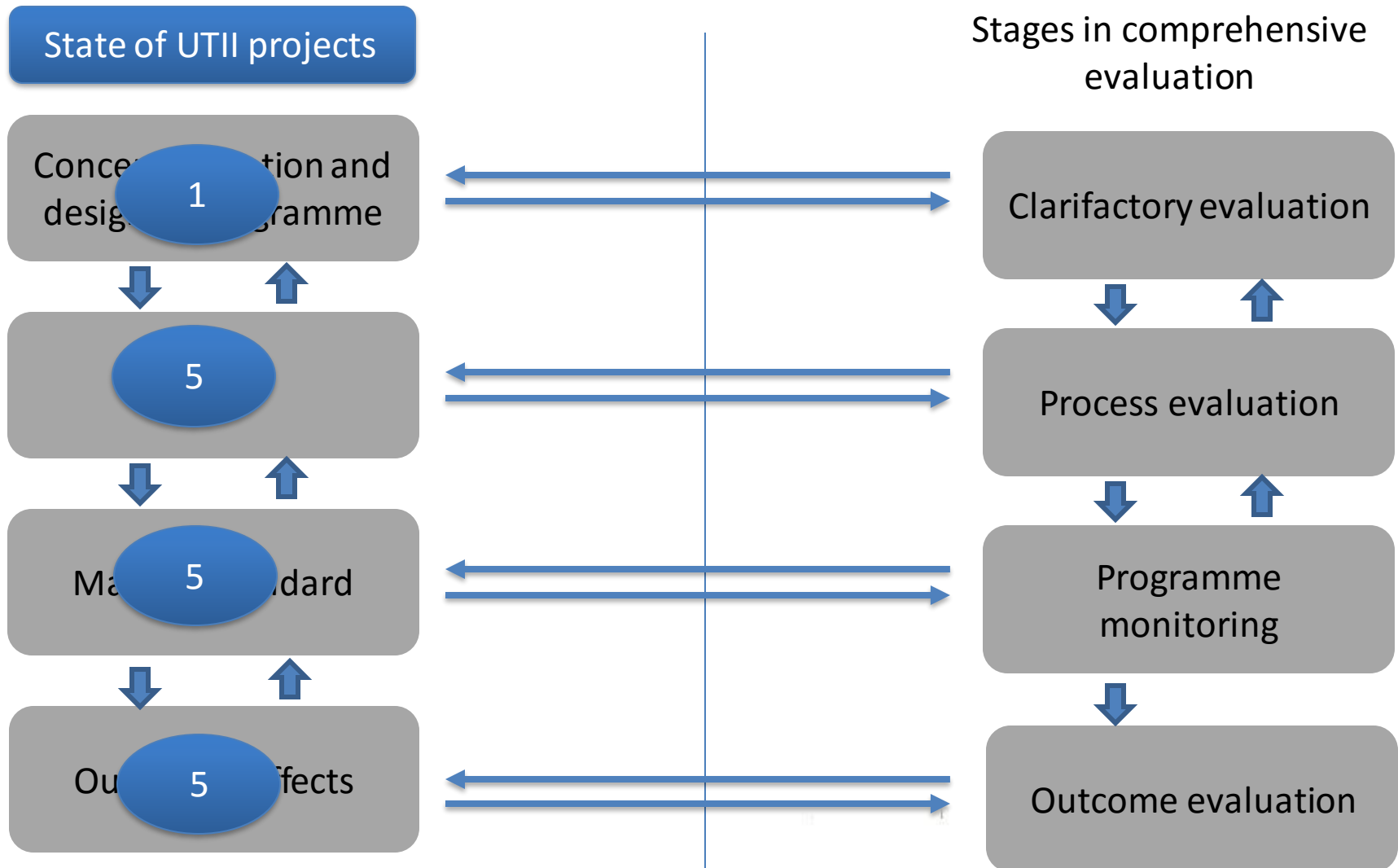
# Current state of M&E of UTII projects in our sample



[1] Evaluation model developed by Prof. J Mouton

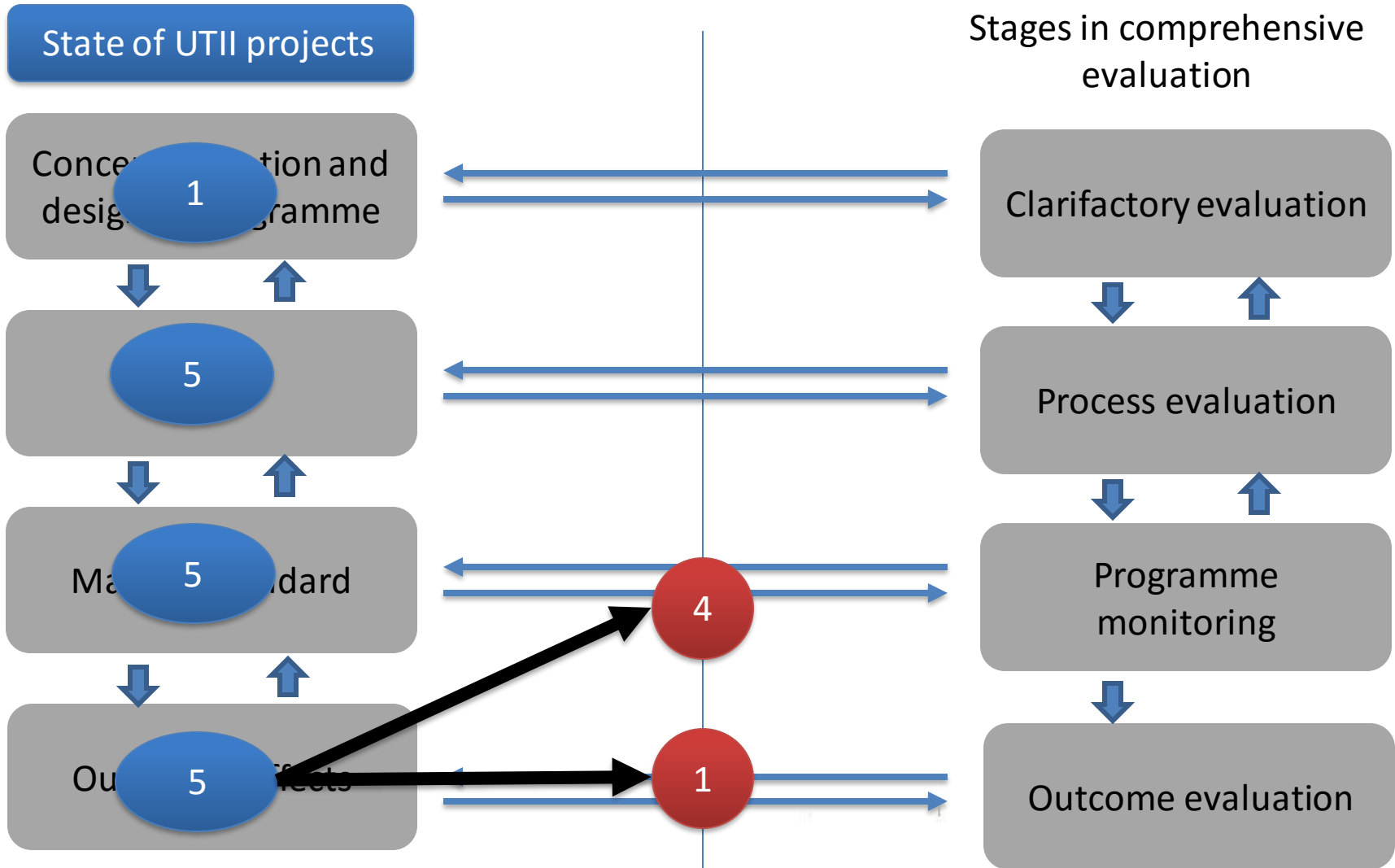


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# Barriers that inhibit outcome/impact evaluation

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## **Institutional factors**

- Lack of incentives (university incentivises publications and research outputs)

## **Human factors**

- Lack of skills to perform such evaluations
- Team turnover (students)
- Limited resources
  - Time
  - Human infrastructure
  - Funding

## **Context factors**

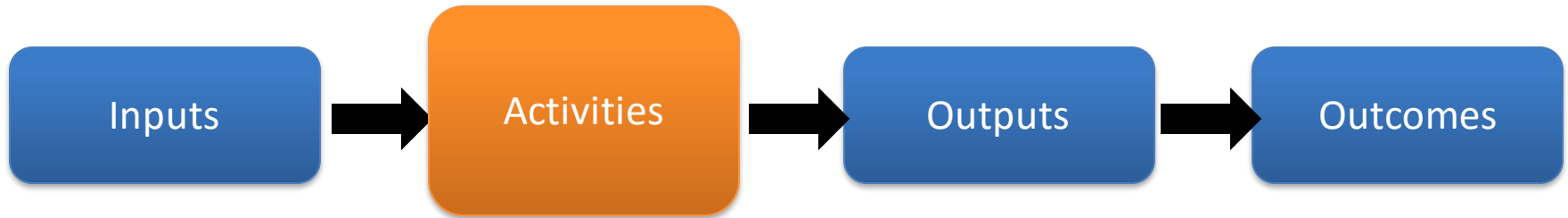
- Political situations within communities could inhibit return to a community

## **Evaluation factors**

- Resources to collect data
- Inappropriate methods/instruments
- Lack of participatory evaluation (community does not continue in their own)

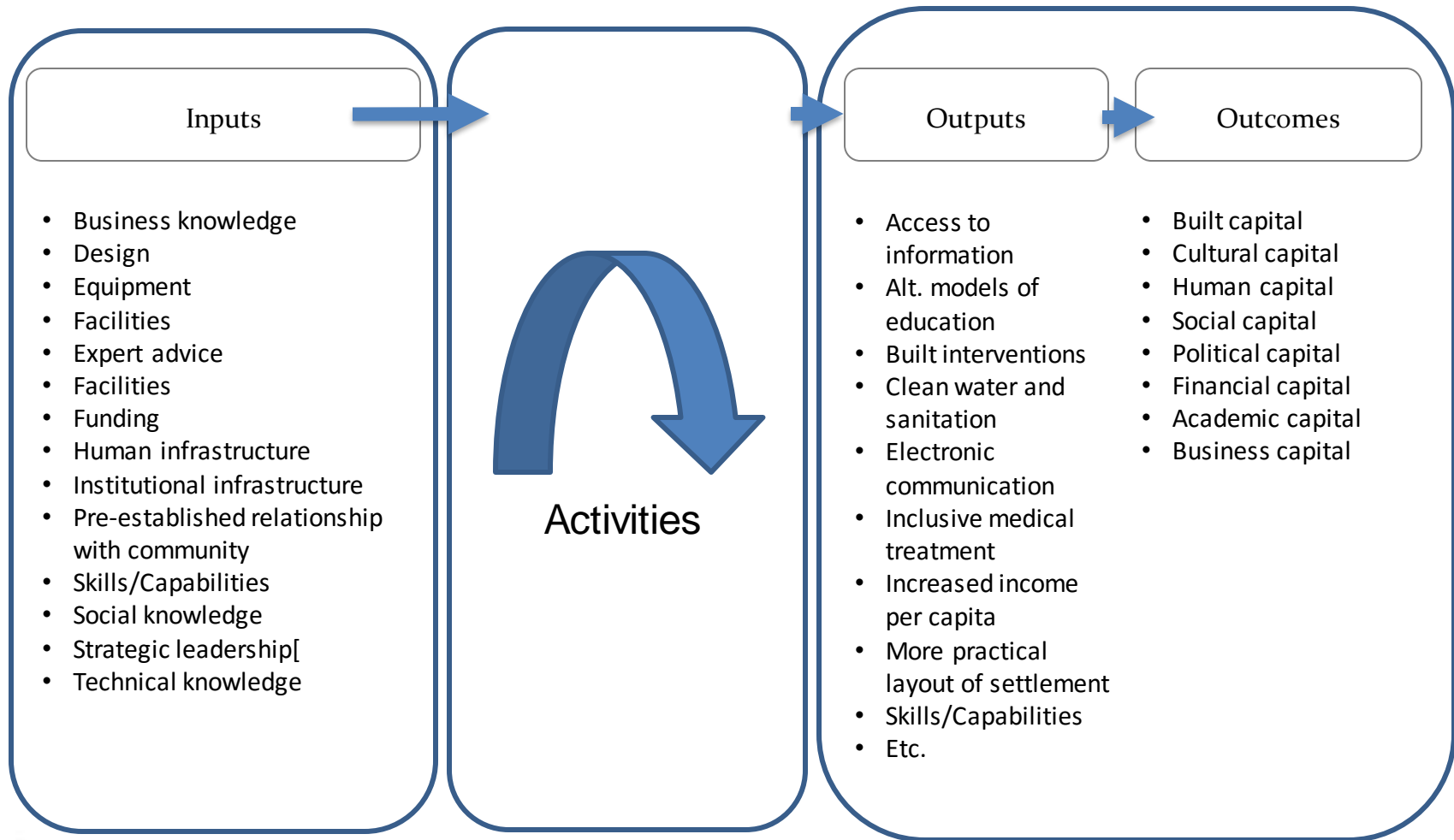
## 2. Inputs, Outputs and Outcomes of UDTII projects

Logical structure of innovation

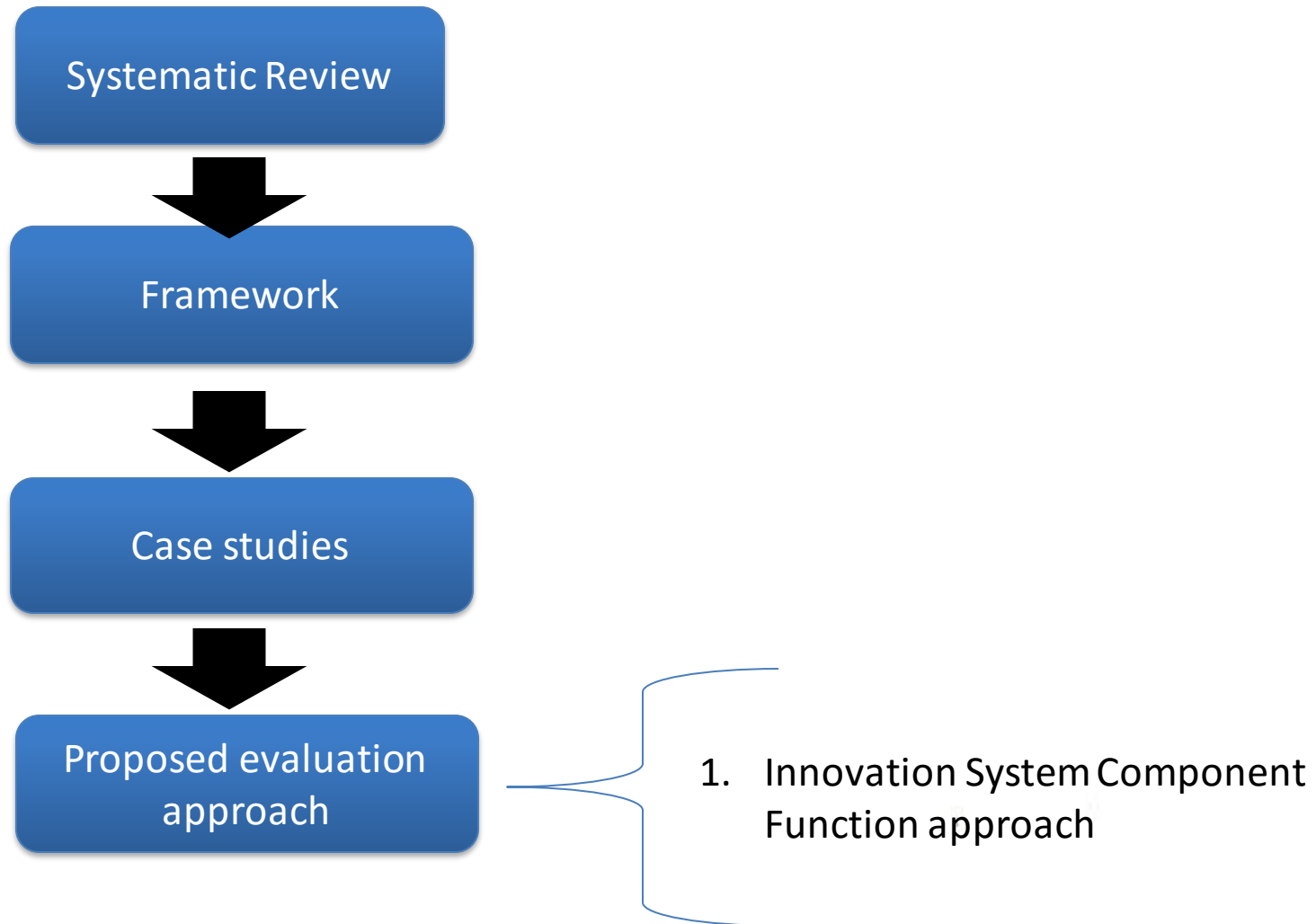


- **Inputs:** The resources required to perform activities/functions.
- **Outputs:** The measurable and tangible results of the activities conducted.
- **Outcomes:** *“an effect on, change or benefit to the economy, society, culture, public policy or service, health, the environment or quality of life...”* [2].

# Towards a Typology



# Method



### 3. Proposed evaluation approach

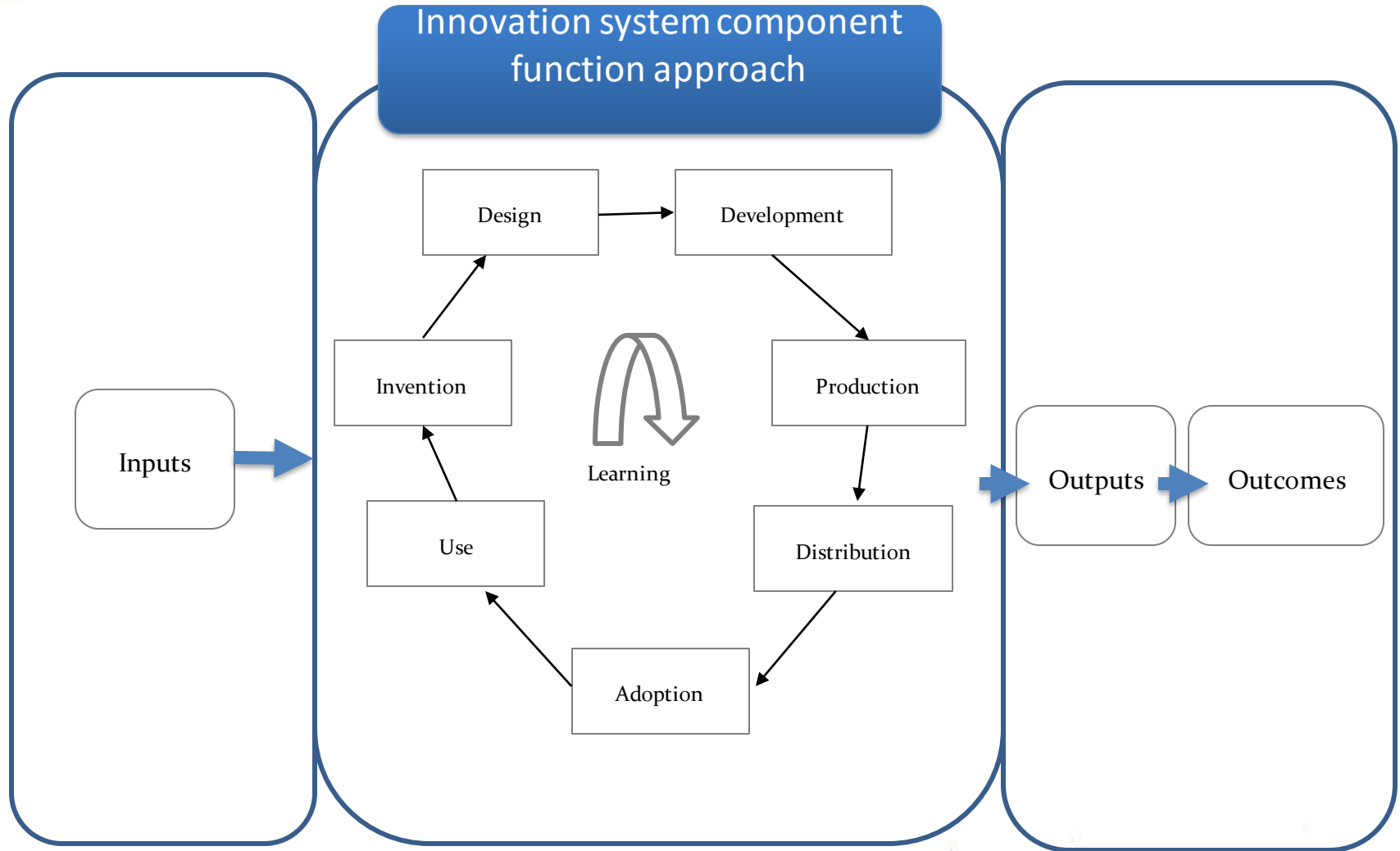


Figure 1: Process map of innovation for inclusive development [3]

[3] Process view adapted from Foster & Heeks, 2015

# Component assessment

<b>Innovation</b>	The nature, drivers, strategies and innovation processes
<b>Actors</b>	The institutional background, incentives, resources and capabilities of contributors
<b>Interaction</b>	The major focus for interaction is the nature of partners, engagement and partnerships
<b>Knowledge and learning</b>	<ul style="list-style-type: none"><li>• Actor roles</li><li>• Mechanisms of knowledge development</li><li>• Types of knowledge</li><li>• Drivers of knowledge development</li></ul>
<b>Infrastructure</b>	Knowledge, physical and financial infrastructure
<b>Institutions</b>	<ul style="list-style-type: none"><li>• IP and models of ownership</li><li>• Development of trust</li><li>• Co-creation models</li><li>• Community engagement</li></ul>



# Function Assessment

<b>Function</b>	<b>Description of Function</b>
<b>F1: Entrepreneurial activities</b>	Functions through which the potential of new knowledge, networks and markets” are exploited into tangible actions, taking advantage of possible business opportunities.
<b>F2: Knowledge development</b>	This function encompasses all activities related to the processes of knowledge development and learning.
<b>F3: Knowledge exchange</b>	This function encompasses all activities responsible for the facilitation of interaction within and between networks. The focus of this function is knowledge transfer and diffusion and the accessibility of knowledge and resources.
<b>F4: Guidance of search</b>	This function provides guidance on the specific foci to be chosen for further investment.
<b>F5: Market formation</b>	Functions through which a market is formed for new technology.
<b>F6: Resource mobilization</b>	This function encompasses all activities that provide support to access Human and Financial resources.
<b>F7: Creation of legitimacy</b>	This function encompasses all activities that support the increased acceptance of a technology.

# Functional Analysis

Function	High score	Project															
		A1	A2	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	C5	D1	D2
<i>F1: Entrepreneurial activity</i>	6	0	3	3	3	3	3	5	3	3	4	3	4	3	2	4	3
<i>F2: Knowledge development</i>	2	1	2	2	2	2	1	2	2	2	2	1	1	2	1	2	2
<i>F3: Knowledge dissemination</i>	2	1	2	2	2	2	1	2	2	2	2	1	1	2	1	2	2
<i>F4: Guidance of search</i>	3	-1	3	3	3	3	3	3	3	3	3	3	3	3	1	3	3
<i>F5: Market formation</i>	5	3	5	3	5	5	1	5	3	5	5	5	1	5	1	-1	3
<i>F6: Mobilisation of resources</i>	3	-2	2	1	3	0	0	3	0	3	2	2	1	3	0	0	3
<i>F7: Creation of legitimacy</i>	4	2	4	2	4	2	-2	4	4	4	4	0	2	4	1	2	4



# Functional Analysis of project B6

Pressing area	Indicators	Explanation (functions)	Solution (components)
F1: Entrepreneurial activity	<ul style="list-style-type: none"> <li>• Project champion</li> <li>• Degree of community involvement</li> <li>• Experimentation</li> </ul>	Marginalised communities not included in Design and Development phases of the innovation	Include community earlier: workshops etc.
F5: Market formation	<ul style="list-style-type: none"> <li>• Business models?</li> <li>• Sufficient human infrastructure</li> <li>• Sufficient tech infrastructure</li> <li>• Sufficient financial infrastructure</li> </ul>	Lack of awareness of these projects, therefore lack of demand No business models in place	Awareness campaigns to create demand (market) for these type of projects in marginalised communities. Business models need to be created in order to make project sustainable.
F6: Mobilisation of resources	<ul style="list-style-type: none"> <li>• Access to capital</li> <li>• Access to human, physical and financial infrastructure required?</li> </ul>	Stand-alone projects, no platform from which to pool resources	Relationships and networks need to be formed in order to create innovation platforms where resources such as knowledge and equipment can be shared.

# Conclusion

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- There exists a gap in the area of evaluation socio-economic impact of UDTII projects.
- There are several barriers that inhibit evaluation.
- We propose the IS component function approach as an appropriate approach for opening the 'black box' of evaluation UDTII projects on a systems level.



# Thank You

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