

Technology-based economic development

Project abstract

1. Technology-based social constructivist network model

Let me start the analysis from a social constructivist network model, in which:

- technology appears as artifacts, processes and embedded knowledge
- actors are heterogeneous entities possessing values, expressing their opinion, reaching agreement and acting according to strategies (later on I will examine their experience, learning and their relation to their environment)
- the actors have only one common point: they assume that a technology is stabilized if and only if the heterogeneous relations in which it is implicated, and of which it forms a part, are themselves stabilized

Among the actors, heterogeneous relations are processes of negotiations and/or conflicts that are characterized by constant interactions: technology valuation and exposure to values. This process has the following interactive steps:

Problem awareness and definition – differences and conciliation – towards stabilization – closure

The system has another important element: innovation. Its source is the difference, the conflict between value and technology. Innovation is a reaction to this difference, i.e. a problem-solving containing novelty and uncertainty, and it can be incorporated into a new artifact or process, or put into a new context.

Innovation is based on human inventiveness – and I consider this problem- and solution-seeking activity, and the conflicts between values and technology, as permanent. From the aspect of the network model as a whole, it provides a constant, continuous source of energy.

The further 'fine tuning' steps of the network model are as follows:

- as a first approach, I consider innovation as an element of satisfying needs
- I would like to investigate the movement of the network through the appearance of some basic values, and to examine further what relations, what technologies and what further actors are generated and created based upon these values – economy, politics, ecology and other issues (e.g. gender studies)
- one can examine the network model from several aspects: it can be considered as a system – then technology is the focus; or as a function – then organizations are the focus; or as knowledge - then communities are the focus.

2. Is there an element of development?

I would like to examine whether this network of energy has a development and a direction.

The novelty and the uncertainty of innovation keeps the network moving. It also changes the technological

network (at the level of technologies, values, relations, actors, organizations, knowledge and at the level of the whole network).

Later on, I would like to focus on innovation: its definition, its emergence, its diffusion, and to what extent it can provide a new technology and new values, and how it can transform the whole network. (I would like to use the new model of innovation based on the concepts of S. Kline and N. Rosenberg)

3. Hypothesis of evolutionary development

Hypothesis: it can be assumed that

- there is a certain link/relation between every actor and its environment – can this be translated into the selection mechanism of the evolutionary model?
- there is a certain learning and experience-based constant element in actors – can this be translated into the variation and adaptation of the evolutionary model?

If yes, then can a basic unit, or gene, be defined that is a common characteristic of the individual actors?

4. The historical analysis

I would like to presume value as the approach of Maslow's hierarchy of needs on individual and group level. I also consider science as an objective part science, which I would like to examine using the Kuhnian definition of scientific paradigm. I will not cover artistic approaches.

1. Dimension: political-economic (social values are already incorporated in the model, based upon the starting conditions)

It is important to emphasize that values, functions and communities striving to formulate a common strategy and to regulate the relations among actors emerge first, i.e. political power and law. The economic dimension appears with the values of need and relations, functions and organizations striving to satisfy these needs (specialization, exchange, production). In connection with this, self-regulation appears in the form of economic and technology policy.

From the emergence of economic thinking in the 17th century, I would like to investigate the development of economic values, functions and communities based on technology or on innovative and agreement processes, with a special regard to economic-technologic regulation. I would like to use an evolutionary approach for this analysis, that is:

- I would like to try to define the selection filters/mechanisms of the environment (on the level of values, function, community, agreement process)
- I would like to define the gene-basic unit of the actors, and to follow the processes of variation-adaptation processes

(mainly based on the Schumpeterian approach to economics and on the Veblenian institutional approach)

For the scientific research part I would like to use the Kuhnian scientific paradigm approach.

2. dimension: ecological

I also intend to examine the evolutionary development of values, functions, communities and innovation and agreement-based processes from the aspect of ecology and ecological regulation. I would like to focus on the conflict and harmonization processes of economic and ecological values.

3. dimension: gender studies

I also plan to examine the evolutionary development of values, functions, communities and innovation and agreement-based processes from the aspect of gender issues and regulation.

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