Evaluation "Toolbox Value Creation" (WP-101)

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Introduction

TransForum aims to promote sustainable developments, which includes People and Planet considerations alongside Profit values. This requires adopting an inclusive and dynamic view on the composition and agenda of innovation oriented production networks, including the inputs, processes and outputs of the interrelated group of stakeholders. How to facilitate innovative production networks in thinking through their 3P opportunities and the dynamic development of the stakeholder-network involved?

Aim

To create a toolbox for identifying and depicting PPP value chains in agro-food production networks. The toolbox should enable the identification of processes and their multiple inputs and outputs ('MiMo', multi-input, multi-output) as well as the flows between them. It should be dynamic as to enable the inclusion of new stakeholders. It should explicitly enable to model People, Planet and Profit values as distinct but combined areas of concern.

Set-up

The project included the following elements: (1) the creation of a multi-disciplinary team including expertise about change processes, process modelling, tool development, and the agro-food domain involved (i.c. the pork chain); (2) the interactive development of user requirements; (3) a search for existing tools and development of missing elements (4) integration of findings and formulation of both a modelling tool and a process handbook.

Main findings

Existing tools for describing agro-food production networks turned out to be available in two main categories:

- Problem finding tools with high-level drawing tools and a non-quantitative or semi-quantitative modelling perspective. These were not applicable to the project because they lacked a mass balance of inputs and outputs in the production chain. This made them unusable for quantifying things such as production volumes, CO_2 production, noise production;

- Issue analysis tools with quantitative models. These include MCDM (Multi-criteria Decision Making) and LCA (Life Cycle Analysis). These were not applicable for the project – at least not as the only modelling tool - because they were inflexible as to problem delineation. Flexibly adding actors in relation to types of input and output or processes was a requirement.

Design activities led to a mock-up of a tool for which a development path was now sought. One of the tools that came closest to project requirements was DANA (Dynamic Actor Network Analysis). DANA is a problem finding tool which allows to create perception graphs with flexible delineation and perspective taking of various actors. Pieter W.G. Bots, the designer of DANA, from TU Delft, subsequently developed a tool specifically suitable for this project's specifications: The project team added some reporting and overview facilities to this version, yielding the dedicated tool "QChain", one of the central deliverables of this project. QChain will be available on this website and on http://qchain.net as from December 31, 2010. It will be available as a shareware software piece, and can be further developed in new projects.

The way in which the use of Qchain is advocated in a project of collaborative chain value creation is described in the second project deliverable: the Handbook Collaborative Value Creation. As from December 31, 2010, the Handbook will be downloadable from: www.ldi.wur.nl. The pilot project was a mixed experience. On the one hand it confirmed the experience that is not easy to start an innovation project in a company if such a project is not emergency-driven and other events attract top level attention. On the other hand experiences express the importance of obtaining the support of key decision makers, based on a belief in the positive value of the tool aimed for.

The main results from the pilot study concern:
- In a production environment, the notion of a change process as such is not alluring while the idea of drawing a MiMo mass balance of the current chain is. Once the balance and the model it is based upon are there, the process of change becomes understandable;
- Obtaining reliable, complete data about the primary chain process is a laborious task on its own, even in a high-quality company environment. The tool may be helpful here in indicating where the 'knowledge holes' are;
- In a large, modern, food production company, it is not possible to find somebody who combines encyclopaedic knowledge about the whole chain process with detailed knowledge about its components. The tool may help to bridge the gap.

A public presentation of the toolbox at a conference of the Dutch Public-Private Top institute for Food and Nutrition in 2010 showed a varied and sincere interest in the toolbox from around ten enterprises and not-for-profit institutions.

Conclusion

This was a brief project (14 months) based on a limited capacity and a straightforward idea: innovations in a production network are enhanced by adopting a perspective that combines 1) a whole-chain multi-input, multi-output perspective on all processes, 2) a dynamic problem delineation allowing for the inclusion of non-obvious stakeholders, 3) inclusion of People, Planet and Profit considerations as distinct variables in a combined model.

The QChain tool is straightforward and easily usable. A freeware version is available in the public domain and further developments, with interested parties is possible. The process model around it has only partly been tested in the pilot project, but looks promising.

Meaning for TransForum

TransForum seeks ways to facilitate open, transition-enabling innovation processes. This project provided a toolbox to do so.

Implications for Metropolitan agriculture

Although this was not an explicit element in the project, in principle, QChain enables the explicit modelling of PPP values across urban and rural landscapes, thus enabling a critical evaluation of interrelated urban-rural value-creation and capturing models and the urban-rural stakeholders related.

Implication for connecting values

QChain combines the explicit modelling of PPP values (People, Planet, Profit) with a clever way of visualizing a production network, including additional stakeholders or processes, and calculating the mass balance of the network, based on conversion ratios in its processes. The balance between rigor and relevance, and the explicit support for scoping, make it very usable for both charting existing processes and investigating potential changes.

The Toolbox, including the PPP perspective and QChain, enables a quick scan of an organization. It may make use of QChain's visualization techniques in collaborative modelling, but can also support in-depth modelling by a consultant or domain expert.

The project provides a proof of principle for the perspective that People- and Planet-related considerations need not to be converted to currency before they can become meaningfully incorporated into decisions on innovation in production networks.

Implications for the knowledge infrastructure

If applied in accordance, QChain is able to model the added value of including the knowledge infrastructure in innovation oriented production network. At the same time, it is expected that the application of QChain is best managed by a knowledge party, as part of an overall knowledge management program, accompanying innovation production processes.