

A Multilevel Actor Approach to Social System Innovation

AcadeMi-IO: T. Lohman, J. Hak, W. Gielingh.

A multilevel innovation approach

The post-industrial separation of learning and working hinders innovation of contemporary social systems; lifting this watershed brings natural learning that drives innovation. We developed a novel concept making better use of the knowledge and talents of people as a basis for social innovation. Our concept takes a multilevel approach based on the principles of meta-state transitions and entropy (see

Figure 1). At higher level we control increasing complexity and restore order, using new structures. We start transition at individual level through self-organizing teams, exploring emerging talents of individuals in teams. Team member feedback results in an increase of learning effectiveness and pace. At organisational level, exploration en exploitation object functions across the lifecycle are integrated. End user feedback drives use value innovation, leveraging sustainable design and eco-awareness. A third transition level is the co-creation of knowledge by SMEs and educational institutes in the sector. Industry feedback, in turn, increases valorisation of knowledge. Finally we define a value chain level, which enables us to export total solutions for global fundamental problems on food, water (c.f.

Figure 1) and care, we believe could be tackled by innovating social system innovation structure itself.

An actor-driven approach

Key question is then: how to accelerate the process of self-organization? Peter Drucker and Pierre Malotaux formulated the answer: *"If we can connect our talents with types of tasks and we make the talent growth measurable then we have organized the feed-back for motivation of learning"*. Over the past decade we developed an innovation instrument together with several industry branches and education institutes meeting the functional requirements. We integrated generally accepted system theory models with emerging models of cognition and semantics into a 3x5x5 cubic framework. This framework enables actors to position themselves (Why?) and define a learning strategy to develop themselves (How?) from role to role and from work to work (What?). This *actor approach* for self-developing knowledge and talents has been experienced with successfully at individual-, organisation-, and sector level over the past 7 years. Actors learn innovating on the job in just half a half year. Stepping up the Maslow Pyramid, people become increasingly motivated, with productivity of knowledge and well-being increasing.

Self-organizing Systems

The fundamental principle of our innovation approach is that we optimally exploit of the ability of people to create things in groups through self-organization and stigmergy – sharing results and cooperating without direct communication --: a common goal, a transparent structure and generic

roles allow people to self-organize and run fairly complex projects, without extensive planning and control.

Together they build a collective memory and intelligence, based on collective sensing mechanisms. A familiar example from nature is the self-organization of ants creating complex nests and social structures to survive. Another example is the development of complex open source software and Apps. The growing application structure (What) is made transparent enabling designers to contribute to the assembly and integration of growing system functionality. People differentiate and specialize tasks fitting their own ambitions and capabilities, contributing to the overall system functioning and performance. The innovation instrument makes these processes explicit and focuses on breeding meta-talents for the handling of knowledge, learning and change.

New leadership

A new holistic-thinking kind of leadership is required along from SME (MKB) and education managers. Organisations will become more adaptive and responsive to the environment through available modular knowledge structures. This requires controlling and promoting of knowledge explicitation and the implementation of sensory and semantic tools for self-organization. The collective mind and intelligence will thus establish. As soon as management becomes aware of its own old-economy obstructions, they will become motivated for change and start delegating tasks to the work floor. Consequently, stress reduces and attention shifts from What, to Why and How type-of-thinking.

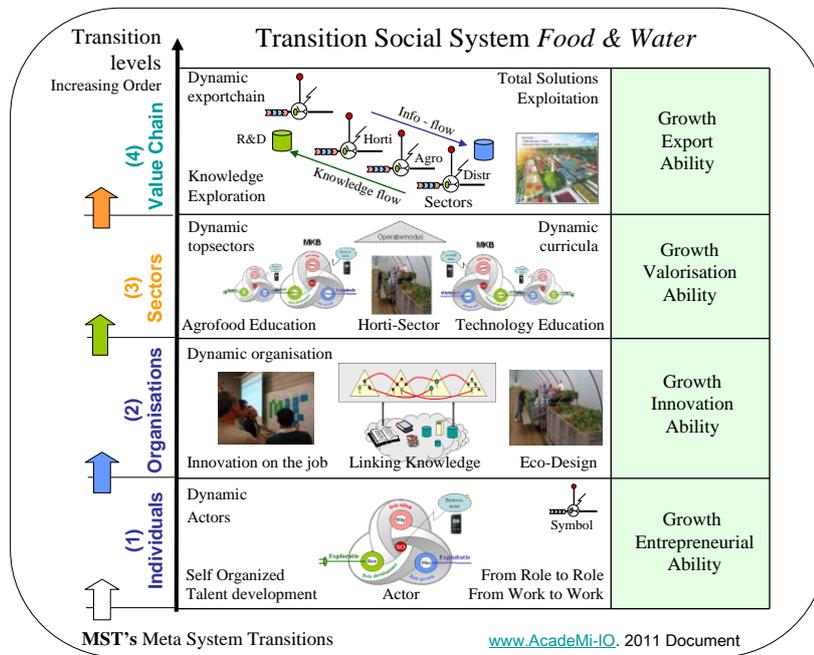
Export growth

The IPC-instrument is an instrument implemented by our Ministry of Economic Affairs to increase SME innovation ability. In 2007 this instrument enabled us to launch a sector level IPC-experiment with SMEs, students and teachers within a knowledge chain. SMEs start the innovation cycle with innovations-on-the-job, and by supporting students. Best-practices are transformed into new modularly structured curriculums for generic roles in the industry. In 2010 we started an international-level IPC-experiment with China to co-innovate a total solution for their food security problem. A new level of complexity requires new structures: together with SMEs and academic and vocational education institutes we developed the concept of generic export catalogues. This structure materializes self-organization, cross-sector integration, and stimulates products and services use values innovation.

Sustainability

Only a multilevel actor oriented approach leads to sustainable export growth and to the solution of the structural problems on Food, Water and Care in the developing countries. The cubic innovation framework evolved into an *informal innovation vocabulary* evoking and supporting a well-structured and systemic dialog between presently isolated social systems. To go global and take the lead, the Dutch Institute of standardisation (NEN) has prepared a working paper covering the formalization of the innovation framework at national level (extension of the Dutch NEN 6070) as well as internationally (WHO-standards for the improvement of the functioning of people).

To further support this trans-disciplinary development, an Innovation Research Program proposal has been designed in June 2011 during a Sino-Dutch workshop, collecting input from several Dutch and Chinese Universities and the Education Bureau of Hebei, the Sister-Province of the Dutch Zuid-Holland Province.



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Figure 1: Food and water social system innovation, based on our multilevel actor approach.

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