ABSTRACT
This article examines a systemic innovation model into which the relational approach of actor-network theory (ANT) has been incorporated. The article examines what the relational approach can contribute to the conceptualization of services and to the co-development and co-design activities of them. The article operates in the context of public welfare and health services, but its analysis might be applied in any other sector and with any other object of development as well. The article presents the systemic innovation model developed in a national Innovivillage project in 2009-2013 in Finland. Further, the article studies how the model has been translated into practice in the design activities of a strategic development program of social and health sector run by the Ministry of Social Affairs and Health, Finland. In the discussion analytical and practical challenges of the model are specified and its further development is discussed.

Keywords: Co-Design, Relational Ontology, Socio-Materiality, Systemic Innovation Model, Web-Based Development Environment

INTRODUCTION
The new innovation approach which emphasizes co-creation, co-development and co-design of products and services as well as open and non-linear innovation process has not only gained attention among innovation researchers or within private sector innovation activities, but also gradually within public sector development activities (Parida et al., 2012; Bason, 2010; Chesbrough, Vanhaverbe & West, 2006; Chesbrough, 2003; Kirschbaum, 2005; Gassmann & Enkel, 2004). Within the approach, the use of various service design methods (Sanders & Stappers, 2008; Yu & Sangiorgi, 2014) and open development platforms (Boudreau, 2007; Sawhney, Verona & Prandelli, 2005) aims at enabling the participation of customers and other stakeholders in innovation activities. The ultimate goal of these efforts is to produce products and services which could in a better way answer the needs of customers and other stakeholders.

This new approach is an obvious step forward in innovation practice, but its real success will be seen only in the longer run. From the public service innovation perspective, there are...
some evident challenges in the approach, both from the research and practice perspective. The bulk of the literature is devoted to large scale firms and the majority of the research is typically on technology firms (Chesbrough, 2005). Research methodology is mainly quantitative and it is based on archetypes and classifications of different kinds of open innovation activities. What seems to be needed in the approach is a deeper analysis on the nature of objects of development and of innovation activities that may help to elaborate the approach and to give some resources for concrete innovation practice.

This article examines what kinds of resources actor-network theory (ANT) can offer to the new approach. This is made by presenting and discussing how some of the core ideas of ANT have been incorporated into an innovation model and how the model has been translated into everyday public sector innovation practice in Finland. During the recent decades, ANT-oriented research has been focusing on the co-production activities of technology and context or science and society (see Habers 2005) and it has evident similarities with the new co-creation approach. The downside of this is that the aims of ANT have been mainly theoretical and academic. This article illustrates how the relational approach of ANT can be applied in the concrete innovation activities.

This article operates in the context of public welfare and health services, but its analysis might be applied in any other sector and with any other object of development as well. First, it conceptualizes welfare and health services as collaborative and socio-material practices which are constituted by heterogeneous elements, such as human actors, their tasks, resources (tools, artefacts, money…), rules and principles, laws and statutes. Second, the article studies what ANT might have to offer to the co-development and co-design activities of welfare and health services. This is made by presenting a systemic innovation model which has been developed by utilizing some of the core ideas of ANT. The model consists of three iterative and mutually constitutive sections, Stimulate, Incubate and Enact, which should be (co-)performed to achieve successful solutions and sustainable change in a local site. Third, the article studies how the model has been translated into practice by illustrating the concrete co-design activities of services where an open web-based development environment is utilized. The environment has been developed on the basis of the systemic model. The study material is collected from the workshops and their design activities of a National Development Programme for Social and Health Care. The programme is a strategic development program run by the Ministry of Social Affairs and Health, Finland. It is the main programme of the ministry for managing and reforming the national social and health policy and services. In the discussion analytical and practical challenges of the model are specified and further development of the model is discussed.

SERVICES AS SOCIO-MATERIAL PRACTICES

In the mainstream research and development activity, welfare and health services have been traditionally conceptualized as transferable interventions where the client/patient is an object of action. The traditional model is based on a linear, one-directional conception of causality. It assumes a causal order between variables: an independent variable – a service – has ‘effects’ (impact) on clients/patients. On this basis, services are evaluated as more or less effective (see Koivisto et al., 2010).

The presumptions of this mainstream paradigm can be characterized by a model that Latour (1986, 1987) referred to in the 1980’s as a diffusion model (see also Kristensen et al., 2001; Kristensen & Sigmund, 2008). It supposes that a service has an inner causal power, a kind of ‘inertia’ that can resolve the health or welfare problems of patients/clients. According to the
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