

New meanings of work in a digital printing network

Objectives Digital printing technology changes work in the textile-, clothing- and interior industries and opens up the potential for new network formation among the firms and their clientele, research institutes and trade organizations. The promises of digitalization lie in sustainable development, local production, consumer involvement, and networking. Simultaneously, research has, from many angles, questioned the relationship between consumption and sustainability calling for systemic and global approaches. This presentation discusses the possibilities to combine learning research and design research with the development of new business models and the design of product and online service concepts based on digital printing technology (Paju, 2014). These are the starting points of the project DigiPrintNetwork (Tekes 2015-2017) coordinated by the Helsinki Metropolia University of Applied Sciences. The research interest is on the emerging ecosystem that the digital printing network creates for its business model. The ecosystem comprises of the members of the network – the design entrepreneurs, materials producers, digital printing firms, and the administrators and developers of online service – the customers/consumers, interest groups such as trade organizations, universities, civic organizations and leisure activities. Research questions of the project include: How do the values of the consumer network and those of the entrepreneurship network meet? What characterizes interaction between these networks? How are the business models renewed and learned in intensified networking? How does a firm change its logic of activity and learn when becoming a part of a larger network? What characterizes the ecosystem created by the network to implement the business model? In the presentation we particularly discuss the inter-disciplinary theoretical approach of studying new meanings of work in a digital printing network.

Methods Research of the entrepreneur network focuses on the developmental dynamics of activity and emerging ecosystem on the way to create a new business model and production concept based on digital printing. Drawing on the cultural-historical activity theory the object-oriented learning by networks (Toiviainen, 2003; 2007) is applied to analyze collaborative challenges and innovations. Other conceptual notions applied are the multi-level expansive learning, the tensions of production and product concepts, and the dynamic field of the developmental tensions of a network. These will be specified and further developed in the context of digital printing network. The data gathered during the project may be used in learning interventions as a mirror material for enabling the network partners to reflect on and evaluate joint goals and achievements. It is a methodological challenge to follow the activities and gather data in real time. Partner networks have generally been analyzed retrospectively when the learning outcomes already are known. The methodological interest concerns advancing network research on a developmental rather than behavioral basis. Research questions of this part of the project include: How do the network actors understand and conceptualize the new digitally mediated objects of business activity? What are the learning-critical interfaces of the emerging actor network and ecosystem? What kinds of tools and work environments are developed, experimented with and implemented for mastering new objects and transcending the interfaces?

(Methods, cont.) Value creation and the revenue logic in online service are analyzed from the customer or consumer perspective (Niinimäki, 2011). Research draws on the knowledge created in the previous project concerning the service concepts for digital textile printing. Methods comprise consumer surveys, lead user focus group interviews, and the network stakeholder interviews. Among the stakeholders are the designers who offer their surface design and products to customers on new revenue logic. New value creation based on sustainability includes co-designing by means of which the customer may participate in modifying the print design. How does digital technology mediate the consumer and designer perspectives in online network-based activity? What are the conditions for the customer understanding by designers and the meaningfulness of the products for customer-consumers? How does the customer's value or experience contribute to the value creation in the stakeholder network? How do the roles of the designer, producer and consumer change in the digitalization of work?

Conclusion The DigiPrintNetwork research aims to investigate the new meanings of work related to digitalization and intensified networking. These transformations include potential to new business and production concepts. The new meanings of work bring learning challenges both to individual entrepreneurs and to the collective network of multiple stakeholders. In addition, consumer research is needed to support the change and create new consumer involvement in digitalized product and service provision.

References

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