

Making sense of changing work by exploring the object of work

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Abstract. We present a case of a large expert organization with several organizational and technical changes and investigate how these changes affected daily work of advisors. We focus on the systemic and expansive features of the changes, using activity theoretical approach in the analysis. The case proves the systemic nature of change: the organization-level changes radically changed the object of work of the advisors, and the single changes were in dynamic relation to each other. The collective conceptualizing and sense-making of the changing object opened up expansive ideas to develop the future activity.

Keywords. activity theory, organizational change, expansive development, object of work

Introduction

Today, organizations are undergoing a continuous process of changes. We present a case of Forestry Centre, a large expert organization that was going through several organizational and technical changes. In this empirical paper we investigate how these organization-level changes affected daily work. We apply the activity theoretical approach and developmental work research to analyse the changes in work, and focus on the systemic and expansive features of the changes.

1. Object of work as a key to understanding changing work

The core of the Activity Theory and Developmental Work Research is the idea of object-driven activity (Engeström 1987, 2000). The object gives meaning by forming a durable and collective motive for the work activity, and connects the multiple goals and actions of individuals and groups into a coherent whole. The object of work thus helps us focus on and prioritize the shorter-term goals and actions relevant to the ultimate outcome of the work activity.

The variety of individual motives and capabilities attached to the object makes the collective conceptualizing and sense-making of the changing object a key challenge in organizational changes (Miettinen 2005). The historically evolving and, at times, more radically transforming object is a crucial driver of the development of the work activity. The systemic model of the activity (Engeström, 1987, see Fig.1) offers an analytical tool to investigate changing work. The tools, rules, community and division of labour should support and adapt to the evolving object. Considering the dialectical nature of this development, changes in the other elements (or mediators) of the activity system (e.g. introducing new IT tools) may also induce a process of transformation in the object and the entire activity system.

Changes in the activity system create inner contradictions within and among its elements and its relation to other activities (Virkkunen, Newnham 2013). Contradictions are historically accumulated dynamic tensions in the activity system that manifest themselves through disturbances, ruptures, conflicts or innovations in daily work processes (Engeström 2000). Solving these through collective re-conceptualization of the

object and the systemic structure can lead to expansive development of the activity system.

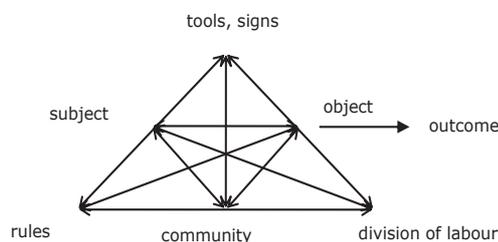


Figure 1. Model of the activity system (Engeström 1987)

An expansive change of the object means a qualitative change, in contrast to a mere quantitative extension or increase. Engeström (2001), Hasu (2000) and Engeström et al. (2003) distinguish four dimensions of potential expansion: the social-spatial, the anticipatory-temporal, the moral-ideological and the systemic-developmental dimensions. The social-spatial dimension includes expanding the activity by adding actors to the system, as well as extending the physical locations and virtual connections needed in the activity. Moreover, Hasu (2000) adds new artefacts and systems as forms or indicators of expansion. The temporal dimension encompasses both the past and the future, discrete and continual features of time spans attached to the object. The moral-ideological dimension deals with the reconsideration of power relations. The systemic-developmental dimension connects individual everyday actions to the collective and historical transformations of the activity, that is, the actors see their actions as more widely spanned, contributing not only to the present situation but also aiming to develop future activity.

2. Change workshop as a space to explore the object

A Change workshop (CW) is a formative intervention method and toolkit that incorporates activity theoretical ideas of the investigation of changing work, and supports expansive development. It is a condensed application of the Change Laboratory® method (Virkkunen, Newnham 2013).

The theory of expansive learning (Engeström 1987) guides the planning of the CW process. The object of learning is the changing activity system. The work community analyses the disturbances and anomalies of everyday work as well as the historical roots of the activity, thus building a shared view of the need state of the activity. Analytically questioning the old activity and its contradictions gives material for expansive solutions in the modelling of the new activity. In generating the new activity, the object of work is reformulated, and new concepts, tools, rules, forms of collaboration and divisions of labour are developed to support the new object. Examining and experimenting with the model may, for example, take the form of using new tools or a new division of labour in actual work situations. The learning process ends with evaluating and consolidating the results. The interventions built to provoke learning in the CW are based on the idea of double stimulation (Vygotsky 1978). The concrete case material from daily work situations (first stimulus; e.g. disturbances) is re-interpreted using theoretical models (second stimulus; e.g. activity system) to generate qualitatively new solutions to the problems.

Following Virkkunen and Schaupp's (2011) description of learning activity, the aim during the CW process is to analyse the discrete tasks, problems and actions and to

connect them to the systemic idea of activity, to transform them into contradictions demanding creative solutions, and as a result, to depict a qualitatively new activity structure that will resolve the contradictions.

3. Case: Exploring Changes in the Finnish Forestry Centre

4.1 Finnish Forestry Centre and organization-level changes

The Finnish Forestry Centre (FFC) was formed in 2012 when 13 independent regional centres merged into a national organization. It is a semi-public organization operating under the guidance of the Ministry of Agriculture and Forestry, with the task of enforcing the Forest Act and promoting sustainable forestry and forest-based livelihoods.

In conjunction with the merger, the organization was divided into public unit with over 650 employees, and a business unit with over 250 employees. The public unit was further organized into five organization-wide service processes: Forest Data Services, Promotion Services, Finance and Auditing Services, Customer Services and Administrative Services (denoted in this paper as Services). The technological changes included new advanced technology for forest inventory (airborne laser scanning with IT-based tools) as well as other IT systems. A new web-service for customers was also introduced.

4.2 Change workshop in the FFC

This project was conducted in the Public Services unit. A CW was arranged to support the organizational changes and the formation of new tasks. On the basis of the preliminary study, the focus of the CW was the forest adviser's work in Forest Data Services. The CW had 14 participants, representing all five Services and three different regions, in order to also perceive the relationships and co-operation needs among them. The CW consisted of five sessions with the following themes: 1) past and present work activity, shared understanding of the recent changes; 2) disturbances as possible manifestations of contradictions of the work activity; 3) organization-level changes and their consequences for work in different Services, direction of the organization in the near future; 4) developmental experiments to test the ideas of the emerging, qualitatively new work activity; and 5) evaluation of the experiments and the overall CW process.

4. Data and methods

We analysed how the organization-level changes affected the forest advisors' daily work: how the activity system was changing. We used the transcripts and memos of the five workshop sessions as data, especially the first three workshops' group work summaries and discussions. We focused on episodes of discussion that manifested changes in the activity system. We then searched for expressions regarding a) the of the object or other elements of the activity; b) the relations of the elements and of the processes; c) the ways of collaborating; d) the capabilities and skills required, e) the outcomes of the activity and f) customers (following Miettinen 2005 p. 64 as aspects of negotiation of the object).

5. Results: Forest Advisors' changing object and work activity

The organization-level changes, namely the merging of the regional units and the formation of the organization-wide service process, the division of the organization into public and business units, the new inventory technology and related IT systems as well as other new IT systems, and the launching of the web service for forest owners, had radical

consequences for forest advisors' everyday work. Examples of organization-level changes and the related changes in forest advisors' work, as well as the theoretical interpretation using the activity system model, are summarized in Table 1.

Table 1. Organization-level changes and the related changes in forest advisors' work.

| Organization-level change | Examples of experienced changes in work | Change of object | Change in work activity |
|---|---|--|--|
| New technology | ".. collecting forest data has undergone a major change.. from extensive field work to remote measurement.. and a new IT system to manage the data.." " importance of office work, all the information produced and refined, is essential for success..." | field work, data collecting > office work and forest data maintenance | New tools: airborne laser scanning, IT systems, web service |
| Web service metsään.fi | "..direct contact with forest owners has diminished.." ".. from face-to-face to the phone.." ".. now metsään.fi [web]" | New object: web service, from "known" to "unknown" customers | New tools resulted in technology-mediated relationships |
| Division into public and private services | "..forest planning was sifted away as the division was made.." "..before forest plans, now up-to-date forest data in the systems" ".. must be careful what you dare to talk about, data protection issues.." "..you must introduce different service producers, be neutral.." | forest plans > up-to-date data in the systems | New division of work New community: different network partners, incl. business unit New rules: neutral, transparent relationships |
| Merger of regional units | "..the customer will be served by the organization as a whole, instead of separately by each Service.." "customer information must be passed on to other people.. must be more documented.. in the system, not on your own computer.." "boundaries must be low, focus on what is important in work.." ".. only one [advisor] visits the forest, collects all the information, stores it in the Aarni system, everyone can use the data.." "..regional co-operation in backlog situations is increasing.." | New object: customer information Forest owners as shared customers New systems as shared objects and tools | New tools and practices required: customer management system New division of work: collaboration across regional and process borders New rules: only once in the forest; help across borders; shared customers |

The technological changes, with the introduction of new tools, started before the organizational changes, forming the first driver of change. Due to the advanced technology taken into use in the inventory work, the amount of field measurements carried out in the forest was diminishing. Airborne laser scanning and IT systems allowed remote measurements, and processing and refining the inventory data using IT systems in the office was now the main task of the forest advisors. The outcomes of the work had also changed. Previously the forest advisors processed inventory data they mainly collected themselves to, for example, serve individual forest owners through personal advice and forest plans. Now they refined the data produced by technological devices for the new web service for customers (metsään.fi) and other IT systems, to also be used by other forest advisors and Services. Thus data maintenance now formed the main object of their work.

The division into public and business units caused new divisions of work. The forest advisors' previous task of making forest plans was sifted into the business unit, which further emphasized forest data maintenance as the new object of the forest advisers. Along with taking the web service into use, the relationship with main customers, the forest

owners, changed radically. The previous direct, face-to-face relations with specific customers in one's own region were transformed into technology-mediated contacts with numerous 'unknown' customers around the country via phone, email and the internet at any time. This further required more systematic management of customer information: instead of each having the information of their own customers, forest advisors now needed to use the shared customer management system and keep it up to date. Thus customer information was both the new object (producing updates) and tool (used for contacts) of the forest advisors. It was also stated that forest owners should be seen more as shared customers rather than be treated separately by each Service.

The division into public and business units also changed the relationships between previous colleagues. While the other Services and regional units were seen as collaborators and inner customers, the new business unit was seen more as a network partner or a customer that must be treated according to the same, neutral and transparent procedures as any other service producer.

The transformation into a centre with nation-wide Services provoked wishes for more co-operation between the Services as well as across the regions. The Services shared several tools and objects of work, for example, the customer management system, the forest data system and the metsään.fi web service. The different Services produced data for the systems, typically used as a tool in the other Services. Marketing the web service was a shared task. Another shared task was based on rationalizing time-consuming field work, which was still needed for certain inventory and auditing tasks. Any field visit should also combine the tasks of other Services. Finally, help in backlog situations would have to be provided across the Services and regions. All this co-operation would need more systematic planning and tools, and thus an annual clock (annual schedules) and a new structure of areal teams were suggested as developmental experiments.

All in all, these changes also required new cultural norms and rules, emphasizing collective responsibility for shared customers and IT systems. For example, instead of being mainly responsible for inventory or customer data that they collected and used themselves, each person was now responsible for providing all others with high quality data used in several IT systems and for several purposes. From the customers' perspective, everyone was now responsible for data collected by others as well, thus each employee represented the organization rather than themselves individually.

6. Discussion: Systemic and expansive change

Collective conceptualizing and sense-making of the changing object is a key challenge in organizational changes, in order to coherently develop the collective activity (Miettinen 2005). In this case, representatives of different Services gathered together to investigate the forest advisors' changing object and work.

The case proves the systemic nature of change. First, the organization-level changes had radical consequences for forest advisors' everyday work. Previously they had produced and processed inventory data, serving individual forest owners through personal advice and forest plans. Now, their object of work included managing the inventory data, marketing the web service, updating data for the customer management system and providing help for other Services and regions. The ideas of an areal team and annual clock to enhance collaboration, on the other hand, represent development of the structures of the organization from the viewpoint of everyday work. Second, the single changes were in dynamic relation to each other, causing further pressures and opportunities for each other, and the need to develop the entire system of activity, as described above (Section 6). Third, the collective exploration of the object also revealed important contradictions

behind daily disturbances. For example, the marketing of the web service was a new task for which resources and the division of work was still unclear, causing backlog situations and feelings of stress. The participants of the CW had several ideas for further developing the activity and solving the contradictions.

These changes of the object and the activity represent socio-spatial, temporal, moral-ideological and systemic-developmental expansions. The organizational and technical changes, resulting in new divisions of work and new tools expand the object in the socio-spatial dimension. The shared tasks of data management, customer service, marketing and collaboration contribute to the collective aspects of the object of the entire organization.

The changes also expanded the idea of the customer and required a new way of understanding the customer. However, none of the writers Engeström 2000, Hasu 2001, or Engeström et al. 2003 explicitly comment on the customer as an aspect or source of expansion in any of the dimensions.

Examples of moral-ideological expansion in this case include collective responsibility for providing high quality data used in several systems and for shared customers. In addition, the transparency and neutrality in relation to service producers receive more emphasis than before. The writers (mentioned) outline the moral-ideological dimension as concerning responsibilities and decision power. The above viewpoints widen the dimension to also cover other norms and rules in addition to responsibilities and decisions.

The annual clock is an effort to master the temporal aspects of the object and work. The work of forest advisors has different focuses and the main tasks depend on the season. Weather conditions and customer wishes add to short-term planning. The study of Engeström et al. (2003) also found similar types of temporal expansions and means with which to master long-term planning and quick reactions to changes. Temporal expansion is also evident in customer relationships: instead of customer service being bound by time and immediate contacts, web services and email allow service at any time and anywhere.

Ideating and experimenting with new tools and collaborative work practices also included taking on the new role of a developer. This represents the dimension of systemic-developmental expansion. Everyday actions are thus valued as sources of continual transformation of the activity (Engeström et al. 2003).

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