

STABILIZING NEW PRACTICES: A CASE STUDY OF INNOVATION AND NETWORKED LEARNING

Thomas Hoholm¹

Department of Innovation and Economic Organization
Norwegian School of Management, Norway

Bjørn Erik Mørk

The Interventional Centre
Rikshospitalet University Hospital, University of Oslo, Norway

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ABSTRACT

This article seeks to contribute to our understanding of movement of practice. It does so by drawing on a longitudinal study from the food sector. We take a practice-based approach to analyse real-time processes of innovating across practices, organisations, and industries. The paper seeks to contribute the following three ways: Firstly, it describes the process of moving, merging, and stabilizing industrial practices in the food sector. Secondly, it shows how movement and combination of practices requires dynamic processes of stabilisation of new practices to make them movable, while keeping other aspects open to enable alignment with new actors. This may be described as networked learning aiming to establish new patterns of interacting practices between suppliers, producers, and users.

Key words: practice, innovation, stabilization, networked learning

¹ Corresponding author: Thomas Hoholm, BI Norwegian School of Management, Nydalsveien 37, 0484 Oslo, Norway, cell +4746410619, e-mail: thomas.hoholm@bi.no

1. INTRODUCTION

Practice-based studies have underscored how practices are historically, culturally and socially situated (Gherardi, 2000; 2001; 2006; Nicolini et al., 2003; Orlikowski, 2002; Gherardi and Nicolini, 2002), making movement of practice challenging. Many studies of innovation have been dominated by assumptions privileging order and stability, whereas we argue for using a “process perspective” (Tsoukas and Chia 2002; Van de Ven and Poole 2005; Hernes, 2008), where social stability is seen as a dynamic process, especially in innovation projects. This calls for, as was emphasised by Tsoukas and Chia (2002), searching for the micro-processes that make change constitutive of reality.

Practitioners commonly seek to transfer, expand, or distribute practice from one setting to another. Orlikowski argues that “a view of knowing as enacted in practice does not view competence as something to be ‘transferred’” (2002:253), and practices will never be “discrete objects to be exchanged or stable processes to be packaged and transported to other domains” (2002:271). So, while acknowledging that transfer of practice is difficult, still practitioners commonly seek to transfer their practices, to exploit existing knowledge in new settings, and to combine practices during innovation. Hence, we draw upon a longitudinal case study of product development in the food industry to enhance our understanding of how we can theorise this phenomenon.

Our analysis indicates that what to stabilise and what to keep open changed throughout the project via dynamic processes of interaction between practitioners and their environments. Stabilisation was in our study related to at least three aspects: First, stabilisation of the premises for collaboration between different actors while being open for possible change if necessary. Second, stabilisation of production practice, while letting the product in itself be open for negotiations between the different actors. Third, a temporary stabilisation of the product in the meeting with possible users, while recognising that this may challenge and de-stabilize both the premises for collaboration and the production practices.

The remainder of this article is organised as follows: We will start by reviewing some studies that add to our understanding of stabilisation of practice and networked learning. The next section describes how to study practice, and we will argue for using approaches sensitive to materiality, contingency, relationality and temporality. We will then give our account of how an innovation project from the food industry evolved over time, and look at different aspects of stabilisation. In the discussion we will relate our findings to other studies to highlight contributions. Finally, we will consider some implications of this study.

2. THEORISING STABILISING NEW PRACTICES

We position our paper within practice-based studies in general (Gherardi and Nicolini, 2002; Nicolini et al., 2003; Nicolini, 2007), and within sociology of translation in particular (Nicolini, 2009; Swan et al., 2002; Latour, 1988). This enables us to move from a ‘sociology of nouns’ to a ‘sociology of verbs’ (Law, 1994), thereby abandoning the term ‘knowledge’ understood as context-free pieces of information that can easily be transferred across settings (Gherardi, 2000; 2006). In contrast practice is here seen as historically, culturally and socially situated, and knowing and doing as interconnected (Nicolini et al., 2003). By practice we mean, like Orlikowski (2002:256) “recurrent, materially bounded and situated action engaged in by members of a community”.

Many previous studies have been privileging order and stability, while studies seeing social and material stability as a dynamic process are fewer (Van de Ven and Poole, 2005). This calls for studying the micro-processes which make change constitutive of reality (Tsoukas and Chia, 2002). Van de Ven et al. (1999) and Newell et al. (2006) underscore that innovation entails complex, non-linear and interactive processes. Dopson (2005:1132) argues that “[m]ethods and frameworks for examining innovation over time are far less developed than those used by research projects conducting variants of the stage model research”.

Furthermore, studies of innovation need to capture “the interweaving of the actions and intentions of large numbers of people who are bound together in complex webs of interdependencies, an essential element of which is unstable balances of power” (Dopson, 2005:1126). Similarly, Nicolini et al. (2003:28) argue that a practice-lens captures central aspects of organizing and innovating:

Because practices do not respect boundaries, because they connect things, people, and events that are distant and only partially congruent, because they allow the coexistence of old and new, because they are able to deal with change and disorder while explaining persistence and order.

This approach may however be better for explaining reproduction and production of new local practice than to explain how movement happens from one location to another. More recent research (e.g. Nicolini, 2009) therefore underscores how sociology of translation can be relevant for understanding innovation.

Orlikowski (2002:271) underscores that practices “are by definition, situationally constituted. They are not discrete objects to be exchanged or stable processes to be packaged and transported to other domains”, rather that it is “a process of helping others develop the ability to enact – in a variety of contexts and conditions – the knowing in practice”. Competence generation may be seen to be a process of developing people’s capacity to enact what we may term “useful practices” – with usefulness seen to be a necessarily contextual and provisional aspect of situated organizational activity (253).

Elsewhere (Mørk et al., 2006) we have argued that one way to conceptualise the development and movement of practice is to distinguish between (1) the practices associated with constructing a technology and ascertaining technical feasibility, (2) the enacted nature of the work, how certain configurations of interests is significantly dependent on circumstantial factors, and shaped by the need to ensure usability, and (3) the work to package the innovation for movement to users. In this paper we want to investigate the dilemma of when and how to stabilize associations, and when and how to keep associations open.

Realised innovations can be seen as associations, or assemblages of different elements, human and non-human, shaping each other (Law, 1994). The surrounding networks are not only social, their very existence are constituted with numerous technical and other elements. To make such heterogeneous networks hold together, to stabilize them, means hard work. Another aspect of the heterogeneity of innovation, as told by Akrich (1992), is the process of delegating responsibilities and competencies to technologies and humans in a process of trying to predict, define, and negotiate with the (future) users. If the social is heterogeneous, it is also contingent on the particular situation (Law, 1994).

Bijker and Law (1992:24) emphasise interpretative flexibility; how different actors might see an object in different ways, or even as different things, often in relation to different contexts. Due to such opportunities for different actors to identify and associate with the object, the process may be moved forward, making more actors engage with it. But sometimes it also threatens to ruin the whole project, as un-combinable versions of the object might evolve. The innovation is never given at the outset; it is likely to change through its interaction process with involved actors and elements (Mørk et al., 2006).

As emphasised by Tuomi (2002), Dopson (2005) and Nicolini (2009), innovation is increasingly becoming a networked activity, making traditional conceptions of organization less useful. Knight (2002) suggests the term ‘network learning’ to denote learning *by* networks, observed as changes in patterns of interaction, processes, structures and shared narratives. Within an actor-network approach, ‘network ordering’ is understood as an “uncertain verb”, about “overcoming resistance” (Law 1992). Araujo (1998) advocates a network view of organisation, defined as “a set of interlocking and shifting relations with porous and fluid boundaries” (ibid: 317), where socio-technical networks is the unit of analysis. Araujo situates knowing and learning “in heterogeneous networks of relationships between the social and the material world” (Araujo 1998:317).

Gherardi and Nicolini (2002) position learning in a ‘constellation of interconnected practices’, aiming to describe learning as not only to “reach understanding and/or to produce collective action”, but also as a process of comparison between the participants’ perspectives (Gherardi & Nicolini 2002:420). Through our case study we want to shed light on *how* such processes of stabilizing new networked practices happen.

This review has presented studies that add to our understanding of movement of practice. To date most practice-based studies have focused on how situated practices are produced and reproduced locally. Meanwhile, and following Nicolini (2009) and others, we believe that sociology of translation offers us an interesting framework for understanding movement and stabilization of practice. In the following we will therefore apply this framework on our case.

3. METHODOLOGY

Taking a practice-based approach has both epistemological and ontological implications (Nicolini, 2006; Gherardi, 2006). We will argue that studying how processes and practices evolve over time calls for an exploratory and interpretative approach. Like Kerosou (2006) and Nicolini (2006) we wanted to adopt an approach that allowed us to ‘follow the practice’ and in particular practices ‘in the making’. The results presented here are part of a larger study of innovation from the food industry. Some of the results have been presented elsewhere, but then with a different focus (Hoholm and Huse, 2008; Hoholm and Mørk, 2008; Hoholm, 2007).

Case studies are well suited for studying real-time processes that are not easily distinguishable from their context (Yin, 1994). The case was selected because it included relatively radical innovation across practices, organizations, and industries, thereby displaying more openly the contingencies and uncertainties of such processes. We also did sampling within the case as many decisions had to be “made about where to observe and when, who to talk to and what to ask, as well as about what to record and

why” (Hammersley and Atkinson, 2003:45; Miles and Huberman, 1994). In contrast to most other studies of innovation that have focused on single episodes of the process and/or retrospective accounts (Akrich et al., 2002), we have investigated the project as it happened from the idea stage until it was moved elsewhere.

From 2004-2007 the first author followed the organisation as a PhD student. Participant observation was mainly done over a 6 month period, partly in headquarter offices and partly in R&D facilities. In addition, the first author had five field trips of two days or more to other locations together with project managers, such as food fairs and production facilities, and kept regularly contact with key informants before and after the field study. In total 33 semi-structured interviews were conducted with members of all groups (repeatedly with some ‘core’ participants). The interviews lasted on average 60 minutes, and they focused on innovation practice in specific projects, all related to cross-domain innovation. The quoted informants appear with a combination of professional background, number and affiliation. All interviews were fully transcribed, and coded organised into matrixes to search for ‘patterns, contrasts and paradoxes’ (Coffey and Atkinson, 1996). We also examined internal documents and publications.

Our approach was inspired by grounded theory (Glaser and Strauss, 1967), nevertheless significantly shaped through the interplay between theory and the research material. Our research process can be described as a process of “abduction” (Alvesson and Skjöldberg, 1994; Coffey and Atkinson, 1996) where we started with an empirical phenomenon and then moved back and forth iteratively between theory and interpreting the material. Our current aim (to understand movement of practice) was not initially clearly formulated. During the writing, discussion, review and rewriting process this focus became clearer, and accordingly the sense we made of the research material changed. We have shared our findings and interpretations with our informants, and these discussions sharpened our interpretations. This practice resonates well with Golden-Biddle and Locke (2005) and Orlikowski (2002). During the analysis it was also important to pay special attention to the problem of anecdotalism (Silverman, 2005) avoiding that the main findings are just a few well chosen examples rather than based on critical investigation.

4. AN ACCOUNT OF THE DEVELOPMENT AND MOVEMENT OF PRACTICES

Our story starts with the incidental meeting between two partly successful attempts at creating new practices. A fish farm had developed and patented new practices for slaughtering and processing ‘prerigor’ salmon together with scientists from an agricultural university, with impressive results on the texture, colour, and taste. But the fish farm failed to connect their new practice to users. Their main distributor was not interested in treating the prerigor salmon differently from regular salmon, and hence the fish farm could not get returns on their investments. An agro-food cooperative had developed visionary plans for innovation based on biomarine resources. The aim was to create economic value by utilizing their agricultural knowledge for product development, production, and marketing. While having lots of expertise in their fields, agri-co had so far failed in obtaining and controlling the quality of biomarine raw materials. They had been involved in several partnerships with suppliers of fish, but these relations had invariably broken down because the supplier had not been able – or willing – to change their practices according to agri-co’s suggestions.

In many respects the two main actors in this story look similar. Production halls full of shiny steel-tubes in the roof and along the walls, clean floors with machines standing

ready for work everywhere, people in white coats and clogs, and strictly forbidden access for outsiders without permission and proper uniform. The only visible difference for the ignorant observer is the materials they work with; fish versus milk. The management offices at first sight look more different. But this is more a question of size than of anything else. While the fish processor has relatively small and modest offices with few people, located in a rural village along the coast, the dairy cooperative is located in spacious premises in the capitol, with lots of busy people working in modern open-office landscapes. Yet, they share some elements; PCs, telephones, desks, white collar workers and managers, meeting rooms, coffee machines, etc. Moreover, they are dealing with similar objects; transforming various raw materials into human food. But yet the differences between these companies and industries² are profound. Their conceptions of business, whether related to raw material access, production, knowledge, marketing, or other, have very few overlaps – if any. Some of these differences are perhaps not obvious for the public eye, as both fish and agro-foods are often found in the same supermarkets, and they are often used in combination in private and professional kitchens.

But through observing and tracing attempts at combining practices from these industries the ‘black box’ opens up, revealing how practices have evolved isolated from each other for decades. The fish industry has until recently been strictly dependent on catch; the availability of raw materials has been limited by factors such as the weather, seasons, and fishing quotas. Accordingly, the trade of fish has been organized in auction-like markets, with fluctuating prices and very limited product development and processing. Recently, some fish species have been domesticated and large parts of the industry is therefore moving from catch based practices towards cultivation. One could expect that this would lead the industry towards industrializing their production and marketing practices, but this had not been the case so far. The agro-food industry has always been based on cultivation; typically farmers have organized cooperatives to handle logistics, processing, and distribution on behalf of the owners. This has produced large-scale economy, and professionalization and standardization of production, product development, and marketing with close relations to research institutions on R&D and retailers on distribution.

So, here we have two knowledgeable actors situated within particular networks related to research, production, distribution, and marketing. Representatives for these two actors met incidentally, when the agro-food cooperative’s R&D department hired a group of scientists from the agricultural university to strengthen their knowledge of fish. These were the scientists that had helped the fish farm develop the prerigor technology, and when they experienced the problem of getting high quality raw materials in agri-co they introduced the fish farm and the agro-food cooperative to each other. Having failed with stabilizing their novel practices on their own, both parties wanted to join forces. The fish farm was ready to move their practice towards the agro-food industry. And the agro-food cooperative wanted to move their technical and economic practices towards the fish industry, arguing that the fish industry should learn from agri-co, and thereby create more economic and use value.

² We are talking here about these industries as they are practiced in Norway. Some of the same differences are found elsewhere, but such practices in other countries and regions have developed somewhat differently due to different food cultures, distribution systems, and industrial policies.

We will now turn to how stabilisation and networked learning are fundamental aspects when moving practice.

4.1 1st stabilization: premises for cooperation and alignment of interests

In this first instance of the relationship between the fish farm and agri-co, what was at stake? Firstly, the uncertainty regarding the use value of prerigor salmon in combination with agro-food practices. Second, the challenge of combining and aligning the different interests between the parties. The conceptions of the technologies and practices to be involved and the aims and shape of a partnership had to be negotiated, based on the *idea* of some innovative products of salmon, and the *hope* that a partnership could lead to synergies. This was not a case of developing common interests, rather of knowing about and aligning different interests, as in Gherardi & Nicolini's (2002). They needed to negotiate and stabilize common premises for transferring and developing practices through networked learning; to develop new patterns of interaction between previously unrelated actors and practices. In the initial stage, two different boundary objects played important roles. Firstly, the idea of – and the emerging technology for – fermenting salmon into a 'salmon salami', a project that had been going on for some time within agri-co's R&D department. Secondly, the ready developed pre-rigor technology for live-cooling salmon before slaughter, enabling to produce supreme quality salmon fillets, a project that the fish farm had spent several years and millions of NOK to realise. When a group of university researchers were hired by agri-co, they soon started testing the pre-rigor salmon in the recipe of the salmon salami, with surprisingly good results making both parties enthusiastic; the fish farm for being able to help out the big agro-food company, and agri-co for finding a raw material with potential far beyond their own invention.

Let us now dig into this first important part of movement of practice. The premises for cooperation between the fish farm and the agricultural cooperative needed to be stabilized, while keeping the practices and products of the cooperation relatively open. Agri-co had worked strategically to go from being a dairy cooperative to becoming a food corporation/cooperative: “[agri-co's] purpose is to be a central actor within food production in Norway and Scandinavia” (corporate director, agri-co), hence enabling the organization to start exploring potential projects outside their traditional area. They had also decided how to approach new business, but in practice they had been forced to reconsider this:

In contrast to milk, we will only be where we think we have the ability to contribute, and as close to the market as possible. But we have recognized that this is not possible, because as with milk, [fish] is equally fragile related to controlling the quality throughout the value chain. (corporate director, agri-co)

Surprising to agri-co, the adding of raw material control to the cooperation was indeed something where agri-co drew on their expertise, and it certainly brought synergies to the venture. The need for strict control on raw materials and production practices, and their unwillingness to compromise on nutritional standards, had made them acknowledge that they had to participate in more of the value chain.

When starting the dialogue and negotiations of a potential partnership, agri-co biomarine's director expressed some frustration about negotiating with such a different company:

It is undoubtedly a big challenge to work with a family-owned company, as they have so many other stakes in their business than just the company. It was a lot of arm-wrestling back and forth. As they grew trust in us, they were willing to go further with us, instead of going with others. (director, agri-co biomarine)

Therefore, he made strategic use of the top management of agri-co to tell about their values and intentions, and build trust on a personal level, before moving on to the formal parts of negotiating an agreement. He was clearly aware of how different the interests of these companies were:

They are more concerned with earning a monument at the town square, producing workplaces, and of long-term business, right, creating industrial business locally. But for us, this is just a means. (director, agri-co biomarine)

Different business logics, agri-co increasingly playing the game of an international corporation, while the fish farm was more concerned with their local value creation and reputation. Therefore, the building of trust and mutual knowing of each others' interests became important. In addition, the business logics of the companies produced differences needing to be bridged:

It's about building trust and acknowledge that it takes time. There is a different pulse in working with fresh fish than with milk, because they have produce exchange [auction] every Friday and so they get a kind of mercenary spirit, while we work on long-term year-long contracts. (CEO, agri-co)

Different time perspectives seems to be a major reason for the lack of industrialization of the fish industry and the privileged situation for agri-co related to long-term investments in knowledge and innovation. Moreover, the owners of the fish farm were somewhat risk averse as they had experienced failures in innovative ventures before, and they were to a larger extent "discussing their private economy" (agri-co's biomarine director). Still, the reason why the owners at this fish farm, in opposition to competitors, were interested in investing in product development was the conception that this could provide better prices on their fish. However, they had tried to exploit their existing distribution network for marketing the prerigor salmon, without much success:

Owner: We had a traditional sales apparatus for traditional actors, and they are not really interested in this kind of sales, because they are only concerned with quantities.

Researcher: And so there is not much for you to get out of your products there?

Owner: No, we have tried, and we have stopped trying, and this is why we went with agri-co on this, as we thought they would have better opportunities.

The owners were therefore open to the idea that their superior raw materials had better opportunities if distributed via channels outside the traditional fish industry. When they were approached by agri-co, the managing director of processing at the fish farm "were a bit flattered", finding it "very exciting" (managing director, fish farm processing). In other words, despite a good starting point for negotiating an agreement, it took time and effort to find ways to include and balance the interests of both parties:

We want of course to make the agreement as good as possible for us, and of course agri-co want the same for them. But we have agreed to establish a basis

for the joint venture that is viable. So that one not can sit on each side of that company and try to suck it empty, because then the cooperation will die. (managing director, fish farm)

They ended up with creating a joint venture, so that both parties should invest certain amounts of resources without being in position to unfair exploitation of the other. They thereby managed to stabilize a platform for collaboration where the outcome in terms of common practices and products was open and highly uncertain.

4.2 2nd stabilization: production practice

In the second stabilization³, the production practice was sought stabilized, while keeping the product open and flexible. But still, practice could be challenged by later negotiations on the product/use. In spite of the efforts to establish a balanced relationship, asymmetries of power came to the fore, although not without the ‘weaker’ part having opportunities to negotiate their practices and interests. Agri-co increasingly realised their need for imposing practices of industrial production and nutritional standards on their fish farm partner, moreover, to make them prioritize their raw materials for long term commitment to a single customer. There seemed to be few problems related to the prerigor technology in itself, as it was produced at the same facilities by the same people as before. It was the movement of ‘nutritional standards’, to the fish side and connecting it to their established practices that produced some challenges.

From agri-co’s point of view, their technical practices could easily be transferred:

These machines can with minor adjustments be used both on dairy products and on fish. But the raw material characteristics are different. We draw in expertise on this, and here we have some learning challenges, but we have a lot of transferrable competence and technology. (director of research, agri-co)

By reformulating their knowledge and technology in very general terms, they grew ambitions for utilizing their expertise in new settings. It was just a matter of ‘adjustments’, and some learning about new raw material characteristics. It appeared, however, that this (re-) formulation of agri-co’s knowledge had a history of conscious and collective reflection and reframing. It did also match suspiciously well with agri-co’s recent redefinition of itself from being a ‘dairy cooperative’ to becoming a ‘food corporation’, specializing in ‘cooled food products’. But, contrary to the director’s claim to transferability, this proved to entail a long process of trial and error learning, so additional experts had to be recruited:

You first have to know what you need before you can ask for it. In addition, people with different competencies always struggle with communicating. That is why I argue that it was crucial for us to have a person with the competence to bridge agri-co’s and the other working environments. (CEO, agri-co)

³ It must be noted that the three ‘stabilizations’ described in this paper were to a large extent overlapping in time. At the same time, each stabilization provided premises for the next, and they were partly handled by different people drawing on different practices, resources, and networks.

As Orlikowski (2002) emphasized, it is through practicing that you develop an understanding. Here this was done the hard way by the company's own people, and after a while also by recruiting university scientists to expand their expertise and their network related to the fish industry. We challenged a corporate director in agri-co on whether they not had put too high demands on their 'nutritional standards' in this project. He responded that this had been challenging, but that there was no room for compromise. Therefore, the production workers at the fish farm had to go through several rounds of training and of improving control routines on hygiene, cleaning, and bacteria testing. This was confirmed by the management at the fish farm:

Agri-co is very thorough, and they have sent people to us that have had a project going here in parallel with starting the production. And we brought in people knowing the machines and the equipment here in the starting phase. (managing director, fish farm)

Starting out with what was perceived as a 'good introduction', soon after, they still had some critical incidents, e.g. when a whole production batch had to be stopped and dumped. In this effort to combine and transfer knowledge between two industries, to agri-co's surprise, production routines and hygiene control became central topics:

Hygiene has perhaps been the most important issue. It has worked out because we have put such strict demands related to examination and control of the product. We also had an incident where we had to dump a whole batch, with a cost of 150.000NOK. It gave both us and them a shock, and then we worked closely on hygiene together. (project manager, agri-co R&D)

A combination of somewhat worn machines and of not having stabilized the new and stricter production and control routines led to unacceptable microbiological quality on the products. So, if the relationship between the fish farm and agri-co initially seemed symmetrical and balanced, in practice one of them had to learn more from the other:

Firstly we need to understand, we have worked in the fish world, and agri-co comes with their dairy world, and these two groups have to understand each other. This takes time. And we have spent an enormous amount of time on educational work. Training of the personnel, and turning the mindsets around on everyone. (managing director, fish farm)

Even though the fish farm director here spoke of the companies as equal, the changes and adaptations that he mentioned were almost entirely related to the new practices *at the fish farm*. The change of mindset, and intensive training of the production workers that he referred to included changes and improvements of routines, both at the fish farm, and related to some related actors:

We have changed many routines. For example, we have a company cleaning for us, and we have had to put in a lot of effort training them. First we had to train our own people in the cleaning after a day's work, and then we had to train the people that are cleaning to make things ready for the next day of production. (managing director, fish farm)

All in all, this became a thorough learning process, aiming to stabilize production practice at the fish farm on agri-co's terms. It was not entirely a one-way street, as agri-co had a hard time learning how to deal with the fish industry:

On some areas agri-co had to lower their demands to realistic levels, while on other areas we have had to acknowledge that the level of detail is far beyond what we have been used to. But when we decreased [bacteria counts] down to 300 [per gram], or below 1000, it was a quantum leap really. And we would neither have come up with the idea, nor been able to realize it without help from agri-co. (managing director, fish farm)

Agri-co had to compromise on some issues, particularly related to standards and costs of non-core technologies. But when it came to nutritional standards, mainly related to hygiene, agri-co was not willing to compromise at all. The fish farm was more or less forced to accept and to make the agricultural practices and standards work in this new setting. This did not only relate to social work practices, but also the technologies had to be changed:

Started with a 'salmon machine' with a stroke on 60cm. We broke down these dies both in length, width, and depth, with extra thick foil, to give our products a perfect shape. Since this pre-rigor product is malleable, it is stabilized in its thick shape, with the feeling of substance in the product, opposed to vacuuming post-rigor fillets, which are soft, they become totally flat, and then you don't get that experience of its exclusivity. (managing director, fish farm)

The adaptation of the packaging technology was made both to improve customer perception and to improve the quality, in this way trying to take the fish out of its traditional network of industrial and market practices. It is easy to overemphasize the learning going from agri-co to the fish farm, because the prerigor technology of the farm was already relatively stable before the project. Yet, it is difficult to think how agri-co could have succeeded alone:

They have added a lot of knowledge on what happens in a fish cage, what happens under stress, what happens during slaughter, and what happens towards the market. (project manager, agri-co R&D)

Still, the most challenging processes of what we have called the '2nd stabilization' was about stabilizing the new production practices and control routines, and adapting the technology accordingly. This was described as a training process by an agri-co representative, finding it hard to manage from a commercial perspective:

If we start a production of three to four tons, to test the capacity, what they are able to deliver, then it costs us half a million NOK if we are not able to sell it. First we produce 200 kilos, and then we produce 500. And then we came to 1000 kilos but they managed 800. Then I told them to double, 2000 kilos, and they managed 1700. They never make it, and part of the problem is that they don't get the raw materials. The fish farm's problem becomes our problem. (commercialization manager, agri-co)

Being responsible for marketing and sales, he found himself in the troublesome role of deciding on the quantity of training for the production personnel. He wanted to sell high quality products, hence wanting the personnel to practice as much as possible, but he was also personally responsible for selling the products, and was worried by the thought of a stock growing out of proportions. After all, at this point they did not have any fixed customer deals:

This is a bit turbulent, but I think it is just the way it is during negotiations. What has been very important for the progress is that [his managing director] has dealt with the negotiations, and then I work only with my things. If I had started arguing with them about money, this would have been ruined. I can not have an argument with them about a million or ten on Monday, and then ask their production unit to deliver a new test production to me on Tuesday. (commercialization manager, agri-co)

In this phase, the agri-co biomarine business unit's managing director took responsibility for all overarching negotiations, regarding overall strategy, partnership conditions, and investments. The R&D project manager took responsibility for following the production personnel on actual production practice. In this way turbulence could be reduced to a minimum during transfer of practice, handling complexity and friction in a way that was less vulnerable.

4.3 3rd stabilization: product and use

Agri-co was from the start assigned the role of commercializing the products. Distribution was sought via big retail or restaurant actors that were already concerned with high-end segments of consumers, presumably making it easier to associate these new products with established practices. Well-known marketing practices of building the story of a high quality product, such as vacuum packaging, minimalistic and transparent design of package, logo, and other materials, representing the product in various situations of use via photographs, and gathering everything under an umbrella of a 'brand'. The product and the related concept were sought stabilised, based on the story of an innovative fish farm that had brought fresh fish products to another level of quality. At the same time, this attempt at connecting the fish farm and agri-co with certain groups of potential customers threatened to de-stabilise the initial agreement and the production practice. Again we can see efforts at networked learning, of how agri-co, the fish farm, industrial customers, and consumers had to learn, i.e. stabilize new patterns of interaction between production, distribution, and use. In the initial process of establishing an agreement between the fish farm and agri-co, the actors were highly optimistic regarding the market potential. The adding of agri-co's expert practices on marketing and distribution, was expected to take prerigor salmon to 'another level'. But months went by without getting any customer deals, so the commercialization manager started changing their marketing strategy and product portfolio. The owners of the fish farm were disappointed, both from the lack of commercial progress, and from what they perceived as lack of faith:

[The commercialization manager] lost faith in this product relatively early. We tried to change the strategy, if we would get the fresh product into retail and establish the brand. We felt that the commitment to sell that product not was good enough compared to the prognoses we had been presented. (managing director, fish farm)

The fish farm approved the change in market strategy, going from cured products to 'hyper-fresh' products, but at the same time they were clearly disappointed. The commercialization manager, on the other hand, saw this as lack of realism on the fish farm's part:

The people at the fish farm are very naïve and believe that when experienced marketing people from agri-co say it will sell so much, it probably will. But it is impossible to tell whether a new product category will sell 10 kilos or 100 kilos. So, we had to lower their expectations. (commercialization manager, agri-co)

Indicating that agri-co perhaps had ‘oversold’ their abilities on the market side, in the presence of the ‘realities’ of marketing innovations, he instead emphasised the inherent uncertainty of innovation processes. In contrast to his communication with his colleagues in agri-co R&D, where he could be more ‘modest’ and ‘realistic’, he had found it necessary first to boost the expectations of the fish farm people to get them motivated. Later these expectations had to be lowered to a more ‘realistic’ level. These communication practices of negotiating and mediating expectations evolved as responses to the actual marketing activities, of branding, seeking to recruit and involve industrial customers, and learning from customer interaction; actors serving demanding consumers with purchasing power. While the practice of marketing in the fish industry was based on principles of economic theory, of auction-like produce exchange, agri-co sought to involve and build relations to potential customers:

The way [the commercialization manager] works is opposite to the thinking of the fish industry. They have a good feeling on their market and are able to change fast, while he wants contact directly with the customer to get a more long-term perspective and more predictability. (project manager, agri-co R&D)

But when dealing with innovative products like these salmon products, it proved difficult to involve customers. First, the products disrupted from the established way of producing and presenting fish, hence producing scepticism from the established fish distribution practitioners. Second, it was hard to know when and how to involve them. They needed to move beyond the idea stage and have something concrete – a prototype or a ‘finished’ product – to present before they felt they could go to potential customers:

How far must the development work have come before you have something to show the customers? I think we have gained an increasing understanding of this. But it is very difficult to do before you have something concrete. (CEO, agri-co)

This would to an extent lock the (conception of) the product portfolio within a certain framing that could turn out to be on the side of what the customers would be interested in. After all, the product, and its associated innovative practices of production and marketing, would need to be adaptable to both distribution and consumption practices in order to stabilize as a commercial success. Early in the dialogue process with potential customers, they learned the benefits of bringing technical expertise to the meetings in addition to the commercial:

[The commercialization manager] views it one way while I see it in a more technological way. While he only sees that we need that product, I have to see *how* we can get that product. (project manager, agri-co R&D)

This researcher found it more convincing and informative to meet customers directly. Furthermore, his presence in important customer meetings also meant that the agri-co team could answer technical questions right away, thereby improving the dialogue and negotiations. This was important in exploring and negotiating the potential for aligning the product and relevant practices on the market side. They went to different arenas to

get in touch with potential customers internationally illustrated with the following three snapshots:

First, early in the process, they joined an agri-co marketing team on cheese to an international food fair to present their innovation. Top class chefs were part of the team, to present the products in the contexts of various consumption practices. The new salmon products were duly presented in various dishes; with sauce, alone, with sushi, on canapés, et cetera. The product was always presented in associations with other ingredients, demonstrating use situations and recipes. Its odds seem better if presented together with potential ‘partners’, partly to educate the customers on its use, and partly to convince them about the uniqueness of this particular product. The response was very good, but the event did not lead to many concrete plans for further dialogue.

Second, on a trip to Asia together with other industrial actors from Norway they came in contact with the product development department of a large restaurant corporation. They showed great interest in testing the cured products as recipe in hot dishes. The dialogue included intensive exchange of technical knowledge and adaptation of the product, in parallel with discussions on how to best launch it in the market. The restaurant actor suggested a test campaign in Japan; that the product would fit well with cooking and eating practices there. After several months of changing and adapting the product and negotiating prices and sales strategies, the restaurant actor withdrew from further cooperation. Despite successful technical adaptations, they failed to reach a commercial agreement.

Third, giving up on the cured versions, moreover changing from international to domestic markets, the commercialization manager brought with him some cases of the fresh version to various distributors of fish and food. He first attempted to get some traditional fishmongers to sell the product, but they behaved snobbishly, and they had never sold fresh fish in vacuumed packages before. Then he went to a high-end supermarket, which immediately caught interest. Within a couple of weeks they started a test campaign, and set up a promo with top chefs. This was a distributor with matching practices in place: a high-end market with customers more concerned with quality than with (low) price. The supermarket personnel were in close interaction with their customers (consumers), thereby being able to recommend and advice them on how to use their products. In this way the agri-co team got valuable feedback related to improvements of the products and their presentation. In this small and local setting the concept became an immediate success, and went straight into consumers’ cooking practices. This, in turn, became a door opener for the product into three associated supermarket chains with similar profiles.

These three snapshots of the marketing process also displays the change over time from trying to connect with restaurant practices, as this was seen to bring simpler challenges of adaptation, to concentrating on retail, with its complex and detailed set of practices related to packaging, logistics, product variants, and pricing:

The original strategy was to deliver whole weight, so that our customer would use it as an ingredient. But in today’s convenience market, it has to be sliced. Then you get some challenges, firstly on bacteriology, shelf life, if we would vacuum it in a sealed package, without any light getting through. But there are no consumers buying something they can not see. (commercialization manager, agri-co)

Talking about cured products, he explained the level of necessary adaptations and the following technical and market problems that had to be solved. This, of course, required the whole set of partially stabilized practices to adjust to the receiving end, hence adding costs, efforts, and time. The demand for a tightly knit network of practices became visible. Although having established rigid production routines and quality control in the factory, it sometimes happened that products deviating from the prescribed standard found its way to the storehouse and even to the supermarket shelves:

Of course such things happen, but three out of seven times is far from good enough. Once I had to run out to the stores and pick out all the blood-spotted fillets, and replace them with new ones. Such things are unacceptable for a brand. (commercialization manager, agri-co)

Explaining the problems with differences between the fish farm and agri-co in understanding of what it takes to establish a high-quality brand among consumers, the commercialization manager argued that they needed extremely close associations between the different practices going into the project of commercializing prerigor salmon. In effect, there was no room at all for variation. The practices and materials of the product and the concept had to be carefully related to each other in new and stable patterns. It was a networked learning process of matching distribution channels, managing and associating the perceptions of the products with users' practices, and supporting all this by a fully stable production practice. The product had to be stabilized as much as possible, while at the same time keeping some interpretative flexibility as the consumers could have had other preferences of use.

5. DISCUSSION

In this paper we have argued for taking a practice-based approach for understanding how practices are developed and moved. Studies (Gherardi, 2000; 2001; 2006; Nicolini et al., 2003; Orlikowski, 2002) have focused on how practices are situated, and difficult to transfer. Yet, practitioners often attempt to develop new practices that can be moved to other domains or locations. In our case this was related to a small fish-producing company and a large dairy co-operative which came together to develop and commercialize products that they could sell both in Norway and abroad. The question we wanted to address was therefore how was this possible? We suggest that important elements of this process were related to finding a delicate balance between stabilisation and openness in an interactive process of networked learning.

Our study supports Hernes (2008:xvii) who argues that "something perceived as stable, even if only temporarily, may emerge from something that is inherently unstable and where many possibilities exist for what might follow". In the collaboration between these actors what needed to be transferred and what they believed would be the most challenging aspects were very different from what initially anticipated. Here hygiene practices and nutritional standards which were seen as minor issues turned out to be critical. We also saw how the associated set of practices were de-stabilized and needed adaptations every time a new practice was connected to the process. While some things had to be stabilized to bring the innovation process forward, other things had to be kept flexible to enable the connecting of new actors.

We suggest that a fundamental aspect of developing and moving practice was related to stabilisation. In fact, this article aims to contribute to theory by indicating that

stabilization is not limited to stabilization of the product/outcome, but also other elements. Figure 1 illustrates the three aspects of stabilisation identified in this case:

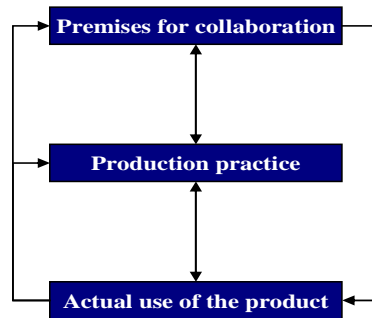


Figure 1: Three dimensions of stabilisation

1. Stabilising the premises for collaboration. An important part of this practice was about negotiating an agreement between the different actors. This also implied that they over time needed to learn how they could collaborate and what to accept, while being open for possible changes later. In this period both the production practice and the product was kept open.
2. Stabilizing common practice of production. As we recall they had several rounds of negotiations and training on routines, adapting the machines, but also adapting the ‘basic’ (moving and merging) practices. Here the production practice is stabilized, while keeping the product open.
3. Stabilising use of the product(s). Learning about/from users and seeking to stabilise a product/concept, which in some instances de-stabilised both agreement (1) and production practice (2).

6. CONCLUSION

Our paper sheds light on how practices are moved from one setting to another, with a particular emphasis on the contingent relationship between the practice’s stability, enabling sharing the socio-material elements of the practice, and its openness for re-interpretation and adaptation to new local practices. The dilemma seems to be captured by the question of how open a practice has to be in order to be adaptable to a new setting, and how stable (closed) it has to be in order to be movable at all. We find that this is a delicate balance to be considered, involving a process of networked learning. Consequently, the premises for collaboration around the development of a new practice, the production practice as such and the product mutually influenced on each other, and were taken through several rounds of stabilization and de-stabilization.

This may serve to sensitize researchers and practitioners to the dual process of ‘packaging’ practices to be moved (Mørk et al, 2006), and at the same time maintaining the necessary flexibility to enable local adaptation. We have studied a particular practice concerned with ‘scaling up’ production of an innovative product. This transfer had implications for how various other practices had to be adapted to the innovation in order to succeed. We suggest that this is also relevant for other settings, such as distributing service or organizational innovation from one setting to many (eg. from medical R&D departments to many hospitals (see Mørk et al., 2006), from head quarters to subsidiaries, etc.).

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