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# Exploring a Strategic Turn: Case Study of Innovation and Organizational Change in a Productivist Dairy

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**ABSTRACT** *Some firms within the conventional agri-food processing industry change their business strategy by trying to innovate towards alternative foods, like regional foods. For firms which are part of a larger organization or integrated in a group of companies this is a special challenge. The purpose of this paper is to explore what happens when a firm within a large and complex organization tries to turn from a productivist strategy to a differentiated strategy. This exploration uses a case study from the Norwegian dairy industry. The case shows that powerful industrial conventions and lack of suitable organizational conditions can be a hindrance for organizational change. Organizational capabilities to change routines and conventions have significant influence on the result of the innovation process.*

## Introduction

Increased international trade, more intense industrial competition, and increased influence of wholesaler and retailer groups in the agri-food chain, have created new challenges for the agri-food processing industry in Western Europe (Goodman & Watts, 1997; Ward & Almås, 1997; Marsden, 2003). These challenges are also followed by changing consumption trends and pressure towards lower economic support for agriculture, *inter alia* as a result of processes of liberalization of trade promoted through the World Trade Organization (WTO). These external factors force firms in the processing industry to act in new ways to maintain their economic viability.

The processing industry meets these challenges in a variety of ways. In this paper focus is on innovation in a Schumpeterian sense: firms work for increased income or growth of the firm through development of new products, market development, or implementation of

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new production techniques or organizational solutions. Innovative actions related to, for example, product development, are part of a social process, where a firm recognizes that changes are needed, develops strategies, takes new actions, and finally results in the firm's performance can be observed. The sequence "takes new actions" is the focus in this paper and is part of a general question of how organizations change their behaviour. Innovation does often imply organizational change and learning, i.e. a change in the way members of the organization act together (Lazonick, 2005). To understand collective coordination of action it is necessary to explore the hidden aspects of relations between actors.

Examples of innovation strategies within the agri-food sector include restructuring from a conventional processing firm to a new business by development of niche, "regional", and "local" products. These kinds of differentiation contrast with the more conventional cost-reduction or productivist strategies, and reflect what Goodman (2003) call a "quality turn" in agri-food sector. This turn is related to the distinction between the agro-industrial paradigm and the increasing "alternative food". Characteristics for productivist agri-food industries are price competition and achievement of low prices through cutting costs and utilization of scale-advantages. A strategy of differentiation is to develop unique competitive advantages other than low price (Porter, 1992).

Creation of uniqueness may imply innovation. To understand innovation in depth the micro-level must be studied, i.e. the firm or the business organization as a basic entity of economic activity. Firms are understood as independent firms or as branches within companies. However, a narrow and rational understanding of organization is not sufficient when collective action is explored. First, the employees in the firm represent a variety of interests, knowledge, and action, which often makes collective rationality an illusion. Organizations are rather an arena for collective coordination of action. Second, borders between the organization and the outside world are often vague and not at all tight. Organizations are open systems. Hence, all three dimensions (rational, natural, open) in the definition of organization given by Scott (2003 pp. 26–29) have relevance: rational because business strategies are tried and carried out in formal structures, natural because informal relations among members are often more important than formal structures, and open because inter-organizational relations are occasionally more important than intra-organizational relations. The actual dimension applied depends on the specific organizational aspect that is emphasized.

In this article exploration of practice in an analytical approach is emphasized, that is to say what actors do, in what context they act, and how they approach the specific situation is studied. With this practice-oriented approach and by analysing across the organizational dimensions, it is possible to shed light on the everlasting question of how organizations change. From this it follows that the aim of this paper is to explore what happens when a firm embedded in a complex organization tries to turn from a productivist strategy to a differentiated strategy. This special kind of transformation involves innovation and to succeed in innovation, organizational change is needed. Throughout this paper these relations between innovation and organization are explored.

First, briefly an analytical approach to how innovation processes imply organizational change is put forth. Second, an empirical study from Norway showing genuine attempts at innovation in a dairy firm is presented, and through an analysis how organizational change can be interpreted is indicated. The first attempt at innovation was to turn the business strategy from standard volume dairy products towards a local niche product. Because of

strong industrial conventions and lack of suitable organizational conditions, this first attempt failed but they succeeded when they returned to a standard product. Third, lessons that can be learned from this case and some implications this may have for business strategies, and further research is addressed. An important lesson is that organizational capabilities to change routines and conventions have significant influence on the result of innovation process.

## Analytical Approach to Change in Organizations

Development of new products or implementation of new production techniques involve a change of production system, expressed as new actions within a firm. These actions are based on new combinations of resources and production, following the Schumpeterian school. Accomplishment of new actions is a question of organizational learning and knowledge creation and how these processes are embedded in an organizational and spatial structure (Argyris & Schön, 1996; Nonaka & Takeuchi, 1995; Cooke & Morgan, 1998; Gertler, 2003; Bathelt & Glückler, 2003). Learning and knowledge creation are important aspects of organizational change and in my approach they lead into showing connections between innovation and organizational change, and especially how some kinds of innovation imply organizational change.

Development strategies often imply a new kind of experience for companies. There is a need for abilities to innovate or rather entrepreneurial capabilities to implement new ideas into business activity. Innovation is first of all the process of developing a new solution while entrepreneurship implies the process of commercialization (Spilling, 1998). The firm's entrepreneurial capability can be defined as the capacity, knowledge, and competence of the firm oriented towards exploitation of opportunities and the creation of competitive advantages in the market. Among the most important resources are the non-material competence and organizational resources needed for linking physical and human resources to the competitive positioning strategy in the market. From this it follows that entrepreneurship is a social and collective phenomenon (Johannisson, 2000). Competence and capacity in networking and cooperation, in strategic planning, as well as in how to execute plans, how to adjust the organization to the strategies, and how to be a learning organization are all important aspects of the firm's entrepreneurial capability.

Events in a firm's environment may stimulate the firm's organization to do something in response. The cause may be a need, for instance, to achieve their business objective or market share of sales. Events from the surroundings can be a drop in the market demand for a certain product, a drop in prices, a new government restriction, or a competitor's launching of a completely new product design, etc. Even though several reasons to innovate can be listed, these external events often trigger innovation processes in firms.

When changes in technology or in the market occur in a way that an organization is not accustomed to, the organization must act in a new way. As Berger and Luckmann write: "The validity of my knowledge of everyday life is taken for granted by myself and by others until further notice, that is, until a problem arises that cannot be solved in terms of it" (1966, p. 58). In other words, new strategies and knowledge are needed to solve the problem, as illustrated in Figure 1. A major point is that creation of new products or production in an organization requires a change in the organization itself. It is argued that transfer of technology must be regarded as organizational development

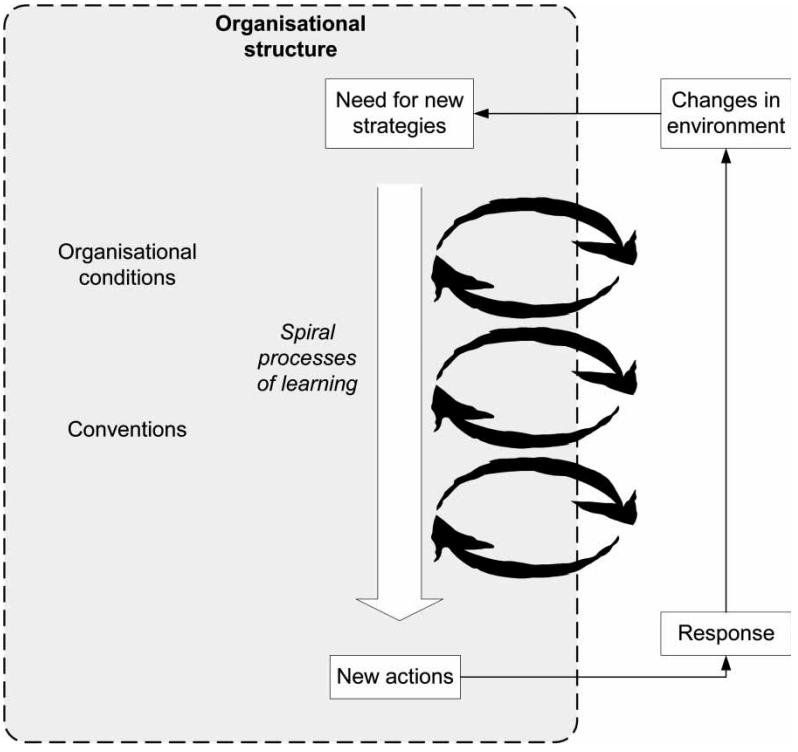


**Figure 1.** Analytical model of elements of innovation processes in organizations

because introduction of new technology implies a change in work routines (Levin, 1997). To change routines it is necessary to change the way of working, and that is organizational development.

In the dairy case in this paper the cause for organizational change was forced by external circumstances. The question was how to respond to external forces. When an organization has realized there is a need for new action, it can create strategies for this action. This statement regards organizations or firms as rational actors as in the neo-classical theory of the firm. However, coordinated action is not predictable in a rational way, as will be shown later. But what can organizations then do? They are not without governance and coordination. Hence, the organizations are able to agree on goals and develop strategies to achieve the goals and in that sense to be rational. But the knowledge is limited, social mechanisms are too complex, and the number of variables nearly unlimited. From this it follows that organizations act with bounded rationality (March & Simon, 1958).

As ideal-types, organizations can meet these changes in two ways: one way is to adjust activities to be in line with organizational routines and work harder to perfect their routines. This strategy has clear similarities to single-loop learning (Argyris & Schön, 1996) and does seldom have connections to innovation. They may also change strategy more fundamentally and their patterns of collective action will change as a result. Then there is a need for social reconstruction so the organization is able to change routines and meet the challenges. A comprehensive change like that has clear similarities to

double-loop learning (Argyris & Schön, 1996) and is often connected to processes of innovation. Goals for action and the steps that must be taken to achieve the goals are understand as strategies (Sundbo, 1998).

Knowledge is complex but a simple distinction between explicit and tacit knowledge is useful (Polanyi, 1966; Nonaka & Takeuchi, 1995). In short the difference is: explicit knowledge can be articulated in formal language and tacit knowledge cannot. Nonaka and Takeuchi focus on the interactions between these two kinds of knowledge and argue that they are a key to the dynamics of knowledge creation in business organizations. Moreover, knowledge creation is crucial to changes of action in organizations.

A model of elements of innovation processes in organizations is illustrated in Figure 1. The elements of organizational learning are inspired by Nanoka and Takeuchi's (1995) theory of spiral processes of knowledge creation and Argyris and Schön's (1996) theory of single- and double-loop learning. Nonaka and Takeuchi take tacit and explicit knowledge as a starting point. Between these two kinds of knowledge there are four principal conversions in creation of knowledge. First, socialization; where individuals, through interaction, adapt and share cognitive and technical tacit knowledge.[1] Second, externalization; where tacit knowledge is articulated into explicit concepts. Such expressed concepts may be metaphors, analogies, hypotheses, models, etc. This process is triggered by dialogue and collective reflection. Third, combination; where concepts are systematized into a knowledge system. Fourth, internalization; where experiences from the other three modes are internalized into individuals' cognitive and technical knowledge. The "circle" is then complete because individual tacit knowledge will be socialized with other individuals in the organization. Actually, the model it is not a closed circle, because the new socialization does not take place at the original starting point. New knowledge is created and this again starts a new process. A spiral is a better metaphor for this dynamic model.

How can these conversions be explained? What happens in processes of socialization, externalization, combination and internalization? From the theory of conventions supplementary tools can be adopted. Conventions are here "a sort of 'agreement' about what is to be done—in the sense that what each person does meets the expectations of the others on whom he or she depends" (Storper & Salais, 1997 p. 16). However, it is not a formal or formulated agreement but rather a kind of rule that may be considered as tacit knowledge in the theory of knowledge creation. Some specific modes or worlds of worth, constituted by bundles of conventions, are identified and developed by Boltanski and Thévenot (1999). Especially relevant in this case, is "the market world" (focused on selling, buying and competition) and "the industrial world" (focused on production and efficiency) (Boltanski & Thévenot, 1999). However, conventions are specific for each organization even though they are rooted in common worlds of worth. In Figure 1, this is illustrated through conventions as a part of the organizational structure. In a stable situation, the conventions are an essential element to manage daily life filled with uncertainty and many possible choices. In a situation where a change is welcome, conventions may involve an unwanted indolence.

A drastic organizational learning involves change in conventions and is a kind of double-loop learning (Argyris & Schön, 1996) where tacit conventions must be changed to change action. From this it follows that conventions may have significant influence on the spiral processes of learning.

Organizational structure is like a map of the organization. Structure means how tasks and working processes are organized, how tasks and responsibilities are distributed.

More specifically, organizational structures can be understood as channels of communication, information systems, the spatial diffusion of the organization, guiding procedures and routines, systems of incentives (Argyris & Schön, 1996). Within this structure there are elements and phenomena in addition to conventions, called organizational conditions that may influence the processes of innovation.

These conditions may promote or hinder processes of knowledge creation. Nonaka and Takeuchi focus on a few conditions at the organization level that are required to promote the knowledge spiral (Nonaka & Takeuchi, 1995, pp. 73–83). One of them, intention, is defined as the organization's aspiration to its goals—in a business organization usually its strategies. If an organization has no vision or commitments regarding the direction it wants to take, then it will be difficult to pass through the different modes of knowledge in creating processes at the organizational level. Another condition, autonomy, is understood as the ability of the individuals in the organization to act autonomously as far as possible. The argument for this policy is that creativity will be stimulated and thereby increase the chance for unexpected opportunities at the organizational level; individual knowledge processes will be stimulated.

A simplified model of spiral processes of learning in organizations is shown in Figure 1. Changes in environment force the need for new actions in organizations if those organizations are to maintain and develop their position, for instance, in the market. These new actions may imply innovation. Strategies are designed to give direction to the kind of actions that are needed. To be able to design such strategies, organizational knowledge creation is needed, and to be able to work strategy into practice, learning is needed. As discussed earlier, learning can be understood as a spiral process where knowledge is transitional; it moves between modes of tacit and explicit knowledge. How well this spiral process makes progress depends, *inter alia*, on conventions and organizational conditions rooted in organizational structure.

However, it must be emphasized that organizational learning is not solely an intra-organizational issue. In Figure 1, organizational structure is indicated with a broken and open line, in order to emphasize that organizations are open systems. Actors both inside and outside the organization are players in the process of learning. Hence, the spiral process of learning includes relations between various kinds of actors, including external ones.

## Context for Innovation

The main products from Norwegian agriculture are dairy and meat products, eggs, cereals, and temperate fruits and vegetables. The products are almost entirely sold in the domestic market. In 2002, national self-sufficiency from agriculture on a calorie basis was 50% (Rogstad, 2003); the rest consisted of fish and imports of food.

Norway has through the Agreement on the European Economic Area (EEA) close relations with the European Union (EU) without being a member. However, agriculture is only incorporated to a minor degree in this agreement. Hence, Norway has its own agricultural policy within the framework given by the WTO.

Agriculture in Norway is relatively small-scale compared to many Western countries. In 2001, 19,795 dairy farms produced 1516 million litres of milk. The average dairy farm had 15 cows, that is fewer than in Sweden (36 cows), Denmark (62 cows), and Finland (16 cows). Milk production in Norway has so far maintained a high degree of regional

dispersion. Milk was processed at about 71 dairy plants (spring 2001) all over the country, with about 4900 employees.

The farmer-owned cooperative company TINE is the most important actor in the milk sector in Norway and has been in this position for decades. This cooperative buys milk from dairy farms, processes milk into products, and sells and distributes products to retailers, institutions and other buyers. In 2001, TINE consisted of 10 regional cooperative companies, which covered different geographic regions of Norway. Certain common tasks were delegated to, at that time; their national federative umbrella company TINE Norwegian Dairies with headquarters in Oslo. This company coordinated much of the activity in the regional companies and had a very dominant position in the Norwegian milk sector.

From 2002, TINE has been reorganized with two main changes: first, TINE Norwegian Dairy, from now on called TINE, is the primary farmer-owned cooperative instead of regional cooperatives as before 2002, i.e. TINE is not a federative organization anymore but a group of companies (TINE Group) with many corporate functions at the national level. Second, the regional cooperatives are branch (daughter) companies, and the number is reduced from 10 to five. This reorganization, see Figure 2, gave more power to the national level in TINE and aimed to make the organization more competitive as a strategy of cost effectiveness.

For decades, TINE was the only actor in liquid milk supply in Norway. In cheese supply only a few competitors were operating in limited market segments, but these actors purchase milk for their production from TINE. In 2000 there were still very few competitors; TINE bought 99% of the milk produced on the dairy farms and owned most of the dairy plants.

This strong position of farmer owned cooperatives is characteristic for the dairy sector in many countries. Both Denmark and the Netherlands have like Norway an almost totally cooperative dominated dairy sector, while in other countries cooperatives are minor actors, as in UK after deregulation in 1994 of the Milk Marketing Board (MMB) and the demerger of Milk Marque in 1999/2000 (KPMG, 2003).

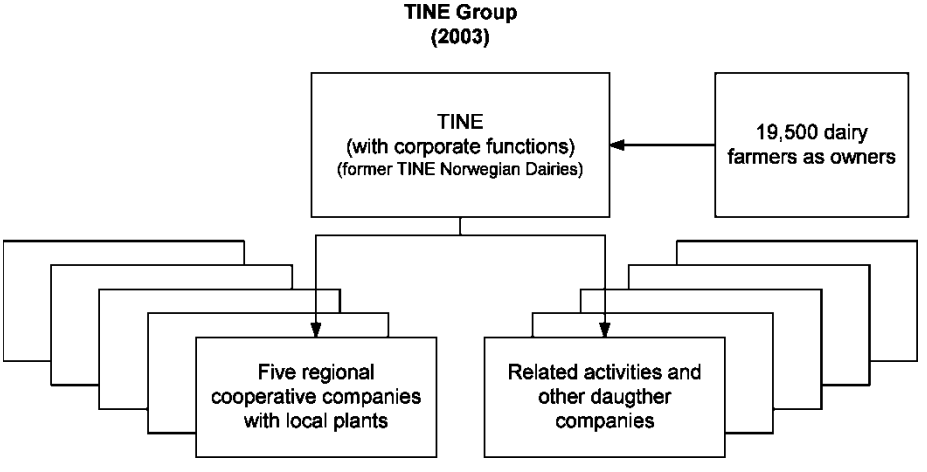


**Figure 2.** TINE Group after reorganization in 2002

A relevant question is; has cooperative ownership any distinct influence on innovation compared to companies governed by capital owners? For intra-organizational processes in dairies it seems like that type of ownership is of minor influence. Strategic managers are often more important than type of ownership (Lazonick, 2005). Nevertheless, as my case will show innovation is not purely intra-organizational but to a high degree inter-organizational and involves a long list of external actors. It is argued that cooperative ownership, with local dairy farmers as owners and the advocacy group, was crucial for the initiative of innovation in the dairy firm in my case. Owners of dairy cooperatives are not focused on return on invested capital but on having an agent (the dairy) that can process and sell the milk from dairy farms to give the farmer a good price.

Strong restrictions on import and export of milk and dairy products have been crucial for the dominant position of TINE in the domestic Norwegian market. However, these restrictions are now under pressure due to the ongoing negotiations in WTO. So far, import and export of dairy products is of limited volume, but lately there has been a small increase. Imports are mostly cheese from Denmark, Germany and France. The most important markets for export are the US and Japan. The most famous Norwegian cheese is Jarlsberg.

A declared political objective in Norway is to increase competition in the dairy sector, to counteract the monopolistic position of TINE. This dominant position through an era of the agro-industrial paradigm has definitely brought industrial conventions to a position of dominance. At the same time, there is a relatively restrictive attitude towards a large increase in international trade in agro-food products, on the grounds of agricultural, regional and food politics. Thus, domestic competition is stimulated, and even TINE experiences competitive challenges and is finding that dominant industrial conventions are under pressure. Some of the local plants/firms and regional cooperatives are trying to develop new products even if TINE at the national level has overall responsibility for product development within the TINE Group. This case study is an example of one such developer that challenged dominant conventions.

## Innovation in a Dairy Firm

This is a story of how a firm as a part of a group of cooperative companies tried to innovate to be more economically viable and maintain its existence. Their first attempt at innovation was to turn their business strategy from standard volume dairy products towards more differentiated niche products. In this section, it is described how this failed and how they succeeded when they turned back to standard products.

Data from this case on innovative attempts in a dairy in Norway were collected through participant observation and other methods during the period 1997–2000. This case is taken from a project, called TF2000,[2] within a broader research and development (R&D) programme operating in the late 1990s, where the author's research institute was to contribute toward restructuring and the search for new solutions in organizational and production restructuring in a dairy cooperative (Stræte, 1999; Stræte *et al*., 2000). The author was programme manager and an active participant in the specific project that constitutes the case in this paper. However, the local firm, TINE Finnmark, was responsible for the project TF2000. After the end of the author's project participation in 2000, new data were added through informants and newspapers (through autumn 2004).

The major strength of this qualitative and longitudinal research design is the unique opportunity to be "inside" the process over a long period, applying different kinds of

data collection and observation, and developing a holistic view of this organizational phenomenon.

### *Turn of Strategy*

The case study was conducted in TINE Finnmark, a dairy cooperative firm operating at regional level in northern Norway (Finnmark County and a part of Troms County) with two production plants, at Alta and at Tana, with 40 employees altogether in 2000 (see map in Figure 3). The cooperative was owned by 325 farmers who annually delivered about 25 million litres of milk from their dairy farms. The milk was mostly cows' milk but there were also about 40 farms producing goats' milk. The firm covered an area greater than the area of Denmark, with less than 90,000 inhabitants, and the dairy farms were spread over much of the district. No other dairies were doing processing in the area. In 1998, the main products from the dairy were liquid milk for consumption and a special variety of butter.

TINE Finnmark was until the reorganization in 2002 one of 10 regional companies in TINE. As a part of the reorganization, TINE Finnmark merged with the only other regional cooperative in northern Norway. They then became one of the five regional units of the TINE Group (see Figure 2). This reorganization gave more power and opportunities for coordination to the national level in TINE and less to the regional level. This case study was mainly conducted before the regional merger and the total reorganization of TINE. Nevertheless, reorganization was a part of the context and later on the merger was of relevance for the process of product development. The climate for intra-organizational cooperation probably became better after the reorganization.

Only about 13 million litres of the milk TINE Finnmark produced annually was consumed in its own area, corresponding to 52% of the actual milk production in the region. The rest was transported out of the area to the neighbouring TINE dairy company. Processing just half of the purchased milk was a problem in the first instance for the business activity in TINE Finnmark because their average production costs increased as the dairy's exploitation ratio of production capacity declined. Over time, this situation was not economically viable. In the last instance, this situation threatened milk production in the county altogether; without a local dairy, the transport distance from some farms to the nearest dairy would be very great. Without milk production very little of agriculture would be left in this northernmost part of Norway.

Because of the pressure of the situation, the project TF2000 started in 1997. The main objective of the project was to increase the dairy's own processing of purchased milk. The situation forced the dairy to act, and TF2000 was an important response.

### *Progress by Fits and Starts*

The process of increasing milk processing can be described in three phases during the period from 1997 to 2004.

In the first phase, several internal working groups were put to work on the project. Persons from TINE Finnmark (manager, owner/farmer, and representatives from administration and production), from the national TINE Norwegian Dairies (representatives from the departments of organization and R&D) and from the Centre for Rural Research

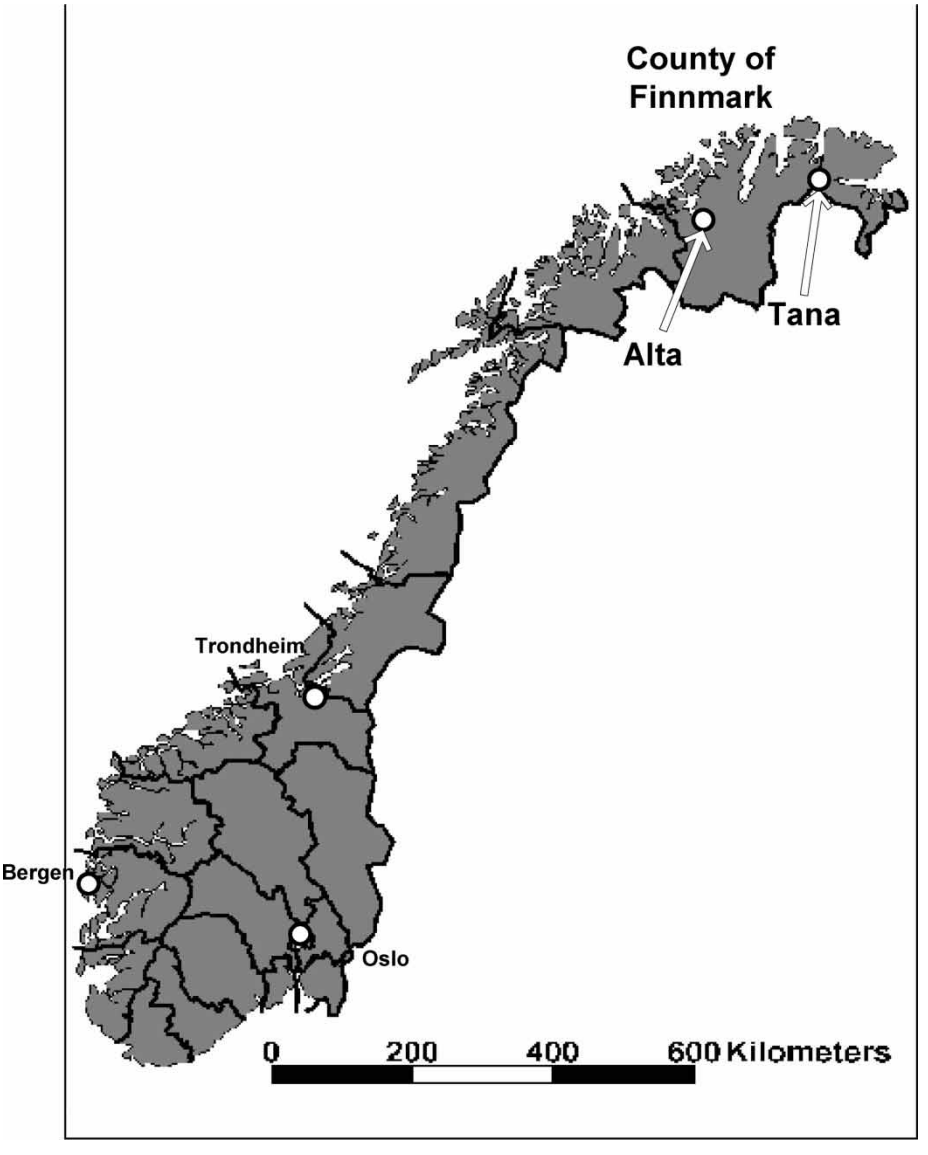


**Figure 3.** Norway and the county of Finnmark in northern Norway

(CRR) (process consultants) participated in the working groups. TINE Finnmark managed the project and working groups.

The first outcome, a new drinking milk product to which was added various fruit juices, "*Fruktmelk*", was soon launched. One of the working groups in the project developed an idea of creating a new product. This group forced the process at high speed and did much of the practical work themselves by developing a recipe, designing and ordering packaging, and adjusting the technical facilities for production at the plant in Alta. Relations with the regional state college were established in order to benefit from their competence

in marketing. They helped the working group conduct product tests in the market. However, there were problems with marketing and getting access to stores, so sales were minimal. The juice mix was promoted as a regional product with a packaging showing the North Cape, the midnight sun, and the canyon of Alta—all famous attractions of the county. An acquaintance of a member in the working group was helpful in designing the packaging. It was branded with the name of the regional firm. Several other product ideas were also discussed widely, as well as export of milk products to the neighbour in the east, the city of Murmansk in Russia, with nearly 500,000 inhabitants about 130 km from the Norwegian border. However, it soon appeared to be difficult to achieve progress in developing any of the ideas.

After a year and a half, the project was reorganized into fewer working groups, with one group responsible for developing a specific product at one of the two plants. That was the beginning of the second phase. During the same period, the firm was in organizational turbulence. This disturbance culminated when the firm's manager had to leave his position as the board lost their confidence in him. This episode was not directly connected to the project, but the work was influenced by the turbulence, that was based on conflicts between the manager and several employees. The involvement of CRR was reduced in 1999/2000 and was completed during the spring of 2000, as initially planned.

The product development was continued by the firm and TINE Norwegian Dairies. Investment for new production at one of the plants, Tana in eastern Finnmark, started in 2001. A range of new products, a kind of salad based on soft white cheese, was planned to be marketed with the national brand "TINE". TINE Finnmark and TINE Norwegian Dairies were cooperating on questions such as packaging, marketing, sale, product development, and economic calculations. At the regional level, including the local plant in Tana, they were working on: competence, recruiting, education, upgrading the production sites, installation of new processing equipment, certification of production localities, budgeting and planning of test production, and implementation of production quality control systems. A by-product was planned, "*Kesam*" (a kind of quark; fresh curd). These new salads had all the ingredients, packaging, etc., ready to launch on the market.

However, in August 2002 the process was stopped because the main retail chains did not want to incorporate these new products into their product assortment. Negotiations in progress were interrupted. A potential competitor to TINE on these salads negotiated with the retailers, and the result was the rejection of purchases from TINE. TINE's position on the salad shelves was much weaker than on the shelves of more conventional dairy products, because other salad products were in the market already. Hence, TINE was not able to launch new salads on the market. They had no customers.

In the third phase, the planned by-product, "Kesam", was launched in May 2003 after some reorganizing, with distribution all over Norway, and with the national brand "TINE". This time retail chains did not reject this product, probably because it was sold from the shop shelves with more conventional milk products, where TINE was dominant. The launch and sale was very successful, and the product sold more than expected. "Kesam" is still processed at the plant in Tana (late 2004), and later new variants were also launched. In 2004, the number of employees at the Tana plant was increased slightly. Even better for the dairy was a large decline of volume of milk transported to the south; the dairy is now able to process most of the milk purchased from the dairy farms in the county. The objective from 1997 of increasing the processing was fulfilled. The employees and the dairy farmers are optimistic about the future.

This story shows the dynamics of the social innovation process. An important part of innovation for the organization is to learn to act in new ways. Following Nonaka and Takeuchi on the knowledge aspect of learning:

> Creating a product concept involves a community of interacting individuals with different backgrounds and mental models. While the members from the R&D department focus on technological potential, those from the production and marketing departments are interested in other issues. Only some of those different experiences, mental models, motivations, and intentions can be expressed in explicit language. Thus, the socialization process of sharing tacit knowledge is required. (1995, p. 73)

The project of product development in TINE Finnmark was an organizational knowledge creation process; the firm intended to change its business strategy. This strategic turn involved a change in pattern of actions, and to do that new knowledge was needed.

A reason for turning towards regional and local foods and not into other strategic directions was to benefit from a growing interest from consumers to know where foods come from as a counterbalance to standardized and "placeless" food. Secondly, regional food would give fewer problems for the main production strategies for TINE in general, i.e. the local firm could follow their own strategy.

The project TF2000 created in the first phase an arena for socialization where the team members discussed what was needed to meet the challenges for the dairy, what the opportunities were, and how to do it. Because of the different backgrounds and views on the situation of the team members, time was spent on dialogue and formulating concepts and tasks: externalization. The team members agreed that the new product should be based on milk from the county and be identified with northern Norway—a regional product. Hence, "Fruktmelk" was developed and launched rapidly. The modes of combination and internalization were probably worked through too fast in the case of this specific product. Problems occurred with access to shops, distribution, and marketing, which resulted in low sales. The idea and concept of the new product was not internalized either in the marketing and distribution systems in the local organization or at the national level. However, it was a process of knowledge creation even though passage of some of the modes was incomplete. Regarding ideas other than "Fruktmelk", the project team had problems with progress in the work. In other words, the team had difficulty in expressing what to do in concrete terms, i.e. passing through modes of socialization and externalization.

Here the story of product development in the dairy in northern Norway comes to an end. In short; it can be concluded that the dairy tried to differentiate their production through innovation. They failed in their first attempts and from that it follows that they are not part of "the quality turn" within the agri-food sector. However, they certainly succeeded later on with a new product within the conventional sphere. In that way, this is a story of success.

So far, this is a story about how innovation processes within a dairy firm were carried out. The struggle of transformation of knowledge has resulted in new products and a better economic situation for the firm. The spirals of learning were a foundation for the process of innovation, see Figure 1. However, the question raised in the introduction is not sufficiently answered: What happens when a firm embedded in a complex organization tries to

do something different than it is used to, and what are the challenges when doing so? Especially the failures and stagnation in the process need better explanation.

In the following, focus will be more specifically on how to improve the understanding of what happened when the firm struggled with the development of new products. This case illustrates two evident problems in the process: First, the resistance to change and problems of implementing new strategies found within the organization, and second; the disregard of power outside the organization.

## Problems of Implementation of New Business Strategies

Creating visions and strategies is important to initiate innovation, but there is also a need to be able to change dominant routines and conventions in the organization to work out the strategies in practice.

### *Routines and Conventions as Inertia to Change*

One example in the dairy case can illustrate this need to change. In the first phase, a struggle for progress was experienced in the process of knowledge creation. It was very difficult to change the established way of working. Following the model in Figure 1 it was more like a circle process than a spiral process. The project and the firm did not make use of the opportunities they in fact had, such as starting offensive marketing of the new fluid milk product. The "old" routines and conventions in the organization bounded what was possible; for example no money for marketing this product could be found in the budget for the actual year and there was no flexibility to reallocate funds due to changed conditions. Further, it was not clear who was in charge to give orders and to talk with shopkeepers and clarifying this uncertainty was difficult. These are examples of how difficult it was to change the old plans for the year and implement new tasks. The new boundaries or rather opportunities given by the project were not taken into account.

Another example can be related to the "standard volume paradigm" that can be found in the milk sector (Stræte, 2000; Jacobsen & Stræte, 2002), that is focused on production and efficiency, i.e. dominated by conventions of "the industrial world" (Boltanski & Thévenot, 1999). To be a successful innovation within this paradigm, a product must generate a high volume of sales. Such a paradigm can be a barrier to knowledge creation processes, when knowledge related to niche products is to be created. It consists of routines and conventions to serve volume production. Actions that do not fit are opposed, but not necessarily deliberately. This is a reasonable explanation of why the regional and local aspect of quality "disappeared" when the national organization took a much stronger position later in the process. The local attempts to change conventions were pushed aside by the conventions of mass production from the national part of the organization. The local attempts were never strong enough to override the industrial conventions found in the organization both at the local and the national level.

An effective strategy of innovation must be implemented or rooted in the organizational structure to succeed (see Figure 1). To achieve this, a process needs to involve most of the organization. In TINE, visions or intentions for development of new niche products were expressed, defined and put into force at national level as well as the regional level. Visions involving a regional development were discussed and accepted by the board of TINE at national level in June 1997 at the same time as the project TF2000 was initiated. In

short, a "green light" was given for product development in the regional companies. In fact, this intention was in deep contrast to the business strategies expressed during the 1980s through to 1997, where centralization of R&D and national coordination were given priority in TINE. This new strategy for TINE Finnmark was a kind of counter-strategy to survive, and it was accepted at the national level. Nevertheless, acceptance does not necessary imply active involvement.

Of course, implementation of a counter-strategy raises some problems. For example, it was not deeply rooted throughout the organization even though a vision was expressed at the national level. The niche strategy was, and is still, disputed. It may be said that the intention was articulated, but not operative. Some persons in the firm did not even have confidence in the strategy of developing new products, even though they participated in the project. Problems with implementation also arose in relations between the organizational levels in TINE. On the one hand, the national level did not give priority to supporting the regional companies. As one person from the national level said:

> You [in TINE Finnmark] are free to do want you want, but you have to do much of it yourself. However, it must be economically profitable and it must not be cannibalism on other products at TINE.

This kind of freedom for the regional firm was not unknown to them, according to a comment from the chair of the board:

> We are happy for this project [TF2000], and we have to change ourselves. We have freedom and must take more responsibility. We don't need to ask permission for everything anymore.

On the other hand, the regional level was used to receiving support and service from the national level on most business activities, so why should that not be the situation in the new regional innovation project as well? In spite of the freedom, they sometimes waited for permission from the top level to do things for which they really did not need to ask. In a productivist organization with industrial conventions, they were expected to be efficient rather than creative and take initiatives. The old conventions are inertia to processes of learning (Figure 1). Therefore, the challenge of implementation of strategies must not be underestimated.

### *Organizational Conditions Affect Learning*

Within the organizational structure, conditions other than conventions can influence the capacity to implement new strategies. One of them, intention or visions, was mentioned in the previous section. Another condition is autonomy. When certain tasks are defined for each member, such as in a bureaucratic organization, the focus is on how fit each member is to solve that task. Members are recruited and trained to do a certain task, which is often described in detail (Taylor, 1911/1967). This stimulates standardizing and hinders autonomy, which Nonaka and Takeuchi (1995) stress is a requisite condition for successful knowledge creation.

TINE is a hierarchical organization and has bureaucratic elements. Collective orientation, solidarity, equality, the common TINE brand, etc. are strong common values in

this organization. These values may suppress creativity, which again can reduce the organizational possibilities of new actions. Autonomy was not a highly valued characteristic in TINE. In fact, the most creative person in the project was an external representative, one of the owners of the firm, a farmer. A typical reaction to new ideas and thoughts from several project participants was to see the barriers to their daily tasks and the boundaries set by others in the organization.

Product development demands organizational learning and development. From the perspective of developing local possibilities and strategies, the relations between the different organizational levels in the cooperatives are relevant. The structure of decision-making and the organizational distribution of resources are especially important. The top level, TINE Norwegian Dairies, is responsible for production planning, distribution, product development, marketing, and export in the TINE system (TINE Norske Meierier, 1999). A high degree of hierarchy and bureaucracy can be found in the organizational structure of basic processing in TINE. In a survey among Norwegian dairy managers, only 26% responded that their company or plant applied project organization to solve tasks in their work (Stræte & Rye, 2002). This hierarchical structure is typical for mass production. Within this kind of organization the relation between headquarters in the centre and branches on the periphery is often tense. Standardized mass production cannot tolerate autonomy at the branches, and from this it follows that local ideas and initiatives are ignored or even counteracted in the centre (Schoenberger, 1999).

Organizational structures are important in the stimulation of knowledge creation processes because they affect the viability of the governance modes differentially (Håkansson & Johanson, 1998). TINE Finnmark had neither an organizational structure that was suited to solving new kinds of tasks and actions, nor much experience with work on projects. The product development was organized as a project within the hierarchical organization, i.e. it was within the dairy organization but had no position given to it in the hierarchical structure. In addition to working on product development, working on the project did not generate tacit knowledge for the organization. The external members were more experienced in project work. Organization members had problems coordinating the work on the project with their daily work in the conventional business organization. Some of the employees participated in both, and they had difficulties separating their roles. The failure to market "Fruktmelk" was a result of these problems of organization. Who should take the decisions that were needed? In the project, the hierarchical structure was shaken up, but in the daily and conventional activities the hierarchical structure was replaced with less autonomy. This situation did not stimulate progress on the project. Nevertheless, some progress in organizational learning was achieved (see Figure 1), and progress was made especially in phase two but then the national level with experienced staff was much more strongly involved.

## Battle of Market Access

Change in routines is not sufficient to innovate and succeed in transforming the organization. The second phase in the case demonstrated this in an illustrative way. The failure to achieve access to the supermarkets with the new cheese salads is an example of how organizational change also depends on external actors and actions. TINE had prepared all the products ready for sale, but agreements with retailers were not obtained. Without

going into the details, in this competitive situation TINE was not able to succeed in selling these products.

These actions were external to the organization but cannot be considered as external to the innovation process (as illustrated in Figure 1), i.e. a new product is not successfully developed until it has been launched in the market with positive response from consumers. Within an organizational approach it is necessary in this situation to regard organizations as open systems (Scott, 2003).

How can this episode be explained? Why did the dominant actor in the Norwegian milk sector miss the last step in launching a new series of products? One or several business actors had the power to veto purchasing TINE's new products. A neo-classical explanation is that TINE was ousted by competitors on price and product quality but this does not give much insight.

In the first stages of this process TINE had focused on technical development of the products. In the beginning, mainly TINE Finnmark and later on departments from the national level of TINE were strongly involved. Even though consumer demand was analysed, it was as background information for how to design the product. From a production point of view, or based on industrial conventions (Boltanski & Thévenot, 1999), they did a good job in developing new products. Their business strategy was to expand the variety of products. So far, there was no reason for them not to succeed.

However, what they ignored was the fact they wanted to expand into a segment in the market where their position was not as dominant as they were in fluid milk and cheese. This strong position was not convenient for retailers and competitors. The relation between seller and buyer is influenced by the context, in which market position is an important element. When context changes as in this situation, the relation changes as well. The strategy from TINE did not work even though the material product was probably good enough in the market compared to similar products from competitors. TINE, both at national and regional level, was too poor in conventions connected to the market mode of worth and maybe too strongly attached to conventions connected to the industrial mode of worth. A range of excellent dairy products was not adequate when criteria for justification were changed, i.e. criteria regarding market position and behaviour in other market segments became more relevant.

Retail chains have a strong position in Norway. Lately, prominence has been given to a system where producers are paying in various ways for entering the stores with their products and for placing products in attractive shelves in the stores. The competition authority is investigating this system at present and TINE is under investigation for attempts to misuse the company's dominant position with the sacrifice of a smaller competing dairy company. This investigation is not related to the case presented in this paper. However, both the investigation and the case in this paper show that the relations to retailers are very important and highly influenced by power positions. In the case in this paper, TINE was the loser.

The dairy products from the small firm from northern Norway became involved in a battle beyond the firm's sphere of activity, i.e. the battle of breaking down the dominant position of TINE. What on the one hand was an advantage, being a part of TINE and achieving access to important resources was on the other hand a disadvantage.

This discussion of power makes it explicit that knowledge and internal organizing alone are insufficient for success of innovation processes. The influence from external actors and action related to the organization must not be left out but be included in the learning process (see Figure 1).

## Conclusions

To change business strategy is challenging for a firm, especially when it is part of an integrated group of companies. The dairy firm presented in this paper tried to develop new dairy products in order to become more economically viable. Their original attempt at innovation was to turn their business strategy from standard volume dairy products towards more differentiated niche products. This strategy did not succeed, but substantial progress was achieved when they turned back to standard products. This return was not an explicit and rational decision but rather a consequence of development in relations as the process of innovation carried on.

Innovations most often require organizations to act in new ways, or more precisely: the coordinated action among the members of business organization must change. New actions require new knowledge. Hence, knowledge creation and organizational learning are important to bring about change in coordinated action, and as a next step to succeed in innovation. However, knowledge creation is not sufficient to understand how organizations change. Two additional elements have been emphasized.

First, coordinated action and practice need to be more focused to explore the challenge of implementing new strategies. Even though an intention or business strategy is present, the implementation of the strategy in the organization results in less progress. Tacit resistance to strategies will probably always occur. Hierarchical and bureaucratic organizations that have existed for a long time in relatively stable conditions have problems creating space for autonomy. This is a drawback when new actions are needed.

The ability to change routines and conventions is dependent on how flexible and dynamic the organization is, and how processes are organized. Being familiar with change will entail greater ability to change routines and conventions. One way to stimulate the ability to break routines and conventions is to create "limited organizational space" within the organization. Depending on the organizational level, this may be a branch within a group of companies or a project within a branch. Organizational conditions, like strong uniformity and less autonomy, may be a hindrance for collective learning and increase the risk of lock-in. Hence, novelty is not achieved—in vertically integrated organizations as well as in spatial concentrations of firms (Visser & Boschma, 2004). This "organizational space" needs to be filled with persons. That means intrapreneurs are needed.[3] Within an organization, stimulation of this kind of agency can be done through training, incentives, and recruitment. Future research should focus more on stimulation of intrapreneurship and how intrapreneurs can contribute to organizational learning. Further, to explore change in tacit and routinized life in an organization, "worlds of worth" and modes of collective coordination from theory of conventions could be a valuable path to follow (Boltanski & Thévenot, 1999; Eymard-Duvernay, 2002).

However, organization of processes may compensate for lack of optimal organization conditions and is especially important when significantly different traditions of conventions are involved. Time and space for socialization and externalization are important to shape robust organizational knowledge creation processes.

Second, power, external relations and actions must not be ignored in studies of organizational learning and innovation. With too little emphasis on organizations as open systems, there is from a research perspective a danger of poorer understanding of how organizations change. As this case shows, external relations are filled with power and

are crucial for the innovation process. This perspective of openness should be included in concepts and models developed.

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## Notes

1. The cognitive are "mental models" shared by individuals. These models may be schemata, paradigms, perspectives, beliefs, viewpoints, etc. Technical tacit knowledge includes more concrete know-how and skills (Nonaka & Takeuchi, 1995).
2. TF2000 is short for the company name, TINE Finnmark, and they were in 1997 looking to the year 2000.
3. Intrapreneurship (short for intra-organizational entrepreneurship) is a system to increase the capability of innovation in large organizations by use of entrepreneurial talents (Pinchot, 1985).

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