

From niche to volume with integrity and trust

FULL CASE STUDY REPORT

PolarShiitake - Finland

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POLAR SHIITAKE

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Abstract: PolarShiitake Ltd. is a family enterprise cultivating organic shiitake mushrooms (*Lentinus edodes*) in the pure natural environment in northern Carelia, Finland. It is a small family enterprise with very specific niche product, the shiitake mushrooms. The enterprise was founded in 1999, but the history of PolarShiitake dates back to 1984, when shiitake production started in the same location in Eastern Finland. The production has continued in Rääkkylä without interruption since then.

The initial product of PolarShiitake was fresh organic shiitake mushrooms, and this is still the main product. There are different packaging sizes and different types of fresh shiitake. Dried shiitake powder and dried slices as well as substrate for mushroom growing in households are nowadays also sold, but these are subordinate. The production volume is of the order 70 000 kilos fresh mushrooms a year, which is about 30% of the Finnish Shiitake production. The yearly turnover is under 1 million Euros, presently of the order of 600 000 Euros. The great majority of the products are exported and sold in the central European market. Domestic customers are retailers and fine dining restaurants mainly in the capital region.

PolarShiitake is an interesting enterprise as it illustrates the significance of co-operation with the research institutes as one possible development trajectory for small producers. It also provides an example in overcoming the difficulties the independent small producers have in the highly competitive and concentrated Finnish food markets.

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Most local organic market chains have inherent problems in moving from niche to volume, and mainstream large-scale market chains have inherent difficulties in securing and advancing organic values. The project “Healthy Growth: from niche to volume with integrity and trust” investigated a range of successful mid-scale organic value chains in order to learn how they are able to combine volume and values, and to use this knowledge to support the further development of organic businesses, networks and initiatives. Research teams from ten European countries contributed with 20 case studies. More information and documentation can be found at: www.healthygrowth.eu

1 Introduction

PolarShiitake Ltd. is a family enterprise cultivating organic shiitake mushrooms (*Lentinus edodes*) in the pure natural environment in northern Carelia, Finland. It is a small family enterprise with very specific production range: fresh shiitake mushrooms, dried shiitake powder and slices, and the substrate for mushroom growing for in household customers. The enterprise has today 6,5 permanent employees. It is a good number for a private enterprise in a small municipality with high unemployment rate and high percentage of population being beyond the labour force.

The production volume is of the order 70 000 kilos fresh mushrooms a year or about 30% of the Finnish Shiitake production. The yearly turnover is under 1 million Euros, presently the turnover is of the order of 600 000 Euros.

PolarShiitake is interesting in view of the HealthyGrowth aims in several respects: The enterprise has a fairly long history and it started practically from nil, since the knowledge on shiitake production was at that time very feeble. The production site is located in a remote and sparsely populated area far from the markets, but production the machinery of PolarShiitake is the largest among the wood-based mushroom producers in Europe. With own laboratory at the production site the know-how of the whole production chain is maintained and further developed. PolarShiitake was from the beginning founded on the environmentally friendly organic idea, and only local resources are used as production inputs. The enterprise is also an example of the difficulties, the SME:s may have in getting foothold in the domestic markets.

The product range is very specific and extremely limited. PolarShiitake mushrooms represent typical high quality and high-price niche product. Despite the fact that mushrooms have always been an important part of the people in the region, there are almost no local markets for the cultivated shiitake. This is because the local consumption is confined to self-picked wild mushrooms, the picking being supported by the so called everyman's right which entitles everyone to gather wild berries, mushrooms and herbs (as well as to angle and to ice fish). The tradition of gathering and preserving wild mushrooms is firmly rooted among the Finns, and the tradition is especially strong in eastern Finland. Cultivated mushrooms are a fairly new phenomenon in Finland, and their consumers are mostly city people. The consumers of the PolarShiitake mushrooms are in central Europe, and 90% of the production is exported to central Europe. The demand for the product has continuously grown and at times it exceeds the production capacity. The domestic buyers are mainly in the capital area, and major part ends up to the consumers via fine dining restaurants.

2 Case study approach, materials and methods

General information on the enterprise, its history, values, philosophy and products were obtained from the enterprise's homepage (<http://www.polarshiitake.com/en/>). More detailed information on the enterprise was obtained from the publically available documents of the Finnish register of enterprises. Regarding numeric data, the managing director provided additional information when commenting the manuscript of the report.

The outsider view of the enterprise specifically on the development of the company and on its significance to regional economy as well as on the research related to the company's development was captured from the representatives of the district trade promoters and from the reports dealing with developing the production and marketing of cultivated mushrooms in Finland (Junnila 2006, KETI 2008, Siirilä et al. 2009, KETI 2011, Väisänen 2012, Tomperi 2013).

Other sources for the outsider representation are the articles published in the newspapers and radio news. These were found via Internet searches.

An interview with the managing director of the company provided further information on the development and on co-operation partners as well as information on the organization, on the values and their justification, challenges and strengths of the supply chain, markets and marketing strategy and future perspectives. In order to improve the outcome of the interview the questions were sent about a week in advance to the managing director together with a short summary of the data on the enterprise compiled by that time from other sources. This allowed the interviewee to become acquainted with the topics to be discussed in the interview occasion and eventually to complement and correct the information. The interview followed by and large the same order as the questions in the template designed for the HealthyGrowth case studies.

The interview took place in May 26th 2014 in Rääkkylä at the production site. The interviewee was the managing director of PolarShiitake, a middle aged man, an auto mechanic by education and with previous working experience from that field. He has been involved with the enterprise from the beginning and has obtained the knowledge on shiitake and its cultivation as well as on marketing from praxis and from co-operation with the researchers and with other mushroom growers.

The purpose of the 2.5 hours interview was to confirm the preliminary information obtained by the time of the interview occasion from the various sources and to retrieve additional information especially in view of the analytical perspectives of the HealthyGrowth project. The interview was tape recorded. During the discussion, free association was encouraged, and the same topics appeared in different contexts. The recording was, therefore, analysed with qualitative data software (Atlas.ti) by looking for references to the development history, research, future perspectives, co-operation, customers, supply chain, value, economic performance, support, competition, communication, and coding the quotes accordingly.

3 Finland, Rääkkylä, PolarShiitake – the national context

PolarShiitake is located in the Rääkkylä municipality in the Northern Carelia province, eastern Finland (see Figure 1.). The province is close to the Russian border and it belongs to the remote areas in Finland. Typologically the municipality represents sparsely populated rural municipalities, the other municipal types being core rural areas, urban adjacent rural areas and urban areas (Malinen et al. 2006).

Like in the whole province of northern Carelia the population development in Rääkkylä has long been declining: in 1980 there were 4063 inhabitants, and today the number is 2470, the population density being presently 3.6 inhabitants per square kilometre. The age structure of the population is unfavourable. The share of the population in active working age (15-64 years) is only 38% while the share in average in Finland is 64%. The level of education of the population is somewhat lower than in average in Finland - in Rääkkylä nearly 40% of the people have only basic education, whereas the average in Finland is 31%. The unemployment rate is about 17%, which is much higher than the average (11%) in Finland (Statistics Finland 2015). The economic structure is strongly biased towards primary production. It provides about 34.5% of the jobs for the inhabitants; the average in Finland being 3.7%. The service sector employs 49.5% and the processing sector 13.5% of the labor force.

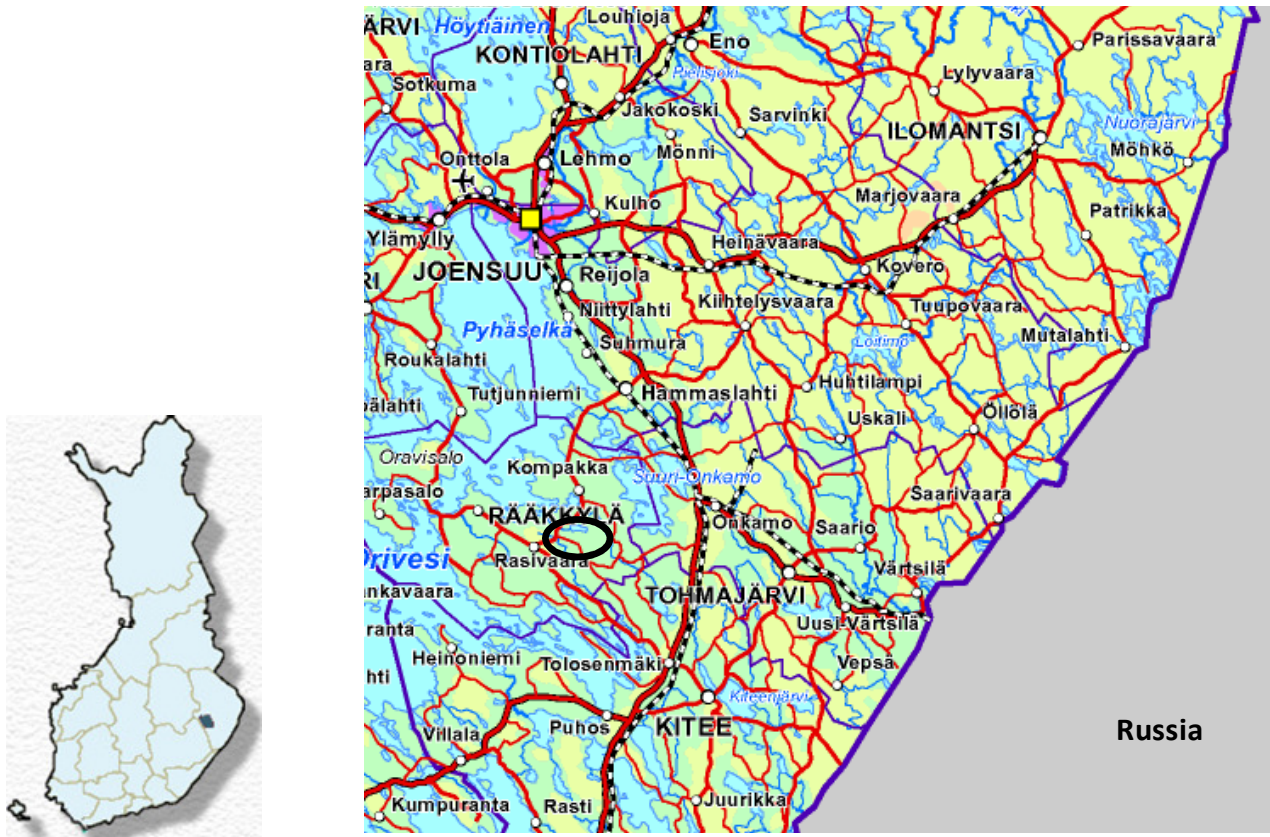


Figure 1. The geographic location of the PolarShiitake enterprise in the Rääkkylä municipality, Northern Carelia, Finland.

The imago of small municipalities with high percentage of population being beyond the labour force and with high unemployment rate is not very attractive. The attractiveness of Rääkkylä suffers also from the remote location. In such situations, private enterprises are especially important drivers for local economy. This is the case with PolarShiitake, too, and the municipality has supported the foundation of the enterprise by constructing the necessary production facilities.

Finland has been the pioneer in shiitake production in Europe, and PolarShiitake has a central role in this. The long experience of the enterprise in shiitake cultivation dates back to the mid 1980'ies. An intimate co-operation with the research institutions has been crucial for the development. The mushroom production started as a co-operation together with the VTT - Technical Research Centre of Finland. The researchers had developed the substrate presently used in shiitake production, and potential mushroom producers in Finland were needed to test and to further develop the substrate.

The significance of PolarShiitake to local community is not only through employment, but also because along with the enterprise nationally important research and development of shiitake production has been brought to the region. This research and development has contributed to improving the imago the municipality, which it has because of its remote location and unfavourable population structure.

4 Overview of PolarShiitake

<u>Date of foundation:</u>	1999 (the predecessor 1984)
<u>Products:</u>	Fresh shiitake, dried powder and slices, growth substrate
<u>Main actor:</u>	Among the lead shiitake producers in Finland
<u>Legal form:</u>	Public limited company
<u>Number of employees:</u>	6.5 permanent workers, additional seasonal workers
<u>Distribution channels:</u>	Restaurants and retailers in central Europe and in Finland
<u>Google hits:</u>	2160 (6 May 2015)
<u>Home page:</u>	www.polarshiitake.com
<u>Turnover:</u>	600.000 € a year

4.1 Presentation and trajectory

Towards the end of the 1980ies there was keen interest in shiitake cultivation in Finland, and there were 15 producers. The vision was to increase the number of the producers to about 50 within a period of five years. The number increased rapidly in the beginning, but most of the shiitake producers gave up after the first few years. In recent years, the interest has again started to grow but, so far, only a couple new enterprises have been founded. Today there are only five shiitake producers, and all in all there are today 12 producers of cultivated mushrooms in Finland. The total production volume is 1620 tons a year, most of this being champignons. The share of the shiitake is about 14% or 233 tons.

PolarShiitake was founded in 1999, but the history of the company dates back to 1984, when two farmer families started the shiitake production in Rääkkylä and founded the enterprise Itä-Suomen shiitake (Eastern Finland Shiitake Ltd.). The initiative for mushroom production was brought about by the Finnish Shiitake Association. The interest in shiitake cultivation had started already earlier at the VTT - Technical Research Centre of Finland, where the substrate for shiitake cultivation had been developed during the 1980'ies. The Finnish Shiitake Association bought the license from the VTT, and started to look for potential mushroom producers in rural areas of Finland to test and to further develop the substrate.

Eastern Finland Shiitake was among the pioneers in shiitake production, and the company still exists, even though the cultivation activity was transferred to PolarShiitake in 1999, when this enterprise was founded. The Eastern Finland Shiitake facilities are now used for pre-cultivation stage. Thus, the production in Rääkkylä has continued without interruption since the mid 1980'ies. The local municipal authorities have supported the activity by constructing the production hall, which is hired out to the enterprise. Today the enterprise is among the largest and, in terms of technology and cultivation methods, the most modern wood-based shiitake producers in Europe. The company exports its products to Germany, Holland, Sweden, Norway and Belgium. Recent new countries where the company exports mushrooms are France and Russia.

Initially the production of the substrate for mushroom cultivation and the cultivation itself were confined to two separate enterprises, Polar Log Ltd. and Eastern Finland Shiitake Ltd., respectively. In 1992 Eastern Finland Shiitake became the contracting producer for Mykora, the major producer of cultivated mushrooms in Finland. With the generation change in 1999 the new enterprise PolarShiitake was formed and it took over the cultivation. The pre-cultivation part of the process still takes place in the facility of Eastern Finland Shiitake. The co-operation with Mykora continued until 2007. At that time Polar Log Ltd. was fused into PolarShiitake, and the enterprise took over the selling of own products, whereby the Mykora co-operation came to an end.

4.2 Basic facts

The production range of PolarShiitake has not changed, the initial product was fresh organic shiitake mushrooms, and this is still the main product. There are different packaging sizes and different types of fresh shiitake (premium, mini, shiitake for catering sector and for barbecue). Dried shiitake powder and dried slices as well as substrate for mushroom growing in households are nowadays also sold, but these are subordinate.

The VTT developed the technology for shiitake production in the beginning of 1980'ies, and PolarShiitake has developed the proto type method towards mass production. The production capacity has increased in pace with developing of the methods. At the start Eastern Finland Shiitake produced 1000 substrates a week, and today PolarShiitake produces 5000 substrates a day.

The production volume is of the order 70 000 kilos fresh mushrooms a year, which is about 30% of the Finnish shiitake production, most of which is today of organic produce and certified by organic standards. The yearly turnover of PolarShiitake is under 1 million Euros, presently of the order of 600 000 Euros. The producer price has remained fairly stable over the past 10 years, neither have there been noteworthy changes in the consumer price.

The economic situation of PolarShiitake was difficult during the first ten years of the existence, and the company has struggled for survival. The reasons are, on the one hand, the heavily fluctuating market situation, which is the major concern of all mushroom producers in Finland. On the other hand, with the focus on developing the cultivation methods, PolarShiitake has been forced to invest in know-how and in production machinery. Implementation of the production process has essentially implied learning by doing, and it has been costly in terms of person years. Roughly speaking, the net profit of the enterprise was negative during the first 10 years - during 2000-2010 the combined net profit was 1.5 million Euros negative. This shows the costs of the pioneering work.

The existence has been possible, because of the strong focus on R&D which has been carried out together with various partners relying on project-based money. Economic support for the development and investment has been obtained from the regional Centre of Economic Development, Transport and Environment. The municipality has also supported the company by providing the required share of the municipal financing for the projects. In the mid 2000, when the company struggled with economic insecurity, the municipality was patient with the back rent, and a reasonable payment schedule was negotiated. In addition, an entrepreneurial godparent for was provided for the company to help through the most critical period. Only the past few years have been profitable, and the company has been classified as creditworthy during the past three years.

and via two sub trade names - Polar Organics and Finnпилtz- focusing on exports, the latter specifically on selling to the German-speaking areas in Europe. The trucks drive directly from the production site to the five customers abroad in Germany, the Netherlands and Belgium. The internet sale is mainly substrates for home-growing.

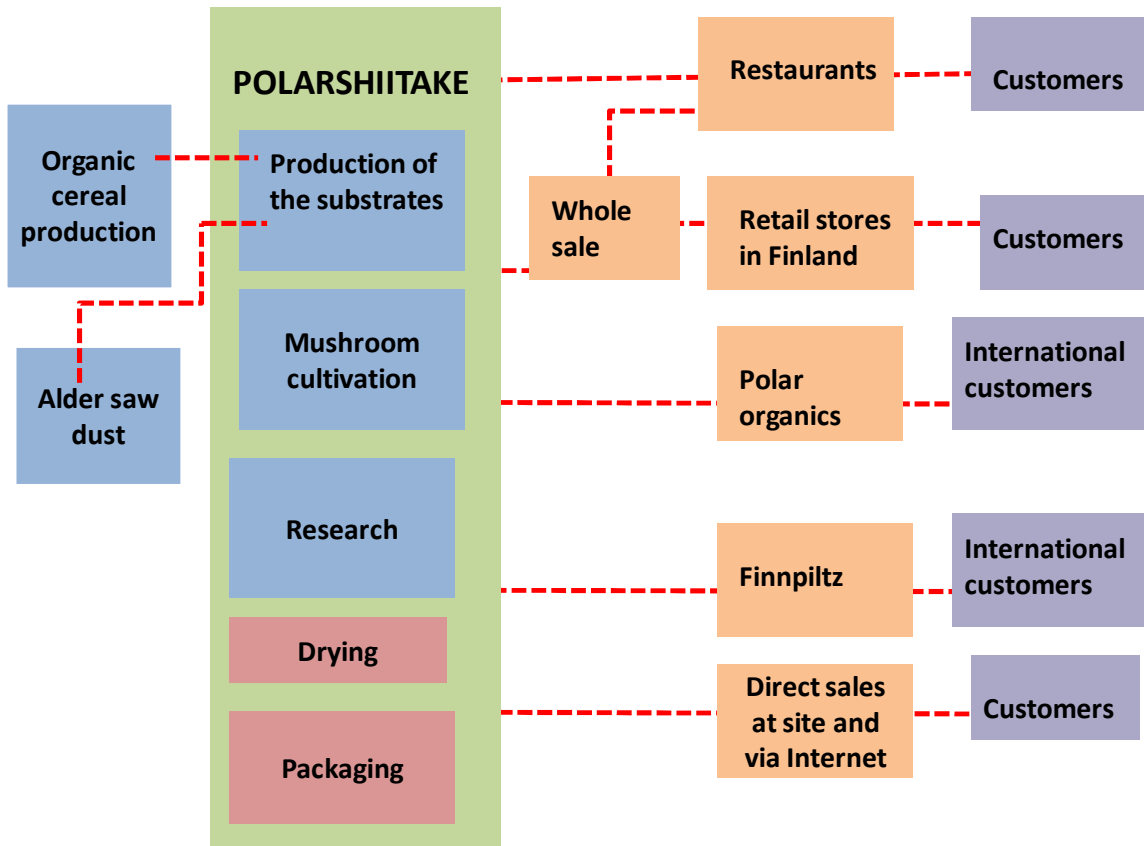


Figure 2. The Stakeholder network of PolarShiitake.

5. Analytical perspectives

5.1 Organisation and governance

The enterprise is a public limited company. There are six members in the company board. The managing director and the chair of the board alone or two board members together are authorized to represent the enterprise and to sign the documents.

The share capital is 18 200 Euros, and the 65 500 shares are owned by 18 share holders, all of them are people from the Northern Carelia region. The majority of the shares is owned by the family members. The retention of the ownership is secured by the redemption clause, which entitles the share holders to redeem the shares before the enterprise in case shares are transferred to a new owner outside the enterprise.

After the shiitake production had become established in Rääkkylä, the Eastern Finland Shiitake became a subcontractor for Mykora, the major actor within the field of cultivated mushrooms in Finland. The co-operation started in 1992 and continued through the change in the activity from Eastern Finland Shiitake to PolarShiitake in 1999. The strategy was formulated together with Mykora, and Mykora also organised the marketing and sales. The mushrooms were sold under the trade name used by Mykora (PolarShiitake Champ). At that time Mykora was owned by Kemira, a state-owned fertilizer company. The situation changed, when Kemira sold Mykora to a private entrepreneur. It soon became clear for the PolarShiitake representatives, that as a subcontractor the needs of PolarShiitake were not adequately accounted for and that the Mykora co-operation did no longer offer competitive benefits for the company. The nearly 20 year long Mykora co-operation ended in 2007.

The strategic decisions are made by the company board. The company board is mainly concerned with the economic matters. As a small family enterprise there are no conflicting interests. The share holders outside the family have not interfered very much with strategic planning and managing. Since all owners are local people and many of them are also relatives to each other, informal interpersonal discussions are important in view of the company's practicalities, policy and plans. Internally, the business plans have naturally been questioned especially during the first ten years of the company's existence with constant loss-making turnover.

The core values of the company are high quality products, continuous development, environmentally friendly production and reliance on local resources. Because of the poor demand in the domestic markets, PolarShiitake has determined focused on exporting the products to central Europe. The producer price for exported shiitake is 30% higher compared to that paid in Finland. The interest in export stems already from the times of Mykora co-operation. Mykora had already markets for its mushrooms in Europe, and the co-operation had thus prepared the ground for exports.

The trigger to start shiitake production Rääkkylä was the interest of the research field in mushroom cultivation in the 1980ies. From the very beginning the company has aimed at commercial production. The task was, therefore, to further elaborate the proto type technology for shiitake production towards mass production. The proto type technology had been developed by VTT – State Technology Research Institute in the beginning of the 1980'ies. The development work has required large investments both in terms of the production machinery as well as in terms of costly pioneering work to increase the know-how. The pre-requisite for the existence of the company has been the long-term strategic co-operation with the research institutes as well as the development and investment subsidies from the regional Centre of Economic Development, Transport and Environment. The R&D is based on few years' project contracts.

The main strategic partner in R&D is the University of Eastern Finland in Joensuu. The partnership in the field of mushroom cultivation has started in the beginning of 2000. Today the co-operation has expanded so as to comprise more comprehensively the large field of bio-economy, and the partners now explore the possibilities of exploiting the side product of the cultivation (used substrates) in bio-energy production. The aim is energy self-sufficient organic production. This, however, requires still a lot of research and technological development.

University of Kuopio has been active in research on the health impacts of shiitake. Further research has been made together with the University of Helsinki, with the Northern Carelian Health Centre and with the National Centre of Health and Welfare. University of Applied Sciences in Joensuu has contributed to the development of the production technology.

The production inputs, cereal and alder saw dust, are bought from the local entrepreneurs at the market price. The electricity is also based on the renewable energy sources from the region. 90% of the products are sold to the established customers abroad. There are no long-term contracts, but the customers' demand needs to be known few months ahead so as to accommodate the production volume accordingly.

Getting foothold for own trade name in the domestic markets has been difficult. During the Mykora co-operation, the products were sold under the Mykora trade name via one of the two major distribution channels existing in the heavily centralized Finnish food markets. When subcontracting to Mykora ended, this distribution channel was no longer available, and the company had to find alternative distribution channels for the domestic markets. Today the products are distributed via two small wholesales mainly to the restaurants and to some retail stores in the capital area. There are no long term contracts with the domestic customers, either. The customers inform about their needs and specific requirements, and the products are sold on the basis of the company's offer. Today the selling procedure and the customers are well established; new customers were actively sought last in 2007.

The influence of the public policies is mainly through the food legislation and through the regulations regarding organic production, and their control. The EU directive on cold transports has been experienced as difficult, because it extends the time used for transports, and regarding the quality of fresh products the time frame from harvesting to the customer is critical.

In the early 2000 there was faith in mushroom cultivation, and it was considered as one means of contributing to rural livelihoods in remote regions of Finland. At that time the R&D on mushroom cultivation was at its peak and there were serious trials to encourage new producers to enter the field. In 2002-2006 a four year project aiming at boosting the mushroom knowledge among the producers and the consumers was carried out by the regional authorities in co-operation with the research institutes. Within the frame of that project a number of various kind stakeholder occasions were organized in view of the different target groups from entrepreneurs to consumers. Knowledge was provided on mushroom entrepreneurship, on health impacts and on use of mushrooms. Seminars and workshops on networking, know-how and cultivation were organized for the producers. The topic received also a lot attention in the media. These activities, however, soon waned after the project was closed, and today this kind of interaction of the research with (potential) actors is only sporadic. Partly the reason is the fact, that in rural areas, there is no local demand for the products; people are used to exploit the forest mushrooms. It would have required a lot of entrepreneurial know-how and courage to establish production with no market perspectives in own area. It is also a question of money: the development projects are fairly short, a couple years at most. As long as the project is running the topic receives a lot of publicity, and things appear to work well. If proper attention is not paid to the continuation of the activities by gradually shifting the responsibility from project workers and researchers over to the local practitioners, the interest withers away soon after the project funding stops. Unfortunately this is typically happens with the R&D projects.

In Finland, there is an association for the shiitake producers. With privatization of Mykora - the major mushroom producer - in the mid 2000, the smaller producers felt that Mykoras position in the association became too decisive, and the smaller producers have gradually left the association. On an informal basis outside the association there have been discussions among the producers on developing exchange of cultivation knowledge and on common marketing by sharing e.g. information on the customers. There are possibilities to strengthen this sort of co-operation. If the production capacity of PolarShiitake is increased, this kind of co-operation is

likely to bring about benefits also for the company. The producers have, however, not yet organized outside the association from which they withdrew.

5.2 Business and management logics: the process behind ensuring economic performance and efficiency in mid-scale food value chains

The enterprise is a public limited company. According to the corporate charter, the field of business of the enterprise is retail and wholesale of fresh and processed food items, import and export of food items, processing of food items, production and selling of mushroom mycelia, cultivation of mushrooms, mushroom brokerage, extension and consulting of the mushroom production, sales and marketing and research and development related to mushroom cultivation. Despite of the broad definition referring to food items, the focus of PolarShiitake is specifically fresh shiitake mushrooms, and it is a producer enterprise.

The company is not seeking expansion at any cost. The emphases are high quality of the products, environmentally friendly organic production, expertise in know-how and the use of local resources:

“The price-competiveness is zero, our mushrooms are the most expensive in Europe. We sell quality”.

“Giving up organic would halve the price in Europe”.

“I do not sell the know-how; it is our most important capital”.

“Only oil is imported, from the domestic point of view the balance of foreign trade is in order”.

This orientation justifies the high price of the products. The price is indeed high compared to that of other producers: fourfold compared to the shiitake produced in China and even 30% higher than the shiitake produced in the Netherlands.

The strategy of the company is very much tied to the pioneering work, which has been necessary to develop the proto type cultivation system into mass production and to a profitable business. Research and development are, therefore, at the core of the company's activities, and co-operation with research and extension organizations has been an essential ingredient in the company's history.

The R&D contacts are still important strategic partners, and the company is open for the new innovations, which can be brought about by R&D projects. At the moment, the company and research have the comprehensive concept of bio-economy as the common denominator. The partners' interests in co-operation have become more comprehensive so as to deal with the role of bio-economy in regional development, one of the new possible topics being production of renewable energy from the side flows - the used substrates - of mushroom cultivation.

The production has not been profitable during the long pioneering years. The major concern has, therefore, been how to secure the economic basis for developing the cultivation technology and for overall survival of the company. An important prerequisite for that have been good and functioning relations with local and regional authorities. Funding has been received for developing the cultivation technology and for investments in machinery.

Investment and development support has been obtained from the regional Centre of Economic Development, Transport and Environment. The production hall used by the company is owned by the municipality and the company is the tenant. During the economically critical times, the company was not able to pay the rent and the debt to the municipality grew considerably. The municipality was willing to negotiate a reasonable schedule for paying the back rent, and the services of a mentor or an “entrepreneur godparent” appointed by the regional authorities have helped the company through most critical period. The municipality has also contributed to the funding of the R&D projects focusing on mushroom cultivation methods by providing the required share of municipal financing for the projects.

PolarShiitake acts on its own and has own business strategy. There is neither common strategic planning with other actors along the supply chain nor long-term contracts with the customers. The relations are pure business relations, and the products are sold on demand. The competitiveness of the business is based on the high quality and organic certification, not on price. The transports have been externalized to an independent entrepreneur. The customers are wholesale companies, and they pay the premium price negotiated with the producer. The retail and the restaurants independently set the price which the end customers pay. Fairness along the chain is not an issue that has been discussed with the chain members.

A written business plan was not available, it is under reformulation. The guiding principle (motto) is “Finnishness” – it means reliability, i.e. the acts are in line with what is said. The business goals and the interviewee’s ranking of them are listed in Table 2.

Table 2. The business goals of PolarShiitake, and their importance as ranked by the interviewee. Ranking scale: 1= high priority objective... 2, 3, 4, 5= little importance

Goals	Ranking
Profitability:	1
Employee retention.	4
Growth:	1
Maintain a solid financial base:	1
Altruistic objectives:	
o Ensuring workers’ existence	3
o Contribution to income and employment in the region	1
o Protection of the natural environment	3
o Animal welfare	not applicable
o Realising the “organic idea”	2
o Social care	4
Other: High level expertise in know-how	1

Profitability and credit-worthiness of the company have been finally reached after a decade-long struggle in a fluctuating market situation. PolarShiitake is today among the top organic shiitake producers in Europe, and maintaining the stabilized economic situation is the prerequisite to stay there. This can only be accomplished by keeping the high quality of the products, and it requires extreme carefulness in cultivation:

“4% mistake in the procedure means 90% loss in turnover”.

Due to the social security costs and strong labour unions, the labour costs in Finland are fairly high. Location in a remote area in Finland is, on the one hand, an economic restriction because of the long transports and because it presents an extra risk for the financiers. On the other hand, northern organic is the main marketing argument. The location thus, justifies the price premium.

The company aims at growth. However, with the present production facilities the possibilities to increase the production volume are restricted, and it is extremely difficult to find financing to invest in new production hall. Even today the facilities would allow doubling the production volumes, but the bottle neck is the too small premises for the pre-cultivation stage.

The personnel issues are not among the key concerns:

“The employees have to please the mushrooms”.

The employees are local people. No extra benefits are offered to them, their working contracts are valid for the time being, and the general collective labor agreement dictates the salaries and other working conditions. In high season during the late fall, additional workers are temporarily hired from a company which is specialised in providing these kinds of personnel services.

Retention of the employees is not among the key concerns. This is because in the region, where the unemployment rate is high the workers want to keep their jobs, and the entrepreneur need not to worry about that. On the other hand, contribution to regional economy was ranked high: the company relies on local resources and on local working force. The production inputs, cereal and alder saw dust for the growth substrate, are bought from the local entrepreneurs at the market price. Also the electricity is based on the renewable energy sources of the region.

In case of mushroom cultivation, protection of the environment is actually not an issue, because the production does not require farm land. Farm land is needed only for production of cereal, which is the only organic input. The straw from cereal production is important in view of the soil quality, and it is ploughed into the soil in farms. Organic certification in shiitake production requires only that the cereal used in the growth substrate is produced according to the organic standards. The other component of the substrate is alder saw dust, and alder is not a product of intensive forestry, but it is obtained from the naturally growing habitats and there is no organic certification for it. Organic labelling is, however, very important as the marketing argument, but it does not have very much to do with environmental impact of the production.

With the heavy emphasis on the specific know-how, the strategy of PolarShiitake could be described as an “expertise strategy”. Shiitake cultivation is very specific. The substrate was originally developed in the 1980'ies by the VTT - Technical Research Centre of Finland, who sold the license for the Finnish Shiitake Association. PolarShiitake has further developed the production method and technology. The know-how is very specific, and there is no danger that that it could be transferred elsewhere without practical experience. With focus on non-price competition the company strategy is clearly a differentiation strategy. This strategic choice is considered as feasible, and is justified as follows:

“The mushroom market in Europe is about 1 billion kilos (10⁹kilos), and apparently there is also a narrow market for the expensive special mushrooms of Polar Shitake”.

So far the continuous demand supports the strategic choices. Today the sales cover the costs, and the difficulties have turned into the strengths. The strategic focii listed in Table 3 and the management instruments that are used (Table 4) reflect the business goals and the strategy. The ranking in the tables is made by the interviewee.

Table 3. The strategic focii and their importance as ranked by the interviewee. Ranking scale: 1= high priority objective... 2, 3, 4, 5= little importance

Business/management strategies	Ranking
○ Supplying a particularly high product	1
○ Good customer service: This helps to retain clients and generate lasting revenue	2
○ Maintaining good and trust-based long-term business relationships	2
○ Product differentiation	1
○ Building on a better understanding of consumer trends	5
○ New/alternative marketing channels	3
○ Maintaining local/regional production base	5
○ Reduction of transports	1
○ Ensuring transparency	1
○ Professionalization of management	2
○ Maintaining of social standards	2
○ Collaboration along chain and with market partners, developing business partnerships	1
○ Promotion of innovation	5
○ Networking	2
○ Improving environmental performance	5
○ Preparing the business/initiative for growth	1
○ Creating a dynamic organization that is prepared to meet the challenge	1
○ Maintaining the expertise in know-how	1

The interviewee did not consider the maintenance of local/regional production base important at all. Even though the production will stay in Finland also in future, the present remote location in Finland is really a problem because of the long transport distances and because of the risks it implies for the investments. Some other production site would, therefore, be preferable. Because of the high transport costs reduction of transports was ranked very high, and this requires extremely careful logistic planning. Transparency referring to the origin of the product was also ranked high. Regarding the innovations, the interviewee is satisfied with the present choice, i.e. cultivation of fresh mushrooms. At most, he could think of expanding the repertoire of the cultivated specii towards those naturally growing in Finland. He is not interested in developing further processed products, but would like to co-operate with another independent entrepreneur, who would focus on product development. In addition, potential innovations may come about via co-operation with the R&D partners.

Table 4. The management instruments of PolarShiitake and their importance ranked from 1 to 5. Ranking scale: 1= high priority objective... 2, 3, 4, 5= little importance.

Management instruments	Ranking
○ Quality assurance systems	4
○ Quality testing (own laboratory)	3
○ Regular negotiation of 'fair' prices	2
○ Top-up of consumer price transmitted to local producer	1
○ Competition analysis to better understand where the products rank in the marketplace	3
○ Preference for local chain partners	3
○ Transparency of product origin	1
○ Forward contracting of supply volumes	4
○ Payment within a few days	2
○ Supply up to needs of chain partner	1
○ Control of social standards	4
○ Joint marketing	2
○ Chain partner meetings and cultural or regional events	5
○ Knowledge transfer	1
○ Qualification measures	1
○ Sharing stalls at a fair, joined organisation/sponsoring of seminars/events	5
○ Animal welfare standards, definition, control, communication	not applicable
○ Open communication within the organisation	1
○ Flat hierarchies	2
○ Clear responsibilities on each level	1
○ Definition of social standards plus controls	4
○ Kindergarten, health care	5
○ Informative attitude	3
○ Profiting from own production	5
○ Annual team building events	4
○ Regular sponsoring of events/projects in the community	5
○ Other: R&D funding	1

Own laboratory has been important during the development work. Today it is used to explore cultivation of new mushroom species and to test the product quality in view of the customers' satisfaction. The price the end customers pay is fairly high, because the products are sold in restaurants and in retail as exclusive products. Negotiating fair producer price is important for the producer. Payment within days is also ranked high. The salaries, the rent and the logistics must be paid without delays.

In many aspects the strategy of PolarShiitake is based on the present situation: in an area with high unemployment the labour force is not a problem, and workers need not to be persuaded with extra benefits to stay. There is a high demand for the products, and the problem is rather the limited production capacity than too small customer basis. E.g. last year the marketing costs were zero, but the export increased by 38% simply, because the company gave up the export to Sweden and Norway and focused on the customers in central Europe. Marketing efforts, new distribution channels or product differentiation are therefore not considered as necessary, and there is nobody who focuses specifically on marketing.

With the short supply chain it would be possible to improve the co-operation in many ways, and eventually gain benefits. So far, the chain partners have been satisfied with the present arrangements and plans to change the situation are hanging in the air. The sales and revenue

could be increased by providing further processed products to the markets. Since the production capacity restricts the expansion, these possibilities have not been seriously considered, although potential partners have expressed their interest for such co-operation. In any case, even in future, PolarShiitake is going to focus on mushroom cultivation, and other partners would be responsible for further processing of the products.

5.3 The balance between quality differentiation, volume and economic performance

PolarShiitake Ltd. cultivates organic pure shiitake. The company is among the largest and, in terms of technology and cultivation methods, the most modern wood-based shiitake producers in Europe. The core values of the company are quality, continuous development and environmentally friendly production.

The product differentiation consists of the high quality, environmentally friendly organic production, expertise in know-how and of the use of local resources.

This orientation justifies the high price of the products. The company does not compete with the price, which is indeed high compared to that of other producers: fourfold compared to the shiitake produced in China and even 30% higher than the shiitake produced in the Netherlands.

The company has faith in organic production:

“Every food scandal improves the position of organic products in the highly competitive food markets”.

Labeling the products as organic secures that the customers in central Europe are willing to pay the extra premium. Without organic certification the price would be halved. The managing director recognizes the need to grow in order to stay on the markets. At the moment the company is, however, not seeking expansion. This is because with the present cultivation premises, the company's production capacity is limited. The company has long struggled with economic difficulties and has become profitable only over the past few years. Constructing production site in a remote area is a risky business, because nobody is interested in buildings if the shiitake production would turn out to be unprofitable. It is, therefore, difficult to find investment financing for new production buildings.

In view of the future, it is realized that, when new mushroom producers come to the market and the competition increases, growth is necessary. When PolarShiitake started with focus on exports, a Finnish consulting enterprise clarified the market situation in Europe and concluded that there is no demand for organic shiitake. It, however, soon turned out, that there was no supply of organic shiitake, and PolarShiitake got into the markets. Today there are several other organic producers, too.

Focus on exports stems from the fact that the European customers pay 30% higher price than the price paid in the domestic markets. On the other hand, part of the premium is lost, because the costs of long truck transports are also high.

Another reason for focusing on exports is that the food markets in Finland are not very attractive to run competitive and profitable business. With only 5 million inhabitants in the whole country the consumer basis is very small. The country is also sparsely populated, and the long transport distances increase the costs. In addition, the food business is heavily concentrated in Finland. The two major actors have 80 % of the markets. These actors have

own wholesale, own trade marks and own distribution systems. With the dominating market position they have the say which products end up to the shelves of the retail stores and on what price. Without agreements with either one of the major actors it is very difficult to get new products into the market. There is little room for alternative products, and the economic situation of the small producers is thus, insecure and often very difficult. This is accentuated in the labile mushroom business (one of the few Finnish producers went bankrupt last year).

PolarShiitake has tried to gain footing for own trade mark via these mainstream channels, and even promised to take the responsibility for the unsold products. The company gave up after three years' useless trials, and looked for other distribution channels. Today the domestic sales of PolarShiitake take place via two small independent wholesales which focus on niche products that are sold mainly in the capital area.

The company has chosen to have a very specific product with research based evidence on the health claims, and to focus on exports. The main marketing argument is the high standard of the products, which justifies the fourfold price compared to the shiitake imported to Europe from Asia:

“With the Chinese imports the buyer also gets the poisons”.

The success of Polar Shiitake in the European markets due to the high quality and organic certification as well as from the imago of the production site in the midst of unpolluted nature of Eastern Finland. Being so, establishing a production site in central Europe, where the markets are, would imply risks because the marketing argument of unpolluted production environment would be lost.

For many customers, it is only the quality that is the important issue, not organic certification *per se*. The high quality of the PolarShiitake mushrooms stems from the carefully monitored production process. It is absolutely essential to keep the standard. The European customers have been satisfied with the quality of the products, and today the demand exceeds the production capacity of the company. With increased number of suppliers of high quality shiitake in recent years in Europe, the pressure to grow increases, as the present customers now have alternatives, if PolarShiitake fails in supply.

Over the years, the main concern has been the developing of the cultivation technology from the initial proto type production system into a system enabling mass production. This has required a lot of R&D carried out together with research organizations and project based funding. Maintaining the expertise in know-how is an essential part of the PolarShiitake also in future. R&D activity and co-operation with research institutes will remain as an important part of the company's strategy.

5.4 Communication of values and qualities among the members of the food chain

A schematic picture on the communication and its frequency among the stakeholders is shown in Figure 3. Generally speaking, knowledge on the ways, frequency and contents of communication is restricted to that between the company and the stakeholders, and little is known what is happening among the other stake holders.

	Polarshiitake	Whole sale	Retail	Export contacts	Restaurants	Private customers	Logistics	Research, extension	Producer network
Polarshiitake		☐ ☎		☐ ☎		☎ Feed back via Internet	☎	☎ ☎ ☐	☎
Whole sale	☐ ☎		☐ ☎		☐ ☎				
Retail									
Export contacts	☐ ☎						☎		
Restaurants									
Private									
Logistics	☎								
Research, extension	☐ ☎ ☎								
Producer network	☎								

☎	personal
☐	= e-mail, letters
☎	= telephone

☐	weekly
☐	monthly
☐	yearly/more seldom

Figure 3. Communication and its frequency among the stakeholders of PolarShiitake.

PolarShiitake has direct communication with the research partners, with the international customers and with the wholesale. Although most of the domestic sales end up into the retail and restaurants in the capital area, there is no direct communication with the restaurants, but their demand is mediated via wholesalers. Neither is there direct communication with the retail stores, where part of the domestic sales takes place. Communication between PolarShiitake and retail, and PolarShiitake and restaurants is mediated by the two wholesales via which the retail stores and the restaurants make their orders.

In the small family enterprise informal interpersonal discussions are the most important and most often used internal way of communicating. The non-family members of the company board appear to trust the managing director, and they do not interfere very much with how the things are run.

The communication of PolarShiitake mainly takes place by means of e-mail and telephone. There is weekly direct communication with the international customers and the wholesalers. The communication with the business companies is about the customers' orders and about the supply volumes needed from PolarShiitake. The quality requirements of the fresh products are strict, and therefore the company is quickly informed about the improvement needs. Unlike the domestic customers, the foreign customers give also positive feed-back when they are satisfied.

The transports have been externalized for a logistics company, and each week there are trucks leaving the production site both to abroad and to the domestic customers. The discussions with the logistics company representatives deal mainly with practical arrangements of the

transports. The customers have occasionally complained about the quality that has suffered during the cold transports.

The communication with the R&D partners is active and especially intensive during the autumn, when the application period for funding new projects starts. The communication is about the possible project proposals and the suggestions of PolarShiitake are negotiated with the representatives of the University of Joensuu, which is the main research partner. The foundation of the projects often requires local resources and PolarShiitake is involved in negotiating about the funding possibilities with the municipal and regional authorities. In addition to the telephone and e-mail communication, the R&D negotiations require also face to face meetings. The managing director of PolarShiitake is also member of the steering board of some of the projects.

Today the company is part of a couple domestic marketing networks of SM producers focusing on organic, local and niche products; the Best of the Provinces¹, MakuMaku², Food from Finland³, Genuine Tastes focusing on local and regional products⁴, and the Karelia a la carte network focusing on North Karelian restaurants and companies in the fields of travel, food and handicraft⁵. These networks provide information on small and medium-sized businesses in the food sector. They are designed to help the customers find local food businesses and to find out what products are available in own region, and thus to improve the customer-meet-producers interface. These may have had some influence in increasing the reputation of the PolarShiitake products. One of the problems of these networks is that most of the enterprises listed focus on specific products and the customers usually seek places, where they can buy a range of different products. These networks are an additional marketing channel for the enterprises, but so far they are probably not very important. Even less so for PolarShiitake with the major marketing areas are in Europe.

Other than the marketing networks, there are almost no direct contacts with the end customers. For the customers, information is available from the company's Internet page, but the company is not active in social media:

“We have not seen as necessary to be active in social media. So far the customers have found us”.

The information on the origin of the product is mediated to the domestic retail consumers via the trade mark shown on the package. When buying the products from the retail, the customers are, thus, informed about their origin.

This information is not necessarily provided for the customers of the restaurants. Selling to the restaurants via branding has not been attempted. In the fine dining restaurants this information is available, but it is not necessarily further mediated to the customers, unless they specifically ask about the origin. If the customers ask, they get the information - this is the rule in the fine dining restaurants. However, there is no continuous and determined product information what so ever. This would require marketing know-how, and the managing director

¹ <http://www.maakuntienparhaat.fi/yritys.asp?YritysID=150>)

² <http://www.makumaku.fi/>

³ http://www.foodfromfinland.com/products/company_listing/organic?C=400&product_id=7

⁴ http://www.aitojamakuja.fi/index_eng.php?lang=eng

⁵ <http://www.kareliaalacarte.fi/en>

was not very interested in taking an initiative to change the situation. He appears to be satisfied as long as there is demand for the products and they are sold anyway.

So far product information targeted for the end customers has been restricted to that provided by the internet home page. The home page appears not to be very important, and little attention has been paid to develop it as means of communicating with the end customers.

Abroad the products are marketed as northern organic products or as organic products from Finland, not with the PolarShiitake trade mark. For the foreign customers, the contact information of PolarShiitake is available via the company's Internet page. It is not known what kind of information the European restaurants mediate to their customers. The company also sells growth substrates to Kiruna svampen, a mushroom producer in Sweden. This producer has a direct link on its net page to Polar Shiitake.

There is an association for the shiitake producers. Judged by the Internet search, the association appears not to function any longer. On an informal basis outside the association there have been discussions within the producer network on developing exchange of cultivation knowledge and on common marketing by sharing information on the customers. The topic has been discussed in passing and the ideas have been thrown into the air when several producers have physically met each other in connection with other professional occasions.

The marketing possibilities on the availability and values of the PolarShiitake products are not fully exploited. On an informal basis, there have been occasional discussions within the producer network on common marketing and on exchange of knowledge. In addition, a press release was once bought from a commercial enterprise, but this type of communication has remained as an isolated experiment. Although there is a clear possibility to improve the knowledge among the customers on the product and its values, the different actors do not cooperate in marketing. On the other hand, at the moment the demand for fresh shiitake is higher than the company's production capacity, and therefore there has been no need to increase the marketing efforts.

“With the present production capacity we don't need new customers”.

The way of communication has become established over the years. Since the content or the target groups of communication have not changed, and because new customers are not actively sought little attention is paid to develop the communication. The press release worked out by a professional, was a trial, but proved not to be successful and so it has not been repeated. The weekly telephone and/or e-mail contacts with the business partners are considered as satisfactory. The way of communicating on research matters is more focussed on personal face-to-face contacts, although many practical questions can be handled also via e-mail and telephone.

There is plenty room to develop communication towards the end customers. In order to develop product information the company could approach more actively also the retailers and restaurant keepers who sell their products, and who know the needs of their customers together with the fine dining restaurants. The managing director appeared not very interested in improving this kind of communication or in developing the marketing, because he is quite satisfied with how the situation is now.

5.5 Quality dimension of primary production and mediation through the chain

The values of PolarShiitake are organic high quality health promoting niche products, the production of which relies on production relying on local resources. The supply chain in organic shiitake production is very short. Organic labelling only requires that the cereal used in the growth substrate is produced according to the organic standards. The cereal is bought from the local organic farmers, whose production is under the control of organic production. The farmers do not contribute further to the qualities of the mushrooms.

The qualities are mediated by PolarShiitake to its wholesale customers, and PolarShiitake alone is the only actor who is involved in supporting the product quality. It requires that the process of cultivation, picking and packaging is carried out extremely carefully. The quality is guaranteed by own trade mark and PolarShiitake sets the price with which it sells the products to the domestic wholesalers and to the European customers. The price paid to the farmer is the market price of organic cereal. The company's relations with the farmer as well as with the wholesalers are mere economic business relations.

The retailers need to keep the standard in order to get the products sold to the end customers, but neither this aspect nor the consumer price have been discussed among the retailers and PolarShiitake. After delivered to the retailer, the quality is on his responsibility. PolarShiitake is not concerned with the retailer strategies, because the company does not sell the products directly to retail or restaurants, but uses middlemen. The restaurants also rely on the quality of the products used for the meals they serve to the customers. Unless the customers specifically ask about the origin, they probably do not even know where the mushrooms on their plate come from. The restaurant has the information, and if the customers ask, they are naturally informed.

PolarShiitake takes care that the wholesalers and foreign customers receive high quality products. In the retail stores, the customers see the Polar Shiitake trade mark on the package, but the managing director of PolarShiitake does not know, whether or not the stores and the restaurants actively promote the specificity of the PolarShiitake imago.

Within the chain the responsibilities on the product quality are, thus, isolated from each other, and securing the quality is considered only from own point of view. The producer PolarShiitake is careful with the freshness and hygiene in order to secure the health and taste claims, the retailers' acts are not known, nor those of the restaurants. In order to satisfy their customers they, of course, are concerned with the quality of the products they sell.

One of the critical steps in distribution of fresh products is the long distance truck transport. Here the EU regulations have been experienced as problematic, because they tend increase the time needed for transports. The costs of the long distance transports are also considerable and, therefore, more careful attention needs to be paid to organising the transports.

Continuous demand is the best control as well as the best incitement to keep the quality. This obviously has been successful. At the moment the bottle neck is the production capacity, and no further measures have been taken in order to improve the co-operation among the stakeholders.

5.6 Resilience of the business – long term perspective, change and social-ecological links

The business was founded as Eastern Finland Shiitake Ltd. in the mid 1980'ies. The production was small scale, and the focus was on domestic markets. PolarShiitake has developed the proto type cultivation technology towards mass production, and the production capacity has increased with developing the methods. At the start Eastern Finland Shiitake produced 1000 substrates a week and today PolarShiitake produces 5000 substrates a day. Also the number of permanent employed workers has increased from initial two to the present 6.5. There have been time with nearly 30 workers, but with experience and automatisisation of the processes the number has been leveled out, and this has taken place without compromising the production volume.

PolarShiitake is not a social enterprise. The law on co-operation procedure obligates to start negotiations with the personnel, when reduction in the number of employees appears as unavoidable. This is what has been done, and it has been considered as a better solution than to allow the enterprise go bankrupt. Of course the situation is catastrophe for those who are dismissed, but it has been considered as a better alternative to have a viable enterprise than no enterprise at all.

Over the years there has been a lot of R&D together with research organizations and project based funding. The value of this expertise is highly appreciated, and maintaining it will be an essential part of the PolarShiitake's strategy also in future.

“I do not sell the know-how, it is our most important capital”.

Eastern Finland Shiitake was among the pioneers in shiitake production in Finland, and the company still exists, even though the cultivation activity was transferred to PolarShiitake in 1999, when the company was founded. Eastern Finland Shiitake still exists, and its facilities are used for the pre-cultivation stage. Initially the production of the substrate for mushroom cultivation and the cultivation itself were confined to two separate enterprises, Polar Log Ltd. and Eastern Finland Shiitake, respectively. In 1992 Eastern Finland shiitake became the contracting producer for Mykora, the major producer of cultivated mushrooms in Finland. The new enterprise - PolarShiitake - was founded with the change of generation in the company's management in 1999, and the focus shifted from domestic markets to exports. The contributing factors for export orientation were the difficulties in getting foothold in the domestic markets, which altogether are not very attractive. The co-operation with Mykora continued until 2007. At that time Polar Log Ltd. was fused into PolarShiitake, and the enterprise took over the selling of own products ending thus the Mykora co-operation.

The critical stage has been the long pioneering work required to develop the prototype production line for mass production and for driving in the machinery with no previous experience. The capacity of the production hall would allow doubling the volume, but the space for the pre-growth stage located in the facility of the Eastern Finland Shiitake is too small. There were also mistakes in planning when the new production hall was constructed.

Although the cultivation takes place inside the hall, the outside weather conditions have an influence on growth of the mushrooms. E.g. the long hot period in the summer 2010 caused problems, because the air conditioning system could not keep the optimal temperature. These drawbacks are temporary shocks with no lasting repercussions.

Learning by experience and the constant struggle with profitability have been great challenges. Because of the peculiar distortion of the Finnish food markets with 80% dominance of two major actors the company has had difficulties in finding footing in the domestic markets, where the customer basis is very small any way. Cultivated mushroom in particular are a difficult item, because there is long tradition in use of various wild mushrooms. In addition, the remote location of the production site increases the transport costs. It also hampers the possibilities to get bank loan to invest in new production buildings, because in remote areas such investments imply an extra risk for the financiers.

European mushroom markets are labile and very sensitive to international economic shocks. During the economic recession in 2008 the demand fell temporarily, and the same has happened during the Iraq war in 2004, when all orders were cancelled for a while. The most recent incident was in March 2014, when the Ukrainian crisis escalated. These types of shocks have been short temporary downswings, and the situation has been normalized within about a month. According to the PolarShiitake managing director, in times of crises, people tend to start eating less out and the restaurants loose customers. In order to cushion these shocks, it would, therefore, be good to broaden the customer basis more towards the individual customers.

Financing has been, and still is, a constant problem. The company does not get subsidies to export the products, because there are no such subsidies for the agricultural items (cultivated mushrooms as classified as such). Subsidies would be paid, if the company was to export the know-how, but that is out of the question, because it is the company's most valuable capital. In order to expand the production, it would be necessary to get bank loan. This is difficult, because the turnover of the business is too small to be credible for the financiers. The remote location of the production site also hampers the possibilities to get investment loan for new production buildings. In remote areas such investments imply an extra risk for the financiers, because nobody is interested in buildings, if the shiitake production would turn out to be unprofitable.

Over the years the company has been actively involved in R&D projects together with the Eastern Finland University and with the High School of Applied Sciences in Joensuu. Investment and development funding has been sought from the regional authorities, and the municipality has also supported by providing the required share of municipal financing for the projects. In addition, a reasonable schedule for paying the back rent to the municipality has also been negotiated. An entrepreneurial godparent was appointed for the company to guide it through the economically critical period in 2010. This procedure is used e.g. when basically a viable enterprise is in difficult economic situation and letting the enterprise go bankrupt would be a bad blow for regional economy via increased unemployment and via lost entrepreneurial and income taxes. The god parent is an entrepreneur himself. He is a mentor who shares his experience and expertise with the god enterprise. The service is coordinated via regional contact persons of the national network of god entrepreneurs. The activity is paid by the membership fees of the network, and it is free for the god enterprise.

Regarding the difficulties in the domestic markets, the company gave up the useless fighting against the two windmills. The main focus is now on exports - 90% of the products are exported to the European markets. The domestic distribution takes place via two small alternative wholesalers outside the market leaders.

The customers are immediately informed, if there are problems in keeping the orders. Since the customers have not had many other alternative suppliers, so far they have been patient and waited. The situation is changing in Europe, when new producers have appeared to the mushroom business. To keep the market position, expansion is, therefore, a must. There are

various options: expanding the present production site, building a new site in a less remote place elsewhere in Finland or in Sweden or even transferring the production to central Europe, where the customers are.

In the value chain the responsibilities are not shared, but each partner takes care of own customers. Primarily the company has full responsibility for the supply and the quality of the products. The feed-back system is underdeveloped. The company has the contact information and a form for feed-back on the web page, but these very seldom used, and this channel is therefore not very informative. The foreign customers occasionally give feed-back on the product quality. Mostly they have been very satisfied with the quality of the products, although occasionally problems related to the cold transports have been experienced.

The most obvious feed-back is the demand, and there have so far not been problems on that side. The problems stem from the restrictions of the production capacity. The message is that production volume needs to be increased, and the expansion is in plans, when it is economically feasible.

The sustainability concept is regarded as dealing with the environmental matters. The vision on the energy self-sufficient production is in support of sustainability. Today after a decade long struggle with economy, the enterprise is profitable. Sustainable business provides livelihood for the actors also in the coming years.

The strengths of the business are the special high-quality mushrooms with evidence-based health impacts and the firm know-how in production on wood-based growth substrate. The northern location and the organic certification are a guarantee on production conditions. In future, additional value for the products is expected from the energy self-sufficient production. If the technology to exploit the side flows of cultivation for production of renewable energy is developed, it will be an additional value that can be used in the differentiating the PolarShiitake products from those of the other producers. It also adds a new element to the know-how. If the process of side flow exploitation can be developed, biofuel could become another saleable product and, depending on the scale, it may also bring along a new source of income for the company.

With the next change of generation, a change in the ownership is also likely to take place. The children of the present owners are teens and young adults, and they have not shown interest in taking over the business. The managing director assumes that within a decade the enterprise is likely to have been sold to some capital investor.

The largest obstacle in the beginning was the missing know-how. R&D activity and co-operation together with research institutes has been crucial for the company's development, and will continue in the future. Today the know-how is perhaps the most important capital of the company:

“The difficulties turn into strengths when they are managed”.

Unsecure economy has naturally also caused big problems. Although the company has been profitable over the past few years, it still struggles with the economy. The remote location of the production site has contributed to the economic difficulties. On the other hand, the location of the production site is one of the main strengths in the European markets.

The need to grow is acknowledged and it is among the highly prioritized business goals (Table 2):

“There are new enterprises in Europe, in future we cannot sell don’t have any longer”.

However, because the overall economic situation is insecure both nationally and especially in the municipality of Rääkkylä, the idea to expand the production has to wait.

6 Future orientation of the initiative/business and the value chain

The managing director is not an uncritical believer in organic production, and his experience is that for many customers the quality is more significant than organic *per se*. His attitude is pragmatic:

“If the products were not certified as organic the price in Europe would be halved”.

The intermittently upcoming food scandals in different parts of the world have increased the interest in organic food and it also increases the willingness to pay premium for such products. The managing director believes that there will be demand for organic products also in future and that the demand probably even increases. However, in Finland the perspectives of alternative food products are not very good, because the market is so small, and the two major actors dominate the markets to such an extent that there is no real competition among the suppliers.

Up to these days there have been few producers of high quality shiitake in the world. Customers have, therefore, not been lost, although there have been occasional disruptions in the production. So far, the availability problems have not been a real obstacle. In recent years, several new organic mushroom producers have come to the markets and today the customers have alternative suppliers, in case PolarShiitake cannot fulfil their needs. Expansion of the business is, thus, a necessity. The company has plans to increase also the choice of cultivated species. The interest is mainly on developing cultivation of the domestic wild mushrooms. Another option to diversify the activity is the vision regarding bio-energy production. The option is feasible at least in view of the energy self-sufficient production, but there may be possibilities also to become part of the local decentralized energy production.

The main distribution to the end customers takes place via restaurants. The international economic crises have caused repeatedly downswings in demand, because in such a situation instead of eating out, people tend to eat more at their homes and, consequently orders are cancelled. The shocks have been of short duration, but with fresh products they cause problems for the producer, because the production process with pre-cultivation takes time and cannot be accommodated to the short-term changes in demand. The same applies vice versa; the production volume cannot be quickly increased, if the demand for some reason would suddenly increase. The latter has so far not been a problem, because with the present production capacity everything has been sold and there have been hardly any competitors.

It is recognized that demand can be increased, if the fresh shiitake was further processed into different food items and ready-made meals. The company will, however, even in future retain its focus on cultivation, but is open to co-operation with other entrepreneurs who are willing to develop the processing phase.

The remote location of the production site comprises an extra economic burden to the company. Transferring the production to central Europe where the customers are, would

significantly decrease the transport costs. With such a decision, however, the main marketing argument - production in the midst of unpolluted nature of the North - would be lost. The production will stay in Finland also in future, at most another production site could be founded in Sweden.

The R&D co-operation with research institutes will continue and it is already expanding towards the more comprehensive bio-economy approach. With the generation change there might be changes also in the ownership, and this may influence the vision on the future development.

7 Verification of the results and concluding reflections

The report is largely based on the interview of one person, the managing director of the company, who is one of the two partners of the enterprise. The questions were sent before hand in order to allow him to prepare in advance and to look for relevant documents. The manuscript of the report, together with the leaflets in Finnish and in English, was sent to the managing director with the request for commenting and verifying the results. Some complementary information was obtained in this connection.

References to background information were obtained via e-mail from those involved in research projects. Regarding the business strategy documents the managing director was very cautious. Economic numeric data were provided by the managing director for the years 2007-2014. Older data are scanty, and they were obtained from the official documents of the register of enterprises.

In order to get more varied picture, it would be interesting to interview also the customers of PolarShiitake, both abroad and in Finland. Because of the time constraints, this was not done.

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