

Competitive strategies of the Baltic sawmill industry

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This article focuses on the description of the competitive strategy groups of the Baltic sawmill industry. Despite of the increased exports, the competitive strategies of the Baltic sawmills are still quite unclear. In general the most distinguished strategic orientation can be found from the sawmills integrated into further processing. The comparison of each country shows that the most distinguished strategic orientation can be found from Lithuania. There are also some well positioned sawmills in Estonia and Latvia. The short term development of the Baltic sawmill industry will require investments in market information, business management and kilning capacity. This may also require the concentration of production capacity on fewer and larger sawmills.

Key words: competitive strategy, strategic groups, sawmill industry

Introduction

During the Soviet regime the structure of the Baltic sawmill industry was worked out to fit the requirements of the centrally planned economic system. Wood processing industries were almost without exception built as combines with an integrated production from roundwood procurement to final commodities. A large number of sawmills were established to meet the internal needs of collective farms and agricultural co-operatives. After the declaration of independence the structure of sawmill industry changed considerably. Combines have been privatised and new sawmills established partly together with foreign investors. Furthermore, the number of small circular sawmills increased rapidly. Significant investments have taken place in many sawmills, including a number of joint ventures.

The Baltic exports of sawn softwood have substantially increased in recent years. For example, the UK imports from the Baltic States increased by nearly 400 % between 1993 and 1994. Baltic State's estimated share of the UK timber market soared from 0 % in 1991 to almost 10 % in 1994 (TTJ January 14, 1995). British softwood mills are losing market share due to significant volumes of sawnwood arriving from the Baltic States (TTJ September 14, 1996). Also Nordic softwood producers have faced increasing competition for their traditional export markets from the Baltic States, especially in Germany. German imports from the Baltic States increased by

almost 180 % between 1994 and 1995. As the total German sawnwood imports decreased by 14 %, Baltic State's market share increased from 4 % to 13 %. (TTJ July 27, 1996) While the industrial output of many sectors has sharply decreased since 1990, the sawmill industry has showed the symptoms of rapid recovery.

Nevertheless, the competitiveness of the Baltic sawmill industry is still quite unclear. For instance, the small average size of sawmills is one of the fundamental problems in the Baltic States. Even small companies cut their sawnwood to many specifications from construction, fencing and palletwood to packaging material (TTJ September 14, 1996). Therefore, they are not flexible enough to supply large quantities of requested specifications. It is also argued that they cannot properly grade their production because of the lack of market knowledge and technological resources. It is usual that quality variations within a shipment are huge because brokers compile shipments from several sawmills. Moreover, the average accuracy of dimensions and lengths is considered uneven. Due to lack of kilning capacity softwood suitable for furniture manufacturing is damaged (Mortensen 1996). It is argued that production cannot be based on the Baltic deliveries due to uncertain availability and unpunctual deliveries.

According to many importers current problems of Russian deliveries have been substituted by the imports from the Baltic States (TTJ March 11, 1995). However, stability in Russia will return in the medium term and Russia is expected

to become again a key supplier to the UK market. It is even claimed that the Baltics are not able to produce the quality of the top Russian mills. The quality can be found from Sweden and Finland, but Russians have traditionally been cheaper. (TTJ September 14, 1996) Therefore, it is inevitable that the Baltics will face increasing competition especially when the cost advantage based on raw material and labour is used up. It is important to examine the competitive methods the Baltic sawmill industry plans to emphasise in order to response the medium term market challenge. According to Porter (1985) it is possible to examine the adaptations companies will make to the market situation by researching their competitive strategies. Thus, the purpose of this article is to describe competitive strategies of the sawmill industry in each of the Baltic States.

Materials

This article introduces main results of the survey called "The Baltic Sawmill Industry to the Year 2000". The study focused on the Baltic sawn softwood producers. The smallest sawmills, producing less than 2.000 m³ annually, were excluded. Because almost all the largest companies are included, the sample can be regarded as total population. Only a few companies refused due to lack of interest. The interviews were based on a standardised questionnaire. They were conducted through personal interviews mainly in summer 1996. Table 1 shows the sample characteristics of the study.

Table 1. Sample characteristics according to production in 1995

Country	Total number	Production, m ³	Average size, m ³	Share of softwood production, %	Share of total exports, %
Estonia	32	146.864	4.589	47	48
Latvia	53	391.120	7.380	39	30
Lithuania	41	333.900	8.144	44	30

Methods

Defining competitive strategies involves the allocation of resources to achieve business goals in a competitive environment. According to Weitz and Wensley (1988) strategic decisions in a firm can be identified by the following characteristics. Firstly, they involve a *significant resource commitment*. A firm can be successful only if its internal capabilities (resources) correspond to external requirements (environment). Secondly, they consider competitive activities to establish a *sustainable competitive advantage* in a defined market. Pearson (1990) states that the main task of competitive strategy is to set a direction for a company. Thus, strategy can be regarded as first-order decisions of any firm.

Competitive strategy is usually seen as the combination of decisions dealing with product-market scope and distinctive competencies. By defining the **product market scope** a firm defines the fundamental boundaries for its operations. The purpose is to determine a *competitive arena* on what to concentrate in order to create a sustainable competitive advantage to raise the maximum level of profitability in the long run. **Distinctive competencies** are a necessary condition for the formation of competitive advantage within a specified competitive arena. They are a firm's ability to complete operations in a manner superior to that of its competitors within a similar environment or to apply resources that competitors lack (Hitt and Ireland 1984). Thus, distinctive competence is a set of skills, knowledge and know-how that a firm has and is especially good at.

Competitive strategy is multidimensional by nature. The overall competitive strategy of a firm is formed by the joint influence of all strategic decisions. These components are assumed to be interrelated. The analysis of overall strategy requires that all components are examined simultaneously. This refers to the analysis of common variance of the whole set of variables. The description of competitive strategy is done by the use of a multivariate data reduction technique. A suitable method for data reduction is **factor analysis**. Competitive strategy was measured with the semantic differential scale consisted of many bipolar variables describing the objects of interest.

Firstly, the internal structure of strategic decisions is presented. This structure refers to the strategic dimensions describing the overall competitive strategy. *Secondly*, the types of competitive strategy are combined with the aid of key strategic dimensions. The combinations are made by first calculating the factor score variables corresponding to the dimensions concerned. The factor score variables are then dichotomised and crosstabulated. Combinations result in four different types of competitive strategy. *Finally*, companies are classified into so called strategic groups according to their relative position in the typology. Classification is based on factor score variables. A strategic group is the set of firms in an industry that use a common strategy defined by key strategic dimensions. Strategy differences may place each firm in a unique category or strategies may be so similar that only one strategic group exists in an industry. Two or more strategic groups is a more typical pattern. Identifying and analysing strategic groups helps in anticipating the future competitive strategies. (Cravens 1991) Strategic groups are identified by **cluster analysis**.

Results

Internal dimensions of competitive strategy

The correlation matrices containing variables describing

competitive strategies were subjected to factor analysis and varimax rotations were done. Mainly due to interpretation and the desire to have the fewest possible composite variables, the factor solutions containing three to four dimensions were chosen. They were also theoretically the most meaningful solutions. These solutions economically describe the common variance among variables and also the internal structure of the sets of variables. The results of the factor analyses are presented in the following tables. For purposes of interpretation, the variables that obtained the highest loading on each factor are presented in descending order. Table 2 shows the dimensions describing competitive strategies of the Estonian sawmill industry.

Table 2. Competitive strategy dimensions of the Estonian sawmill industry

Variable	Factor 1	Factor 2	Factor 3	Factor 4	Communalities
Constant agent relations	.67	.12	-.02	.28	.54
Customised qualities	.66	.31	-.30	-.24	.69
Low marketing costs	-.46	-.28	-.48	-.36	.65
Low material costs	-.77	.11	-.08	-.12	.64
Low production costs	-.84	.23	.02	.19	.79
Many end-use segments	-.03	.90	.13	.13	.85
Prices below average level	.29	.71	.06	.29	.67
Large market area	-.30	.67	-.22	-.32	.69
Punctual deliveries	.22	-.14	.78	-.05	.68
Direct end-user relations	.02	-.06	.62	.12	.41
Constantly even quality	-.27	.33	.61	.03	.55
Selective timber purchases	-.24	.03	.56	-.19	.41
Quick handling of orders	.26	.26	.53	-.24	.62
Basic bulk dimensions	-.05	-.04	.03	-.68	.47
Basic lengths	.27	-.16	.17	-.68	.60
Constant customer relations	.48	-.08	.21	.65	.71
Eigenvalue	3.28	2.26	2.42	1.99	9.95
Total variance (%)	20.5	14.1	15.1	12.4	62.1

The four factor solution explains 62 % of the total variance of the variables describing the competitive strategies. The strategies of the respondent units in the Estonian sawmill industry manifest themselves along these dimensions. The analysis of variables assigned to factor 1 indicates that it clearly represents the superior skills of a firm. The variables at the positive end indicate effective marketing. The variables at the negative end are based on low costs. This dimension can be labelled as a *distinctive competence factor*.

In the fourth factor the variables describing product and market decisions get quite high and pure loadings. Thus the factor represents the competitive scope dimension. It is divided into differentiated and undifferentiated product and market choice. It is possible to name this dimension simply as a *product-market scope factor* that includes the description of selectivity in those decisions.

As Table 3 shows, the competitive strategies of the Latvian sawmill industry can be reduced to three dimensions.

The second factor is clearly bipolar. The variables at the negative end indicate lack of differentiation in product-market decisions, whereas the positive end emphasises differentiated product and market decisions. The dimension can be called *product-market scope*. The third factor represents decisions concerning effective marketing and low costs. Thus the dimension can be labelled simply as a *distinctive competence factor*.

Table 3. Competitive strategy dimensions of the Latvian sawmill industry

Variable	Factor 1	Factor 2	Factor 3	Communalities
Preferring quality before volume	-.67	-.03	-.01	.45
Constant agent relations	-.18	.03	.62	.42
Constant end user relations	-.60	-.07	-.04	.36
Low marketing costs	-.28	.17	-.45	.32
Low production costs	-.53	-.17	.11	.32
Many end-use segments	-.53	-.41	.25	.52
Prices below average level	-.52	.09	-.22	.33
Unseasoned sawnwood	-.10	-.50	-.09	.27
Sales without middlemen	.05	.03	.77	.60
Selective timber purchases	-.43	.31	-.14	.31
Material costs above average	.13	.10	.60	.39
Quick handling of orders	-.12	.52	-.32	.39
Basic bulk dimensions	-.16	-.71	-.02	.54
Basic lengths	-.29	-.72	-.26	.68
Constant customer relations	-.17	.60	.02	.39
Eigenvalue	2.21	2.39	2.06	6.66
Total variance (%)	14.7	15.9	13.7	44.3

Table 4 presents the competitive strategy dimensions of the Lithuanian sawmill industry. The variables assigned to factor 1 refer to effective marketing as a distinctive competence. Thus the dimension is named simply as a *distinctive competence factor* including the decisions between marketing and low costs as superior skills. Factor 3 refers to the combination of variables that highlight the influence of

Table 4. Competitive strategy dimensions of the Lithuanian sawmill industry

Variable	Factor 1	Factor 2	Factor 3	Factor 4	Communalities
Sales without middlemen	.81	-.06	.17	.05	.70
Constant agent relations	.45	-.27	.33	-.14	.41
Customised qualities	.07	-.02	.05	.76	.59
Low production costs	-.02	.95	-.03	.05	.89
Many end-use segments	.65	.19	.19	-.02	.50
Prices below average level	.09	.38	-.44	-.22	.39
Punctual deliveries	.57	.21	-.38	.12	.53
Constant end-user relations	.06	-.49	-.39	.22	.44
Constantly even quality	.75	-.05	-.21	.06	.62
Selective timber purchases	.15	-.03	-.40	-.55	.49
Quick handling of orders	.41	.12	-.34	.20	.34
Basic bulk dimensions	.18	-.02	.54	.17	.36
Basic lengths	-.11	.30	.66	-.15	.56
Constant customer relations	.55	-.31	-.04	-.11	.41
Unseasoned timber	-.12	.16	.14	-.65	.48
Preferring volume before quality	.05	.41	.02	-.30	.26
Eigenvalue	2.80	1.86	1.76	1.67	8.09
Total variance (%)	16.5	10.9	10.3	9.8	47.5

differentiation in product decisions. The factor can be called *product-market scope*.

Types of competitive strategy

The description of competitive strategies can be reduced to two dimensions in each of the Baltic State: *distinctive competencies* and *product-market scope*. Distinctive competencies are based either on effective marketing or low costs. Scope of product-market decisions are differentiated or undifferentiated by nature. There are two main categories of competitive strategy: **customisation** and **cost efficiency**. These categories can be further divided into different types of competitive strategy. Customisation is divided into a *tailored* and *standardised* customisation whereas cost efficiency is divided into *pure* and *focused* cost efficiency. These four strategy types together clearly refer to the competitive strategy types presented by Michael E. Porter (1985). This confirms the operationalisation of the strategy concept used in this study, since it has its origins in Porter's work. The contents of each type of competitive strategy are generally as follows:

- Tailored customisation
 - differentiated product specifications
 - a few specified segments and permanent customers
 - effective sales and marketing
- Standardised customisation
 - standardised product specifications (bulk products)
 - temporary customer relationships
 - effective sales and marketing
- Pure cost efficiency
 - standardised product specifications (bulk products)
 - temporary customer relationships
 - as low operation costs as possible
- Focused cost efficiency
 - differentiated product specifications
 - a few specified segments and permanent customers
 - as low operation costs as possible

Strategic groups

The Estonian sawmill industry consists of five different strategic groups. Figure 1 presents the location of groups in the competitive strategy dimensions. As the figure shows, relative differences in the product-market scope dimension are not clear. The most of the Estonian sawmills are not concentrated on any specific product or customer type. The internal variation of production is huge within a sawmill. Product specifications are determined case by case according to orders. On the contrary, relative differences in the distinct-

ive competence dimension are a little bit more distinguished. However, the majority of sawmills do not emphasise any specific competencies. Therefore, the relative strategic positions indicate that competitive behaviour in Estonia is rather passive by nature.

The majority of firms in group 1 are quite small manufacturing less than 4.000 m³ sawn softwood annually. They are partly integrated into the manufacturing of custom-made joinery products. They are also the most export oriented sawmills in Estonia. Nearly 80 % of total production is exported. The firms in group 5 are also integrated into further processing. Their sortiment of further processed products is large including log houses and joinery products. Despite of cost efficiency they do not emphasise scale economies. By contrast, the average production was the lowest compared with other groups (3.000 m³ annually). They produce low cost sawnwood only for their own needs. However, these two groups represent the most distinct strategic orientation in Estonia at the moment.

Without exception the other three groups represent pure sawmills. The competitive position of groups 2 and 4 is unclear. Especially, group 2 seems to follow all strategy types. Porter (1985) describes how a firm applies more than one strategy simultaneously and ends up to a "*stuck-in-the-middle*" situation, where none of the selected strategies are implemented properly. Group 3 consists of the most modern Estonian sawmills. The average production and capacity is the highest compared with other groups. However, their strategic position is still unclear because all these firms are newly established or modernised. They have the technological resources to achieve low cost position in a few specified segments in the near future.

Figure 2 illustrates the strategic groups of the Latvian sawmill industry. As the figure shows, relative competitive position in the product-market scope dimension is quite unclear. However, it is a little bit more diversified compared with the Estonian sawmills. By contrast, the positions in the distinctive competence dimension are less distinguished. Some 80 % of the Latvian sawmills have not concentrated on any specific strategy type. This might indicate the big role of domestic export companies in the Latvian sawnwood trade.

Group 5 represents the most distinguished strategic orientation in Latvia at the moment. The group is partly involved in further processing. They produce pallets and other packaging commodities. The share of sawnwood exports is the highest compared with other groups. Nearly 95 % of total production is exported. Their products are commonly used as packaging materials. Sawmills in group 2 have concentrated on a few segments in export markets. They produce specifications especially for furniture and joinery sectors. The share of construction raw materials is the lowest compared with others.

DISTINCTIVE COMPETENCIES

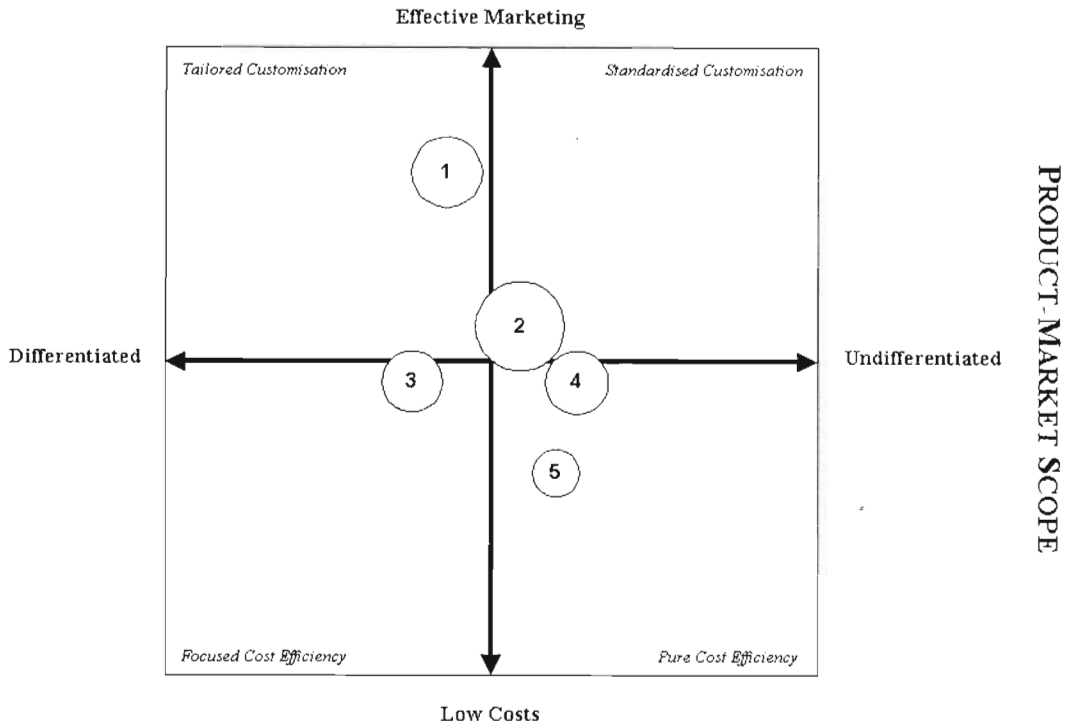


Fig. 1. Strategic groups of the Estonian sawmill industry

DISTINCTIVE COMPETENCIES

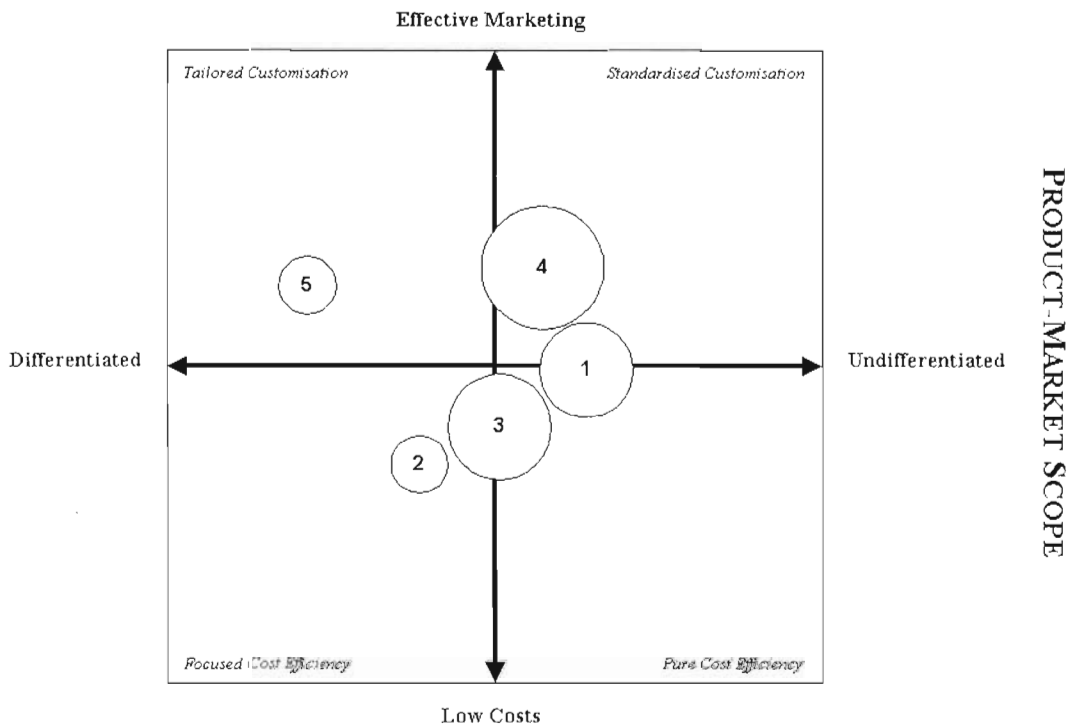


Fig. 2. Strategic groups of the Latvian sawmill industry

Groups 3 and 4 represent the highest share of other wood processing sectors. The average share of further processing can be even 20 % of total production. These firms can produce especially joinery products (doors and windows). They also produce huge volumes pure sawnwood basically for construction purposes. The relative share of exports is the lowest compared with other Latvian sawmills. Group 1 might have the best possibilities to achieve the low cost position in the future. The annual production and capacity is the highest compared with others. It also represents the best productivity (330 m³/worker/year) in Latvia today.

Figure 3 presents the strategic groups of the Lithuanian sawmill industry. As the figure shows, the strategic orientation is more distinguished in Lithuania compared with other Baltic States. The relative position of groups is quite clear in both dimensions. However, the share of "stuck-in-the-middle" companies is also high. Group 4 consists almost totally of the State Forest Enterprises. While these firms are waiting for the privatisation, significant investments required for effective concentration have not taken place. Their average capacity and production is the lowest compared with other sawmills. It is natural that their strategic orientation is not distinct. However, quick decisions about the future of these companies are needed to ensure their existence.

The firms in group 1 operate both in Lithuanian and foreign capital. Their average capacity and annual production is the highest compared with other sawmills. The productivity is also the highest (220 m³/worker/year) compared with

others. The average number of employees is also the highest. In average a sawmill has 81 workers. Their production contains a mixture of products including whitewood dry graded to BSI regulations, joinery redwood, unseasoned whitewood cut to size and length, pallet and fencing components and joinery products such as windows. Their products are commonly exported to Germany and the UK.

Groups 2 and 3 are quite similar by nature. They have concentrated on construction, furniture and packaging materials. However, firms in group 2 emphasise all these segments simultaneously whereas firms in group 3 have concentrated mainly on one of those segments. It is surprising that productivity in group 2 is the lowest (100 m³/worker/year) compared with other groups. The number of employees is too high compared with production in order to ensure cost efficiency. Group 5 consists of newly established sawmills. The owners of these firms are involved in further processing (e.g. log houses). These firms are not yet ready to benefit from scale economies but they have the technological resources. The purpose of these mills is to produce cost effective sawnwood for own further processing units.

Discussion

Regardless of export volumes the competitive strategies of the Baltic sawmill industry are still quite unclear. Pure low cost theories seem not to take place in the Baltic States. Sawmills following cost efficiency are significantly smaller compared with other sawmills. Some exceptions show that

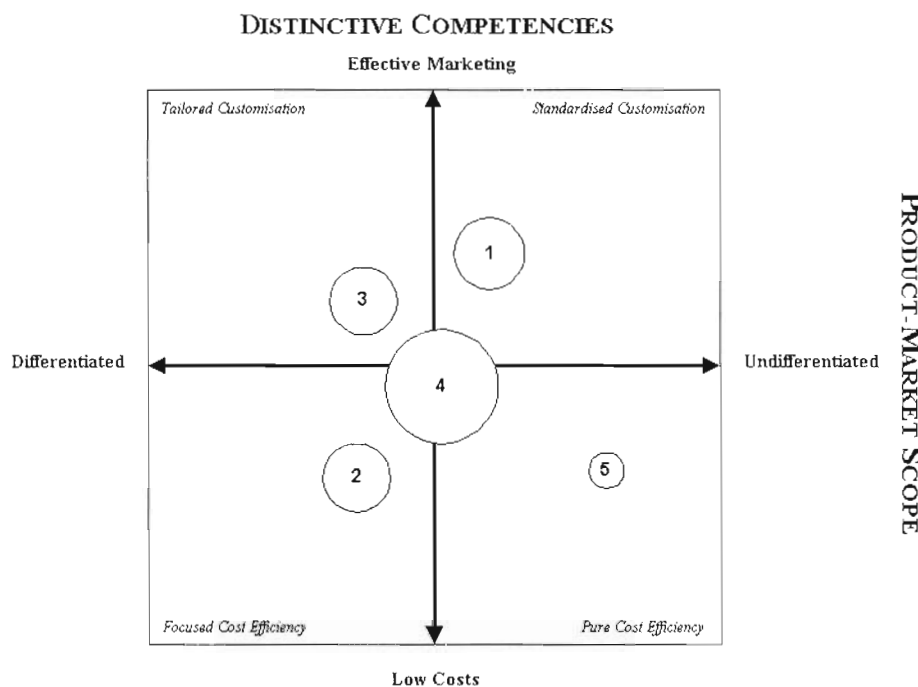


Fig. 3. Strategic groups of the Lithuanian sawmill industry

advanced competitive strategy types (customisation) require certain size. As the results indicate, the current problem of the Baltic sawmill industry is the lack of resources to concentrate on any specific strategy type. The current situation can be best described as taking care of *day-to-day* operations. Production is vulnerable to short term changes according to orders and market prices. The product assortment is usually large including basic sawnwood and different further processed products. Due to passive competitive strategies foreign customers take usually the full advantage of the Baltic suppliers. Therefore, the most of the Baltic sawmills are vulnerable to competition.

However, there are some well positioned sawmills in all Baltic States. In general the sawmills integrated into further processing have the most distinguished strategies compared with basic sawmills. In fact basic sawmill industry is developing in the Baltic States at the moment. In average the competitive strategies of the Lithuanian sawmills are the most distinct.

Much is written about the lack of modern production technology in the Baltic sawmill industry. As the results indicate, investments on market information and business management should also be considered. Without external information and clear strategic orientation, technology will not be utilised properly. The most modern technology does not guarantee the business success. In fact the average competitive position of the most modern basic sawmills is still quite unclear. Therefore, strategic investments combined with investments in kilning capacity are needed to ensure current market positions. In practise this might need the concentra-

tion of production capacity on fewer and larger basic sawmills. Quick decisions are required because the cost advantage ensuring low market prices will be used up within a next few years.

References

- Cravens D.W.** 1991. Strategic marketing. Third edition. Richard D. Irwin, Inc. Boston.
- Hitt M.A. and Ireland R.D.** 1984. Corporate distinctive competence and performance: Effects of perceived environmental uncertainty, size and technology. *Decision Sciences*. Vol.15. No.3: 324-346.
- Mortensen J.R.** 1996. Establishing in Eastern Europe (Etablering i østeuropa). *Træ og Industri (Wood and Industry)*. 6/1996: 6-7.
- Pearson G.J.** 1990. Strategic management. Prentice Hall International, Inc.
- Porter M.E.** 1985. Competitive strategy: Creating and sustaining superior performance. Free Press. New York.
- Weitz B.A. and Wensley R.** 1988. Readings in strategic marketing. Analysis, planning and implementation. The Dryden Press. Holt, Rinehart and Winston, Inc.

СТРАТЕГИИ КОНКУРИРОВАНИЯ ЛЕСОПИЛЬНОЙ ПРОМЫШЛЕННОСТИ БАЛТИЙСКИХ СТРАН

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Резюме

В статье характеризуются основные стратегические группы лесопильной промышленности Балтийских стран, выделенных следуя стратегиям конкурирования предприятий на рынке. Несмотря на увеличивающиеся объемы экспорта, еще довольно трудно выделить стратегии конкурирования производителей пиломатериалов Балтийских стран. Как правило, самую ясную стратегическую направленность имеют лесопильни с наиболеешей обработкой пиломатериала. Сравнительный анализ по странам показывает, что более ясно в стратегическом плане определились Литовские предприятия. Ясные стратегические позиции имеют также некоторые лесопильни Эстонии и Латвии. Для развития лесопильной промышленности Балтийских стран в ближайшем будущем требуются инвестиции на информацию рынка, управление бизнесом и сушку пиломатериала. Также может потребоваться концентрация мощностей производства уменьшая число мелких предприятий.

Ключевые слова: стратегия конкурирования, стратегические группы, лесопильная промышленность