

# Production as a Key Factor for Driving Competitiveness in Manufacturing Industry

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## ABSTRACT

*The importance of small and medium sized companies as a leader for globalization has been recognized through various sources. One class of these companies is called the Hidden Champions. A Hidden Champion company thrives to operate as a global leader in a niche market. The competence factors of the hidden champion companies have been identified in a previous research conducted by Hermann Simon. The competence factors do not include or define the role of production or the production strategy. The purpose of this paper is to study the impact of the decision made in production strategy to correspond to the identified competence factors. This study includes a definition of the hidden champion companies and the identified competence factors. Furthermore, this study provides the existing production frameworks for realizing competent production and production strategy. The results of this research will be later validated through a questionnaire survey conducted in both Finnish and German companies. The final goal of this approach is to provide comparative and timely accurate results of the current state of practice within the SME industry in both Finland and Germany. The study will finally provide information and applicable results for both the industry and academia by defining the dimensions of successful strategies and practices to organize production in the SME industry. The results could be used to define new and alter existing production strategies to improve SMEs' capability to respond better response to the demands of globalisation and global markets. The results can be adapted in the industry by benchmarking the observed best practices with existing practices. Additionally the study will finally generate new information in the Hidden Champion domain by providing results and information of the role of production and production strategy decisions of the global market leaders operating in niche markets. This may inspire the academia to use this information to include alternative perspectives to research.*

## 1. INTRODUCTION

In an industrial company the production plays a major role in creating competitive advantage, regardless whether the production is company's own function or outsourced to the supply network. Especially, when the company is heavily manufacturing oriented, e.g. small or medium sized sub-contractor and/or system supplier, systematic building of the manufacturing capabilities and at a long-term basis can be crucial for surviving. Still, especially in the small and medium sized Finnish companies, there is a shortage of a strategic dimension when organizing and planning the production. One reason for this is that the dependencies between competitive advantages and strategic characteristics of production have not been identified in a sufficient and concrete way.

The final goal of the research is to create a model to be used for conducting needed strategic production capabilities and characteristics from pursued competitive advantages, figure 1. The outputs of the model will be based on the production characterization. Although the framework for the characterization is not yet completed, some useful frameworks recognized from literature for these purposes are presented in the Section 3.

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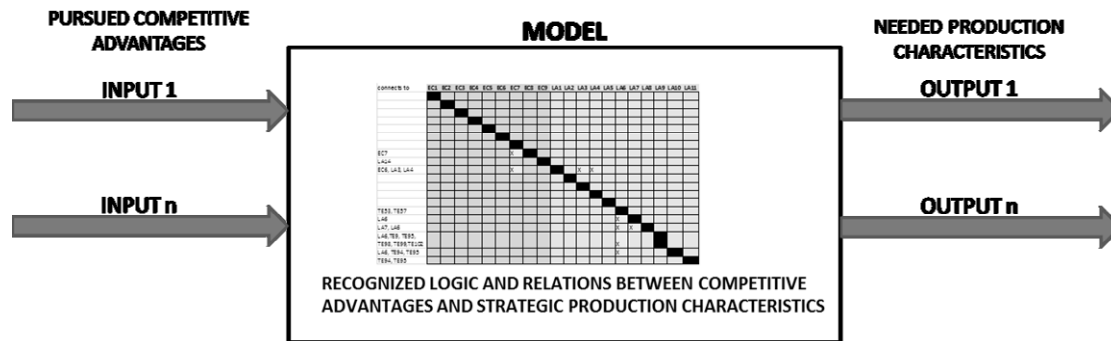


Figure 1. The process for conducting needed strategic production capabilities and characteristics from pursued competitive advantages.

The model will be targeted especially for the use of medium sized industrial companies, in developed and well-established economies which aim for global success and whose competitiveness is heavily influenced by the production capabilities. In addition, the model will concentrate in manufacturing industry so that e.g. pure service industry is excluded. On the other hand, services will be in the focus of the becoming research in cases when they essentially support the creation of the customer value. The model will assist companies to identify and locate capability bottlenecks in their production and to plan the right production development actions. It will also help to deepen and widen the understanding of the significance of production capabilities which are needed to achieve competitive advantage. This responds to the need to strengthen the strategic dimension in production development and management in industry, which has been recognized as one of the key subjects to be advanced in the Finnish technology industry [1]. The research aims to support a change in the management culture, so that, instead of being in reactive role, the production would be seen as a strategic proactive function, which has significant importance for achieving competitive edge.

The target group of the model fits well into the concept of Hidden Champions. The term “Hidden champions” originates from late 1980’s, when professor Hermann Simon used that name for companies which are little known, have revenue below 3 billion euros and are market leaders in their continent or within the top three globally [2]. Half of the 2540 recognized Hidden Champion companies come from Germany [2], where an essential part of this research will take place to recognize dependencies between the strategic production capabilities and competitive advantages.

This paper aims to give an overview of Hidden Champion companies focusing on their competitive advantages. Also, the research plan and framework to describe the dependencies between strategic production capabilities and competitive advantages are presented.

## 2. ABOUT HIDDEN CHAMPIONS

Although Hidden Champion enterprises are not a completely uniform group, several common characteristics have been identified. The Hidden Champion concept gives a somewhat loose formula for a long-term success for companies which operate globally but have strong roots in their home countries. For over ten years there has been active discussion and concern about the effects of economic globalization on the competitiveness of enterprises based in high-wage countries. Even though concerns have realized in many cases, the Hidden Champion enterprises, which are almost all located in high- wage countries, have been able to grow globally but also in their home countries [3,2]. This is why the concept and especially the list of competitive advantages of the Hidden Champion companies are chosen to be used in our research. Table 1 presents the percentages of companies that stated they had a clear competitive advantage in the respective attribute [2].

Table 1. Competitive advantages of Hidden Champion companies [2].

Competitive advantage	Percentage	Competitive advantage	Percentage
1. Product quality	58	8. Delivery flexibility	31
2. Closeness to customer	48	9. Distribution	22
3. Advice	48	10. Cooperation with vendors	13
4. On-time delivery	44	11. Patents	12
5. Economy	41	12. Advertising	7
6. After-sales service	40	13. Price	6
7. System integration	37		

Competitive advantage, or lack of it, can be largely explained by examining the company's capabilities and by comparing those capabilities against competitors' capabilities [4]. Naturally, as the industry is currently more networked than ever before, the source for many capabilities can be located to the supply chain or even to the society. For Hidden Champion enterprises several sources of competitive advantage have been identified. In the past research, the focus of identifying these capabilities has been on ownership policy, innovativeness, personnel policy, marketing and sales, organizational culture, strategy process, customer and market policy, product strategy, and organizational structure. Although, the literature review on the Hidden Champion concept at this point of the research is not complete, it seems that very little is known on how the Hidden Champion companies have organized their production and which are the main characteristics of their production. Based on the listing in table 1, the overall competitive edge of Hidden Champion companies is mainly achieved through different forms of differentiation. Vickery and Droge [6] studied the relation of production competence and business strategy and came to a conclusion that manufacturing can be an important contributor to a pure differentiation strategy. This means, that it seems appropriate to gain knowledge on how the Hidden Champion companies have organized their production. Still, it can't be completely excluded that there even are shared production characteristics between Hidden Champion companies or that they can't be identified.

### 3. PRODUCTION CHARACTERIZATION

As one of the main goals of this research is to identify the profile of manufacturing characteristics in a typical Hidden Champion company, there is no need for narrowing the characteristics for any special category, e.g. resources or capabilities. Still, to link the competitive advantages, presented in table 1, with certain production characteristics, a framework on the main variables in production needs to be generated. The framework needs to be generic and wide enough, so that it can be exploited for characterizing production in different kinds of businesses. Wheelwright's list [4] of decision categories composing a manufacturing strategy, presented in table 2, forms a good basis for these purposes. Since the list is almost 30 years old, the terminology needs to be modified as well as the descriptions under eight main categories need to be complemented in further stages of the research.

Table 2. Decision categories composing a manufacturing strategy [4].

Main categories	Subcategories
1. Capacity	Amount, timing, type
2. Facilities	Size, location, focus
3. Technology	Equipment, automation, connectedness
4. Vertical integration	Direction, extent, balance
5. Workforce	Skill level, pay, security
6. Quality	Defect prevention, monitoring, intervention
7. Production planning/materials control	Computerization, centralization, decision rules
8. Organization	Structure, reporting levels, support groups

The main production approaches, as they have well known and widely acknowledged main characteristics, will be used for categorizing the production features of Hidden Champion companies. In the future research, the extent to which companies fit into these categories will be evaluated. Table 3 presents the manufacturing approaches to be used with some sample approach-specific characteristics, e.g. guiding principles.

Table 3. Manufacturing paradigms.

<b>Production approaches</b>	<b>Approach-specific characteristics</b>
1. Lean Manufacturing 2. Mass Customization	Eliminating waste, effective problem solving, low inventories [7] Flexible manufacturing, information systems and organizational structures [8]
3. Holonic Manufacturing 4. Flexible Manufacturing	Autonomous and cooperative manufacturing elements [9] Multi-skilled workers, flexible production automation, flexible information flows
5. Agile Manufacturing	Virtual enterprise, rapid partnership formation, concurrent engineering [10]

Although the organizational culture of Hidden Champion companies has been somewhat identified by Hermann Simon [2], there are still several dimensions of organizational culture that have not yet been identified. From a production point of view the aspects of organizational culture may have significant impact on e.g. flexibility and capacity for development [5]. For the evaluation of the organizational culture there are several frameworks available, which will be combined to create an appropriate framework for this research. Besides evaluating the features of the organizational culture, the strength of the culture will be evaluated e.g. by identifying and evaluating the visible effects of the organizational culture on the daily operations in manufacturing.

#### 4. RESEARCH METHODOLOGY

The research discussed in the paper will be carried out in the following six phases:

1. Literature review
2. Production characterization framework
3. Hidden Champion company's production profile
4. First version of the model
5. Testing the model
6. Refined version of the model

The literature review will focus on deepening the knowledge on Hidden Champions in general and on gathering knowledge on the available frameworks and approaches suitable for production characterization. Based on the literature review already carried out, it seems that similar models, as described in this paper, don't exist. Still, relatively high number of publications have analysis on dependence of competitive advantages from certain production characteristics. In the second phase a framework will be developed to support the data collection and for structuring the data collected on phases three and five. Most of the empirical data will be collected on phase 3. This phase includes five to ten interviews on German Hidden Champion companies to create a profile of a Hidden Champion company's production and to recognize the links between certain production features and competitive advantages. Figure 2 presents the current version of the matrix to be used for recognizing the links between production features and competitive advantages, and to deepen the understanding of the production's role in achieving certain competitive advantages. This phase will be executed in close cooperation with German research partners. In the fourth phase the first version of the model will be conducted based on the findings at earlier stages of the research. In the fifth phase the model will be tested in Finnish companies to evaluate the usability and usefulness of the model, and also to recognize circumstances that support or weaken its usefulness and/or usability. In the final phase the model will be refined based on the findings of the previous phase and the model will be compared to previous research on the subject.

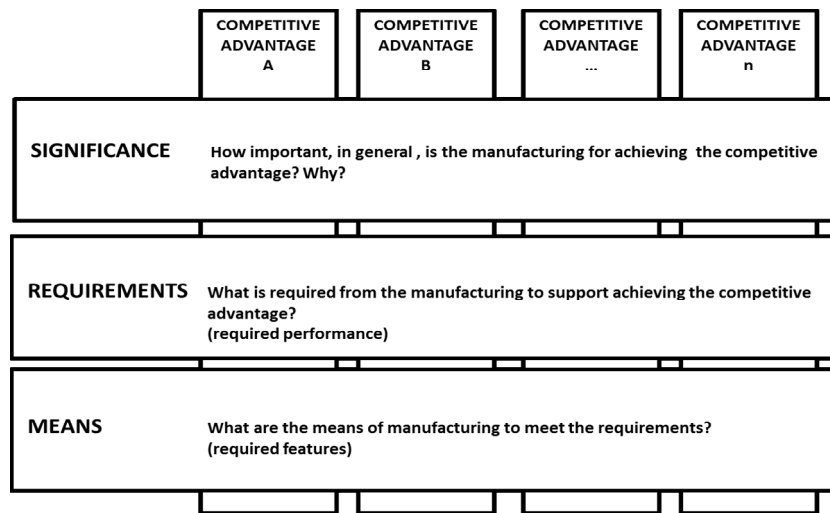


Figure 2. Matrix to be used for evaluating the role of manufacturing in achieving competitive advantages.

## 5. DISCUSSION

The term *Hidden Champion* was coined by Theodore Levitt, who was an American economist and professor at Harvard Business School. He used it first in a discussion with Hermann Simon who was later on the first to use this name in the title of a publication in a scientific German management journal [11]. Even if the term itself is today already quite widely known, the production characteristics of Hidden Champion companies have not yet been deeply discussed. Naturally it is speculative to assess the reasons for this, but again, it is likely to be useful for the ongoing research. First, it might be that shared production characteristics between Hidden Champion companies can't be identified, and/or the shared characteristics are limited to the areas already studied. Secondly, it may be that the competitive advantage of Hidden Champions is not substantially based on production. Thirdly, the way how Hidden Champion companies have organized their production may be such a significant source of competitiveness that the companies are not willing to openly discuss the matter. Fourthly, it's possible that production hasn't so far been in the focus of previous researchers doing research on Hidden Champions. The first two explanations would change the course of this research substantially. The third explanation can create a real challenge for the research discussed in this paper and may slow down the process. Obviously the fourth explanation is the most comfortable for this research.

The list of competitive advantages presented in the second chapter has been used as part of the strategy process to form the strategic goals in couple of occasions in the Finnish industry. The response has been positive and the management has been able to identify goals for their companies based on the list.

## 6. CONCLUSIONS AND FUTURE RESEARCH

This paper presents the research plan and the framework to be used for describing the dependencies between strategic production characteristics and competitive advantages. The paper gives also an overview on Hidden Champion companies focusing on their competitive advantages. In addition, the risks associated with the future research are evaluated. The research is in early stage, but it seems to have potential to answer to some critical challenges in current industrial management.

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