

MANAGERIAL MODEL MOPTIS

- Modify Processes to Improve Sales

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Abstrakt

Tento příspěvek popisuje konstrukci a účel manažerského rozhodovacího modelu MOPTIS. Model MOPTIS bude po dokončení určen pro manažery malých a středních strojírenských podniků a jeho účelem bude získání přesnějšího obrazu o odbytovém potenciálu finálního produktu na vybraném zahraničním trhu. Model by měl napomoci lepšímu rozhodování o vhodné exportní strategii, konkrétně o tom, zda na daný trh s produktem vstoupit, a případně jakou formu vstupu zvolit při zachování aktuálních vnitropodnikových procesů. Model by měl také umožnit simulovat různá nastavení vnitropodnikových procesů při různých variantách vývoje trhu, to vše za účelem zvýšení prodejů.

Abstract

This article explains purpose of the managerial decision-making model MOPTIS and describes its construction. Model MOPTIS is being designed for managers of small and medium size engineering companies in order to help them reveal export potential of its final products on selected foreign markets. Model should enable taking more accurate decision about proper export strategy, especially whether to enter the given market and which entry mode to choose, taking into consideration existing business processes. This model should also allow simulation of various setting of business processes for various market development scenarios with the aim of increasing sales.

Key words

Foreign export strategy, Value-added chain, Business processes, Product sales potential, Market research, Market analysis, Comparative analysis, Industrial enterprise, Multiple-criteria decision-making

1. Introduction

Today not many Czech industrial enterprises manage systematically their foreign export endeavor. This includes companies of all sizes. We could look for the reason in lack of experience, ignorance of foreign markets and absence of strategic goals. The Czech industrial sector was heavily affected by wild transition times. Many entities disappeared, many were sold out to foreign capital and were consumed by multinational corporations just to become an insignificant cell of their production chain and just a few new emerged. Last twenty years were not enough for the Czech companies to recover and acquire in-depth knowledge and know-how to implement full-scale and systematic export policy in order to succeed in the international contest. As domestic market does not provide enough space for consistent growth and risk diversion, decisions related to foreign export strategy and policy are thus of

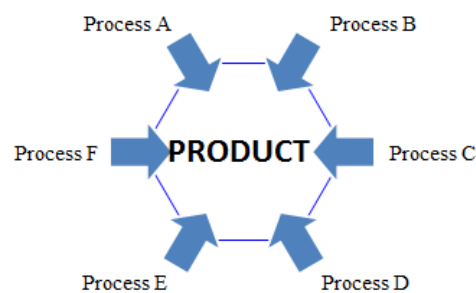
major importance and definition of achievable export goals shall be today a key activity of any industrial company.

As a representative of a trading house my task is to facilitating transactions between a home country and foreign countries. We either re-sell products or work on the commission basis. The pool of closest partner companies ranks over 30 Czech manufacturers of various sizes, more or less related to aviation industry. What I noticed is that many of the companies have only one or two key customers/foreign markets, which generate most of the annual revenues. And instead of the “shark” approach, that after establishing foothold on one market all their efforts and financial means would be redirected to conquer another one, they seem to be satisfied with generating sufficient turnover and profit to keep the factory running and maybe distribute some dividends. Their policy towards foreign markets processing is chaotic, usually based on ah-hoc attempts and as such rarely brings any results.

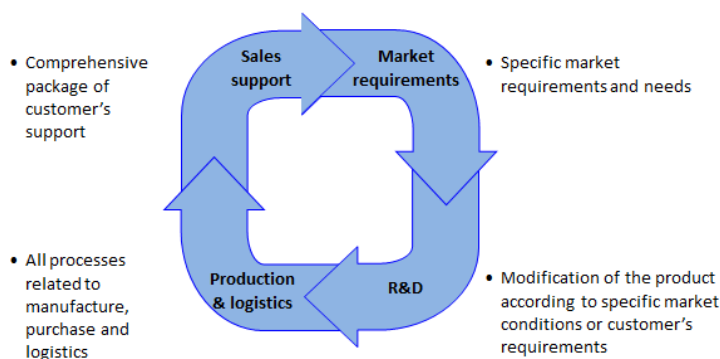
These were the circumstances under which I decided to develop an open managerial concept-model, which would replace solely intuitive decisions with decisions made after extensive and wide-scale systematic analysis. Such a model would serve as a tool for various manufacturers in order to consolidate their export endeavor, make them understand linkage between company’s internal processes, product characteristics and export sales.

2. Model MOPTIS

Today not many Czech industrial enterprises manage systematically their foreign export endeavor. Decisions are usually intuitive as a response to ad-hoc opportunities and are thus similar to ‘betting on horse races’. Business departments especially R&D, production and sales department are living in their own separate worlds, each following its own strategy and ambitions. R&D struggles to come up with a state of the art product, production aims to meet deadlines and quality targets, salesmen complain about insufficient



Pic. 1. Business processes define product's characteristics



Pic. 2 Continual flow of processes

performance and product characteristics and push R&D and production to accept new solutions as per needs of end users. The complex knowledge of existing business processes and their impact on company’s sales should start latest on the level of middle management in order to be efficient in implementation of company’s strategy and accomplishing given goals.

Model MOPTIS perceives industrial enterprise as a circulating flow of consecutive processes. Its final product is a result of these processes with its given characteristics. On the opposite side there are foreign markets with their own specifics. Our model should give us answer if

the existing business processes generate a product eligible for the questioned market and if so, what shall be the proper mode of entering and marketing. Since processes may be always modified and since no foreign market neither intercompany environment incl. for instance sub-suppliers is indifferent to changes in time, model MOPTIS should allow simulation of impacts of various settings of business processes as well. And thus be ready to react without delay to various market developments. In a certain way MOPTIS is classical Multi Criteria Decision Analysis concerned with structuring and solving decision and planning problems involving multiple criteria.

2.1 Business Processes and product characteristics

After defining what the model should look like and should do, comes the stage of its actual construction. Certain simplification of reality will be necessary; this is the cost of every managerial model. As a first step it will be necessary to identify core business processes which give added-value to the selected product. They are portrayed then in the product characteristics. For instance R&D efforts will result in application of advance technology and better performance or high production costs will make the product less price competitive. The current concept of the model I present here works with seven product characteristics.

- Price competitiveness
- Technological competitiveness – product performance
- Product support available on the export market
- Possibility of transferring know-how – this is seen as a modern tool of supporting sales, especially in less developed countries or in countries with heavy import duties
- Possibility of costs saving – achievement of synergy effect in case the manufacturer has other business activities on the export market
- Product political, social or environmental limits
- Technological adequacy for targeted market

This list of characteristics may not be definite, but will be sufficient for this study.

2.2 Market Analyses

In the second step we need to do research and do analysis of the target market. There are again many attributes which we can and should follow, but we limit them again only to the six following, which corresponds with the product characteristics.

- Level of price competition – Price levels are usually different on every market
- Level of technological competitiveness – What technology is used by our competitors which already established on the market?
- Strategic fits with other businesses – Does the manufacturer has other business there? Can the local office, staff or warehouse be used for distribution of the new product as well?
- Need for know-how transfer – Some countries insist on partial or full know-how transfer.
- Need for product support – How demanding are the customers, are there facilities where our product can be serviced?
- Social, political regulatory and political factors – Does the product involve components of an origin which is politically not acceptable? Are there any other regulations applicable on our product?

- Level of market technological advancement – Does the product represents a technology which is too advanced for the territory, or on the contrary obsolete? Advance technologies' might not be correctly operated and maintained.

However, there are more market attributes which we need to consider. For instance the market size and growth expectations will influence the total expected sales. Or the model as is now, does not consider territorial risks that might result in unexpected investment losses. Such attributes could be added in to the model for instance in the form of new variables.

$$PTP = (P_p/M_p) * S * O / R$$

PTP – product's total potential

P_p – product potential

M_m – market potential

S – market size

O – market openness

R – risk coefficient

2.3 Mathematical model and Criterion space

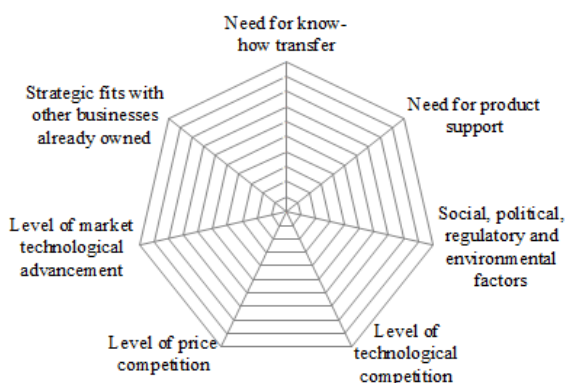
As mentioned already above first part of the model MOPTIS - (P_p/M_p) is in some of its characteristics similar to classical multi criteria decision analysis. It works with selected 7 criteria and each criterion has scale 1 to 10. The more points in each criterion the product receives, the better. We will thus be interested in such situations where our product performs well in most of considered criteria. However, it is unlikely to have a product that performs well in all considered criteria. Typically, our product performs well on some markets and poorly on other markets.

Mathematically, the problem can be described as "max" q , subject to $q \in Q$, where q is the vector of k criterion functions and Q is the feasible set, $Q \subseteq R^k$, R^k stands for octant in k dimensions. The quotation marks were used to indicate that the maximization of a vector is not a well-defined mathematical operation. Weights of criteria are based on individual preferences of a decision maker. Eliciting the weights of different criteria will be challenging, however, incorporating weighted linear function into the model would give us opportunity to tailor the model more precisely to the needs of a decision maker. (See picture 5.)

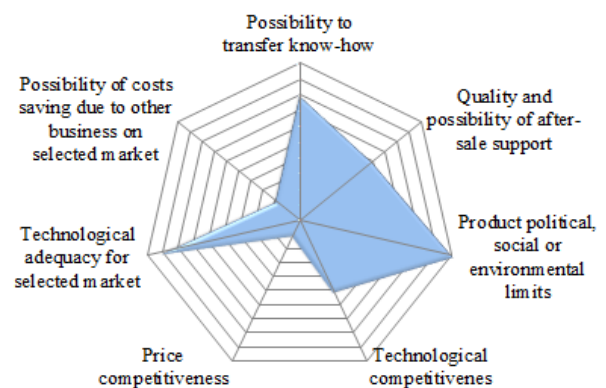
2.4 Graphical illustration of the model

A two dimensional graphical visualization will allow for a better evaluation of the model's and easy interpretation.

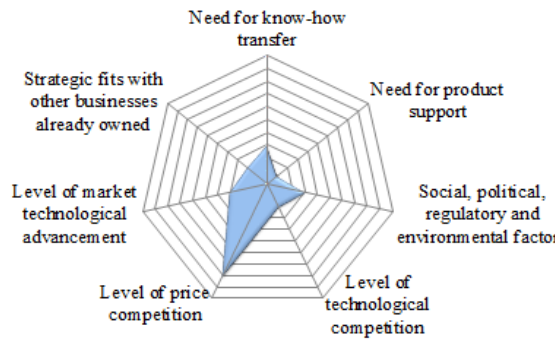
Market characteristics



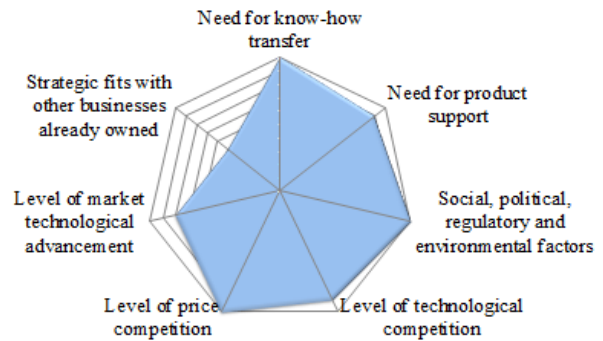
Product characteristics



Pic. 3 . Comparison of product and market characteristics - The targeted market is represented by a “spiders net” on the left side. In this case decision maker gives the same importance to all criteria. The size of the market should correspond to the scale. For instance in case of big markets we use the scale 1-100, for small markets 1-10. The picture on the right side shows already a “Blue pie” which represents the sale potential of a product. The bigger pie we have, the better perspective the product has (P_p). Sales potential we compare with maximal market potential.



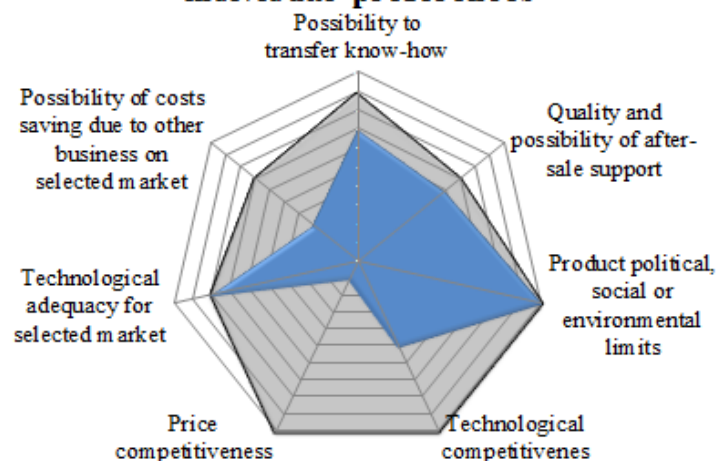
Pic. 5. A non-perspective situation



Pic. 4. A favourable situation

Pic. 4 and 5 . Picture 5 shows a situation when our product probably will have little potential to succeed on targeted market. On the other hand on Pic.4 we see that our product approaches maximal values in 5 out of 6 criteria, which gives the decision maker certain hopes that the product could be successful. Our ratio (P_p/M_p) will be thus bigger than in the first case.

Criteria weighted according to individual preferences



Pic. 6 . Many parameters are subject of individual preferences. Picture 6. Shows situation when decision maker gives different importance to each criterion. Also we see that such decision reduces the market potential (M_p).

3 Conclusion

This article offers only an unfinished concept of a new managerial model for assessment of export opportunities. We will never be able to eliminate subjective opinions out of the model completely and it is not the purpose. Subjective feeling will be projected in the types of selected criteria, in the scales, in the evaluated parameters of our product and possibly in the weights we assigned to the criteria. At the same time model will incorporate many “solid” data such as price comparison, market size or production costs and thus offers balanced combination of both.

Also, the current concept misses many important variables such as evaluation of territorial risks. Analysis of country risk is always a fundamental step in the process of building and monitoring an international portfolio. Moreover it does not deal with market openness, i.e. whether there are any entry barriers. These and many other factors influence the decision makers mind and will have to be added later on. However, it is the simplicity and easy interpretation, which should be the model’s main advantages. And if well designed, including user-friendly interface, it might become a useful tool.

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