Evaluation Model of the Success of SMEs in the Internationalization Process

Lea Kubíčková, Aleš Peprný, Šárka Nováková

Abstract: The paper deals with evaluating the success of small and medium-sized enterprises in the international process. The process of internationalization of small and medium-sized businesses is frequently discussed topic. In this article is discussed a simple evaluation model that could be used by SMEs to determine not only how strong are they compared to competitors, but also at what level are their success factors in the process of internationalization. A lot of SMEs have problems to identify the key success factors in the process of internationalization, as well as to determine in what areas, that success in foreign markets determine, have their strengths and weaknesses, therefore we decided to focus on this problem and there is presented a proposal of a simple model of performance evaluation of small and medium-sized enterprises in this paper. The key success factors of internationalization process are identified according to a survey of 40 small and medium engineering companies and also the use of the knowledge of literature and similar surveys conducted abroad. The key success factors of internationalization process were grouped into 4 categories: 1) Key employee, 2) Internationalization rate, 3) International marketing, 4) Efficiency of foreign trade. The proposed rating system because of its graphical output simply shows what the area has a rated entity weaknesses and where its strengths has. The model was applied to data obtained from a above mentioned survey and in the paper there are presented specific examples of graphical output of the model for selected companies. For SMEs it is often difficult to succeed and then to maintain the position in the foreign markets than for large multinational companies. Large enterprises have more opportunities to detailed analysis and evaluation of factors that have to determine their success in the field of internationalization. In the current literature there are not many models which SMEs have shown how easily assess their situation in internationalization process. The authors followed up on previous efforts to design assessment method of evaluating the international success of small and medium sized enterprises (Peprný, Kubíčková and Rovný, 2010), however they tried to simplify the previously presented method to be applicable to SMEs in practice and they have tried to adapt the evaluation model to the needs of small and medium sized companies. The proposed rating system could be further adjusted in practice. It is possible to modify the weight of individual blocks as needed for particular businesses.

Key words: Internationalization Process · Key Factors of Success · Evaluating Model · SMEs

JEL Classification: M 16

1 Introduction and literary survey

For small and medium-sized enterprises in the internationalization process is, in any event, very important to know which factors are the key factors for their success in the internationalization process. There are presented many theories in the current literature on which it is generally possible to determine which factors are important to SMEs in the internationalization process, but not many simple models that have to be small and medium-sized businesses helped to assess their particular situation.
The authors of this paper therefore focused on creating a simple model to help SMEs assess their situation in the internationalization process. Proposed model can help small and medium-sized businesses not only to assess how they are doing in the internationalization process and at what level are their key factors of the internationalization process, but the model can also help to companies to compare their situation with competitors. With the proposed model, SMEs can easily discover in what areas they have their strengths and in what areas the weaknesses. Knowing this fact it can help them to work on improving weaknesses.

In connection with the internationalization theories the issue of key success factors in the internationalization process of SMEs is often asked question. Many surveys and researches were carried out to sum up the key factors of internationalization process success. And not only identification of the key success factors but also evaluation of the international process is often discussed problem. Authors have previously focused on the possibility of quantifying the factors that determine the success of SMEs (Peprný, Kubíčková and Rovný, 2010), where according to the multidimensional evaluation indicators small and midsize businesses can be divided into 3 groups: "fail", "successful" and „very successful." This evaluation system monitors the proportion of export sales and profitability of international activities (both absolute and relative). Based on these data was then evaluated the overall success of SMEs in international activities.

SMEs, however, in practice, often have difficulty to determine which areas they have to improve to be more successful in the process of internationalization. Therefore authors decided to focus on creating a simple model of evaluation that have to be able to clearly demonstrate in which areas SMEs are doing well and vice versa, where the reserves are. The model also should show what specific individual quantitative and qualitative factors are affecting the success of each company. To sum up - the aim of this paper is to show a draft of simple evaluating system, which can help SMEs to value their key factors of the internationalization process success.

Internationalization of the firms is generally defined as the involvement in the international environment. The concept of internationalization in the literature varies widely by various authors, such as Beamish (1990) understands internationalization as a process by which firms increase their awareness of the direct and undirected effects of internationalization transactions on their future and create and manage transactions with other countries. Internationalization is one of the most persistent trends shaping the world economy. Its content is the establishment and deepening of economic relations between those different countries and between countries, between them, based on the gradual elimination of various barriers and converting some old national events on the international effects (Kunešová and Cihelková et al., 2006).

According Majerová (2007) the internationalization process of continuous and progressive interconnection of economies in the world economy, which runs through an expanding network of international relations. The process of internationalization can be also defined as “the process of increasing involves in international operations” (Welch and Luostarinen, 1988). The process essentially involves the adaption of firm operations like strategy, structure, resources etc., to perfectly fit the international environments. Furthermore, the degree of internationalization can be measured as foreign sales relative to total sales. (Welch and Loustarinen, 1993).

Deciding on the internationalization of business activities depends largely according to Pelmutter (Machková, 2009) on the corporate culture, shared values and the corporate management style. The EPRG framework defines the main management styles - ethnocentric, polycentric, geocentric and regiocentric. The internationalization process can be described as a gradual development taking place in distinct stages (Melin, 1992).
The international process can be clearly identified under two major schools: the models initially developed by Johanson and Wiedersheim-Paul (1975) and Johanson and Vahlne (1977), referred to as Uppsala models (U-models) and the Innovation-Related internationalization models (I-models) conceptualized by Cavusgil (1980). Both the I-models as well as the U-models emphasize on firm’s involvement in foreign market segments, both of the models view internationalization as a gradual incremental process. U-model is more often featured in international business literature. The entering of new markets by the company is usually perceived as a psychologically near. Many companies do not follow incremental stage approach but is often reported that they start their international activities immediately from their birth (Anderson, 2004). Literature defines them as “born globals” (e.g. Oviatt and McDougall, 1997). Although the “born global” phenomenon is relatively new phenomenon in International Business, it is described in many international literature, e.g. Knight and Cavusgil (1996) define “born globals” as “small technology oriented companies that operate in international markets from the earliest days of establishment”.

It is possible to find out various classifications of internationalization models in the literature, for example Li, Li and Dalgic (2004) divide theoretical approaches to internationalization processes into 3 main groups: the first is called “Experiential Learning”, where theories of Johanson and Vahlne (1977), or Lam and White or Cavusgil can be involved. The second group can be called “Systematic planning” (Root, 1987; Miller, 1993; Yip, Biscarri and Monti, 2000) and the third group involves theories from e.g. Boter and Holmquist (1996), or Coviello and Munro (1997). This group of theoretical perspectives can be called “Contingency perspective”.

In last few years there are many other authors who criticize all of these theoretical models of international process and they try to put together all known approaches and develop some hybrid models of internationalization process (e.g. Li, Li and Dalgic, 2004) which reconciles different theoretical perspectives and bears normative implications for managers. In their opinion this hybrid models can help specially to SMEs for examining the internationalization process, because the process of internationalization of small and medium – sized enterprises is different than the international process of MNEs. SMEs usually have limited resources; have less internationally experience than multinational MNEs and they often have to respond to international market opportunities in a very timely manner.

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Based on these data was then evaluated the overall success of SMEs in international activities. SMEs, however, in practice, often have difficulty to determine which areas they have to improve to be more successful in the process of internationalization. Therefore authors decided to focus on creating a simple model of evaluation that have to be able to clearly demonstrate in which areas SMEs are doing well and vice versa, where the reserves are. The model also should show what specific individual quantitative and qualitative factors are affecting the success of each company. To sum up - the aim of this paper is to show a draft of simple evaluating system, which can help SMEs to value their key factors of the internationalization process success. This elementary model was
created as a simple tool for SMEs evaluation of their performance in international trade and for comparison with competitors.

2 Materials and methods

SMEs in Czech Republic as well as in the other countries of EU play very important role in the international arena. In the last three decades and led to an increase in the number of SMEs relative to large firms and SMEs have become an important market sector of the economy. Today, the driving force behind business, growth, innovation and competitiveness. SMEs are also an important factor in providing job opportunities. In the Czech Republic, 61.52 % of SMEs involved in the creation of jobs and 35.17 % of the GDP.

Economic and social benefits of SMEs, it is characterized by several faculties. These include in particular, that mitigating the negative effects of structural change, acting as subcontractors for large firms, create conditions for the development and introduction of new technology, create jobs at low capital cost, quickly adapt to the requirements and market fluctuations are a source of innovation and technological progress, employ nearly 60 % of active workers, involved more than half of GDP, completed in peripheral areas of the market that are attractive for larger businesses, decentralize business activities and help accelerate the development of regions, towns and villages.

Small and medium-sized businesses have many advantages in the market, but faced with a number of negative effects. The advantages of SMEs are particularly simple organizational structure that brings lower costs for company management and reduced bureaucracy, the setting up of the company capital is usually not as demanding as it is for large enterprises. Then there is flexibility - small and medium-sized businesses can react faster and more sensitive to changes than large corporations (with it even greater flexibility and ability to improvise).

Another advantage is less demand for energy and raw materials, SMEs also easier to look for small niche markets and to better apply to local markets, they can address the needs of individual customers. One positive aspect is also personal and direct contacts with the company owner and other employees the possibility of maintaining personal contact with customers. SMEs are considered as vectors of a large number of innovations.

The disadvantages include more difficult for SMEs to access foreign capital than larger companies, SMEs are unable to participate in a business where large investments are needed, often have a weaker position in the bidding for government contracts, they cannot afford to hire top professionals and scientists, have limited resources for promotion and advertising, their market share is low and often threaten the majors. SMEs also threatened, it is easier to fall into insolvency, especially in cases of insolvency of their customers. SMEs have also major problems with entry into foreign markets because they lack sufficient information on foreign legislation, potential partners, the market, the availability of counseling services at a lower level.

In 2008 was held the market research focused on the small and medium sized engineering companies. Engineering area was chosen because this area is quite a lot of SMEs who have managed to succeed in foreign markets. Overall 339 respondents were interviewed by e-mail questionnaires, only 47 responses came back, etc. return questionnaires was 13.86 %. There were some not correctly answered questionnaires, so only 40 responses were processed. The obtained data were processed by traditional statistical methods, there were calculated absolute and relative frequencies. The aim of the research was to determine which factors are for success in the internationalization process of SMEs the essential.
Results of the questionnaire were divided into 5 basic areas: general information, the degree of internationalization, the profitability of foreign trade operations, international marketing and key employees. It was established six hypotheses that have to be verified on the basis of data obtained.

As an example we can cite the following hypothesis:

There is no dependency between the percentage of core employees and size of sales from abroad.

Test of the correlation coefficient was used, T is test the criterion:

\[ H_0: \rho_{yx} = 0 \quad H_1: \rho_{yx} > 0 \]

\[ T = \frac{r_{yx}\sqrt{n-2}}{\sqrt{1-r_{yx}^2}} \cdot \frac{0.2675\sqrt{40-2}}{\sqrt{1-0.2675}} = 1.7113, \quad (1) \]

\[ \alpha = 0.05 \text{ is } \mu_{1-\alpha} = 1.68595 \]

1. $1.7113 > 1.68595$ hypothesis is not reject

\[ \alpha = 0.01 \text{ is } \mu_{1-\alpha} = 2.42857 \]

1. $1.7113 < 2.42857$ hypothesis is reject

At the level of significance 0.05 the presumption of the null hypothesis was rejected since there is a significant difference. With a 5 % risk of error is possible to argue that there is dependence between the size of revenues from abroad and the percentage of key employees.

In the article there were used the standard scientific research methods as the method of comparison, the method of induction involving the application of theoretical knowledge to concrete practical problems and the synthesis method, which consists in composing the partial findings and conclusions together. The primary data collection method was used in the marketing research. When processing the results of the survey following methods were used:

a) Absolute and relative frequency:

\[ P_i = \frac{n_i}{\sum_{i=1}^{k} n}. \quad (2) \]

b) Test hypotheses about the correlation coefficient.

It tests the hypothesis that the variables $x$ and $y$ is a linear relationship, namely that the correlation coefficient is zero.

\[ H_0: \rho_{xy} = 0 \]

\[ H_1: \rho_{xy} > 0 \]

As a test criterion is used in the formula:

\[ T = \frac{r_{xy}\sqrt{n-2}}{\sqrt{1-r_{xy}^2}}. \quad (3) \]

Where:

\[ r_{xy} = \text{correlation coefficient}; \]

\[ n = \text{range of the file}. \]

The one-sided alternative $H_1: \rho_{xy} > 0$ is the critical field defined by inequalities:

\[ T > t_{1-\alpha} (resp. u_{1-\alpha}). \quad (4) \]

When verifying the hypothesis of statistical hypothesis can be rejected or not rejected. Always against each other build and test an alternative hypothesis (Hindls, 2007).

a) Test hypotheses about the relative frequency.
It tests the hypothesis that the relative frequency of certain variations in the basic character set is equal to a certain number.

\[ H_0: \pi = \pi_0 \]
\[ H_1: \pi > \pi_0 \]

As a test criterion is used in the formula:

\[ U = \frac{p - \pi_0}{\pi_0(1 - \pi_0)\sqrt{n}}. \quad (5) \]

Where

- \( p \) sample relative frequency
- \( \pi_0 \) value of the null hypothesis
- \( n \) range of the file

Definition of critical fields for different levels of significance is following:

<table>
<thead>
<tr>
<th>Level of significance</th>
<th>Critical level</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \alpha = 0.05 )</td>
<td>( U \geq 1.645 )</td>
</tr>
<tr>
<td>( \alpha = 0.01 )</td>
<td>( U \geq 2.326 )</td>
</tr>
</tbody>
</table>

1. Area of triangle: \( S = \frac{b \times h}{2} \), \quad (6)

where:

- \( b \) base of triangle,
- \( h \) high of triangle.

3 Results and discussion

To create the model it was necessary at first to aggregate into 4 groups all factors, which can determine the internationalization process. Authors divided this factors into following groups: 1) Key employee, 2) Internationalization rate, 3) International marketing, 4) Efficiency of foreign trade. For more details see figure 1. The crucial principle in this suggested evaluation system is the fact, that each of these four groups has the same importance in the evaluation system.

The rating system is based on subjective evaluation, every group contains 4 questions and absolute maximum per one question is 30 points. Exact 4 point rating scale for every particular question was set up and with each stage range was assigned a certain amount of points. The minimum levels were determined 7.5 points and the maximum was 30 points, as mentioned earlier (for example see table I). This scale was used with regard to the graphical model output.

Particular questions and evaluation scale for every individual question was set up from authors experience gained by more than 4 years researching the internationalization process area and also from results of above mentioned research of 40 Czech SMEs.

For example, the issues listed in Table I is based on the assumption that exists a relationship between the percentage of key personnel and size of sales from abroad. This dependence was verified by testing hypotheses. The maximum number of points is assigned to the variant of 75 – 100 % while the lowest score to the variant accounts for 0 – 25 %.

The evaluating system should help to SMEs to assess their internationalization abilities easily therefore the model has a graphical output. There were two basic requirements for graphic design - easy workability and easy interpretation of results. Graphic output of the ranking system is based on the following principle: the sum of the points in each of the 4 main groups of issues will be delivered to the appropriate axis. The resulting quadrilateral will show us, in what area company’s
strengths or weaknesses are. For accurate comparison of outputs for various periods or for comparisons of results between individual companies calculation of the area of quadrangle is necessary.

Figure 1 Aggregating key factors into 4 groups

<table>
<thead>
<tr>
<th>Key employee factors</th>
<th>Internationalization factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Language knowledge of key employee</td>
<td>1. Foreign market entrance form.</td>
</tr>
<tr>
<td>2. Previous experiences of key employee with international trade</td>
<td>2. How long after company foundation foreign market entrance?</td>
</tr>
<tr>
<td>3. Training or courses focusing on international trade</td>
<td>3. Number of countries where company is exporting to</td>
</tr>
<tr>
<td>4. Share of key employee</td>
<td>4. Countries where company is exporting to</td>
</tr>
</tbody>
</table>

International marketing factors
5. Standardization of exporting products
1. Standardization of marketing
2. Amount of information about foreign market before exporting
3. Frequency of communication with foreign business partners

International trade efficiency
1. Share of revenues from abroad to total sales
2. Share of abroad soled products to total sales
3. Foreign trade efficiency
4. Foreign sales per one employee

Source: own results

Table 1 Example of point rating system

<table>
<thead>
<tr>
<th>Group of questions</th>
<th>answer</th>
<th>points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Key employee</td>
<td>4</td>
<td>120</td>
</tr>
<tr>
<td>What is the percentage of employees that have to be involved in more than 50% of the foreign activities of your business?</td>
<td>0 – 25%</td>
<td>7.5</td>
</tr>
<tr>
<td></td>
<td>26 – 50%</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>51 – 75%</td>
<td>22.5</td>
</tr>
<tr>
<td></td>
<td>76 – 100%</td>
<td>30</td>
</tr>
</tbody>
</table>

Source: own results and own evaluation

Calculation of the area of the quadrangle has been simplified as the calculation of the area of two triangles, where "b" is the base, in this case it is the sum of scores of questions in the groups "key employees" and "performance of foreign operations". Similarly, "h" is the height of the triangle and is obtained as the sum of points in the group "Internationalization factors".

The second triangle area is calculated by analogy, the base remains the same and the height is the sum of points from the group of "International marketing" (see figure 2). The last phase of the calculation is to give the ratio of the actual area to the maximum possible area. The maximum possible area of quadrangle (in this case a square) is 28 800 square units.

Proposed evaluation model was applied to 40 engineering SMEs, required information and data were obtained from the above mentioned survey. Best results are achieved business where quadrangle area rate was 73.69 % and the worst appeared firm, where quadrangle area rate was 22.85 %. For more details about particular score see table 2.
**Figure 2** Calculation of the area of the quadrangle

![Graphical representation of the quadrangle](image)

**Source:** own results and own evaluation

**Table 2** Point evaluation of companies

<table>
<thead>
<tr>
<th>Company number</th>
<th>IF score</th>
<th>ITE score</th>
<th>IM score</th>
<th>KE score</th>
<th>Area rate in %</th>
<th>Company number</th>
<th>IF score</th>
<th>ITE score</th>
<th>IM score</th>
<th>KE score</th>
<th>Area rate in %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>72</td>
<td>75</td>
<td>76.5</td>
<td>63.5</td>
<td>35.71</td>
<td>21.</td>
<td>62</td>
<td>57</td>
<td>55.5</td>
<td>55</td>
<td>22.85</td>
</tr>
<tr>
<td>2.</td>
<td>57</td>
<td>102</td>
<td>82.5</td>
<td>77.5</td>
<td>43.47</td>
<td>22.</td>
<td>97</td>
<td>87</td>
<td>75</td>
<td>63.5</td>
<td>44.94</td>
</tr>
<tr>
<td>3.</td>
<td>82</td>
<td>81</td>
<td>76.5</td>
<td>84.5</td>
<td>45.54</td>
<td>23.</td>
<td>82</td>
<td>117</td>
<td>90</td>
<td>102</td>
<td>65.40</td>
</tr>
<tr>
<td>4.</td>
<td>57</td>
<td>87</td>
<td>82.5</td>
<td>81</td>
<td>40.69</td>
<td>24.</td>
<td>102</td>
<td>105</td>
<td>90</td>
<td>69.5</td>
<td>58.17</td>
</tr>
<tr>
<td>5.</td>
<td>62</td>
<td>63</td>
<td>75</td>
<td>71</td>
<td>31.87</td>
<td>25.</td>
<td>62</td>
<td>90</td>
<td>82.5</td>
<td>53.5</td>
<td>36.00</td>
</tr>
<tr>
<td>6.</td>
<td>67</td>
<td>72</td>
<td>75</td>
<td>57.5</td>
<td>31.93</td>
<td>26.</td>
<td>82</td>
<td>108</td>
<td>75</td>
<td>90.5</td>
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<tr>
<td>7.</td>
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<td>76.5</td>
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<td>35.47</td>
<td>27.</td>
<td>87</td>
<td>84</td>
<td>69</td>
<td>47.5</td>
<td>35.61</td>
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<tr>
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<td>67.5</td>
<td>86</td>
<td>47.92</td>
<td>28.</td>
<td>62</td>
<td>62</td>
<td>64.5</td>
<td>66.5</td>
<td>28.22</td>
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<tr>
<td>9.</td>
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<td>81</td>
<td>60</td>
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<td>120</td>
<td>97.5</td>
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<td>71</td>
<td>45.68</td>
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<td>95</td>
<td>59.74</td>
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<td>71.5</td>
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<td>16.</td>
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<td>111</td>
<td>75</td>
<td>83</td>
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<td>75.5</td>
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<td>75</td>
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<tr>
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<td>61.5</td>
<td>72.5</td>
<td>34.19</td>
</tr>
</tbody>
</table>

**Source:** own results and own evaluation

Legend for table 2: IF - Internationalization factors, ITE - International trade efficiency, IM - International marketing, KE - Key employee.

For graphical comparison of the best and worst companies see Picture 3. The diagram shows the difference between the rated companies – it is possible to compare them and see in which areas the
individual firm has a room for improvement. At the left size is company No. 21 – the worst one, at the right size is company No. 33 – the best one.

For SMEs it is often difficult to succeed and then to maintain the position in the foreign markets than for large multinational companies. Large enterprises have more opportunities to detailed analysis and evaluation of factors that have to determine their success in the field of internationalization. In the current literature there are not many models which SMEs have shown how easily assess their situation in internationalization process.

The authors followed up on previous efforts to design assessment method of evaluating the international success of small and medium sized companies (Peprný, Kubičková and Rovný, 2010), however they tried to simplify the previously presented method to be applicable to SMEs in practice and they have tried to adapt the evaluation model to the needs of small and medium sized businesses. The proposed rating system could be further adjusted in practice. It is possible to modify the weight of individual blocks as needed for particular businesses. When company according to the analysis of its situation knows that in a specific area has the weakness, it can focus on this area just by adjusting the weights. It is clear that knowledge of the strengths or weaknesses of the company gives some competitive advantage over other competitors, but in the practice SMEs in the internationalization process face the question of determining which factors most significantly affect their eventual success or failure in the process of internationalization.

Abroad have been many surveys aimed at finding an answer to the question "What are the crucial factors in the process of internationalization?". The authors have realized the survey of engineering SMEs and the outputs of this research fully correspond with the evidence indicates that foreign authors. Identified key success factors were then aggregate into organized groups that have to pertain together. The proposed model is very simple, the evaluation range of factors have been deliberately designed with regard to the graphical model output. Graphical output of the proposed evaluation model shows in which areas the assessed the company has some reserves and in which areas is doing well.

**Figure 3** Examples of graphical output for particular evaluated company.

![Company No. 21](image1)

![Company No. 33](image2)

Source: own results and own evaluation
4 Conclusions

The ability of the internationalization of Czech companies is currently often analysed topic and a specific of the process of internationalization of small and medium-sized enterprises is often pointed out in these discussions. Small and medium enterprises in the Czech Republic, as well as in other EU countries, are very important factor in foreign trade. For many of these firms is quite difficult to identify key success factors in the internationalization process, as well as to determine in what areas that the success determine the foreign markets, have their strengths and weaknesses.

The paper present a simple evaluation model for small and medium-sized enterprises, which are based on data collected from 40 small and medium enterprises and also the use of the knowledge of literature and similar surveys carried out abroad to key success factors in the internationalization process. These factors are grouped into four groups and the proposed rating system because of its graphical output simply shows in what the area has a rated entity its weaknesses and where its strengths are. The paper contains an example of model application for small and medium-sized engineering companies.

References


