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ORIGINAL PAPER

RANKING OF OPPORTUNITIES FOR IMPLEMENTING THE OMNICHANNEL CONCEPT

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ABSTRACT. **Background:** The paper is devoted to implementation of the omnichannel concept using the ranking of opportunities. Opportunities were obtained from a SWOT/TOWS analysis and Thurstone's method is used for ranking. The SWOT/TOWS analysis is one of the most basic analytical methods and the result of this analysis indicates a general strategy. Based upon previous authors' experiences in using SWOT/TOWS, we can conclude that this analysis is often insufficient for decisions to be taken, as it lacks information on what factors should be prioritized over others in implementing the chosen strategy. Further analysis is required to confirm the next steps should be in implementing corporate strategy, and this analysis is performed using different methods.
Methods: Based on the previously developed SWOT/TOWS analysis, the authors created an algorithm for making decisions in logistics in terms of implementing the concept of omnichannel. In the methodology, an algorithm merging SWOT/TOWS analysis with Thurstone's method is presented. The results of this paper show how making decisions in logistics can be more accurate using Thurstone's method in conjunction with SWOT/TOWS analysis. Thurstone's method is used to sort all factors in implementing the omnichannel concept.
Results: A grouped list of opportunities from the most critical to the least crucial correspond with the present state of the market. Using Thurstone's method together with SWOT/TOWS analysis will result in a more complete set of data to use in the decision-making process in implementing the omnichannel concept. Combining the results of the two analyses creates a methodology for ranking opportunities for implementing the omnichannel concept.
Conclusions: The method for making decisions in implementing the omnichannel concept presented here gives more information for managers than using each of these analysis separately. The main advantage of using both analyses is that risk is reduced during implementation and a list of factors is produced that can be used in the following decisions.

Key words: omnichannel, e-commerce, decision-making, SWOT, TOWS.

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INTRODUCTION

The process of implementing new management concepts that are to significantly affect the competitive position of an enterprise requires strategic analysis. The key here is to identify opportunities and threats of the implementation process. Such knowledge allows you to plan activities that will lead to success by using the most important opportunities and reducing or eliminating key threats. Managers in the analysis process usually reach for well-known tools. One such tool is SWOT / TOWS strategic analysis [Pickton 1998, de Houben 1999, Dyson 2004]. This analysis provides the image of the company (its strengths and weaknesses) and its surroundings (opportunities and threats) and then allows an overall strategy of operation to be selected. In the decision-making process necessary for effective implementation of a selected strategy in relation to the entire company or the analysed area of operation

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(e.g. distribution logistics), general guidelines resulting from the SWOT / TOWS analysis are usually not sufficient.

Omnichannel is described in "Competing in the age of omnichannel retailing" as an evolution, where the distinctions between physical and online retailing will vanish, turning the world into a showroom without walls [Brynjolfsson, Yu Jeffrey, Mohammad 2013]. A similar definition is presented by Baird and Kilcourse [2011], Rigby [2011] and Beck and Rygl [2015]. Based on these definitions, the omnichannel criteria is that the customers should not see any difference using any of the retail channels available. Retail channels can be used in different sequences. The customer can first search for information online and then go to the store. This process is called webrooming [Flavian et al. 2016]. The other sequence of using retail channels is to first gather information in physical stores and then buy online, which is called showrooming [Neslin et al., 2014]. However, it is common not only to use one retailer channel, but to use different channels of multiple retailers for planning and preparation purposes before purchasing [Chiou et al., 2012, Chiu et al., 2011]. All retailers' actions have one common aim – to let the customer have the best possible experience during the process of purchasing [Blom et al., 2017, Huré et al., 2017, Lemon and Verhoef, 2016, Sit et al., 2018]. Each retail channel is determined by many factors [Harris et al., 2018, Verhoef et al., 2007]. Usually it is a strategic decision for a company to determine what channel should be prioritized by allocating necessary resources to this channel.

When implementing the omnichannel concept, the validity of opportunities for implementing the omnichannel can be assessed differently by each expert, especially bearing in mind that in the literature it is emphasized that the process of integrating customer service channels is difficult to implement, costly and risky [de Carvalho 2014]. Most often, all the negative effects of transformation affect the customer's perception of the company and, as a result, the competitive position of the company [Bell 2014].

A valuable complement to the analysis can be the Thurstone method [Sagan 2009]. The skilful combination of SWOT / TOWS analysis and the Thurstone method allows better effects to be achieved in the decision-making process in the form of fuller information to be used while implementing the strategy.

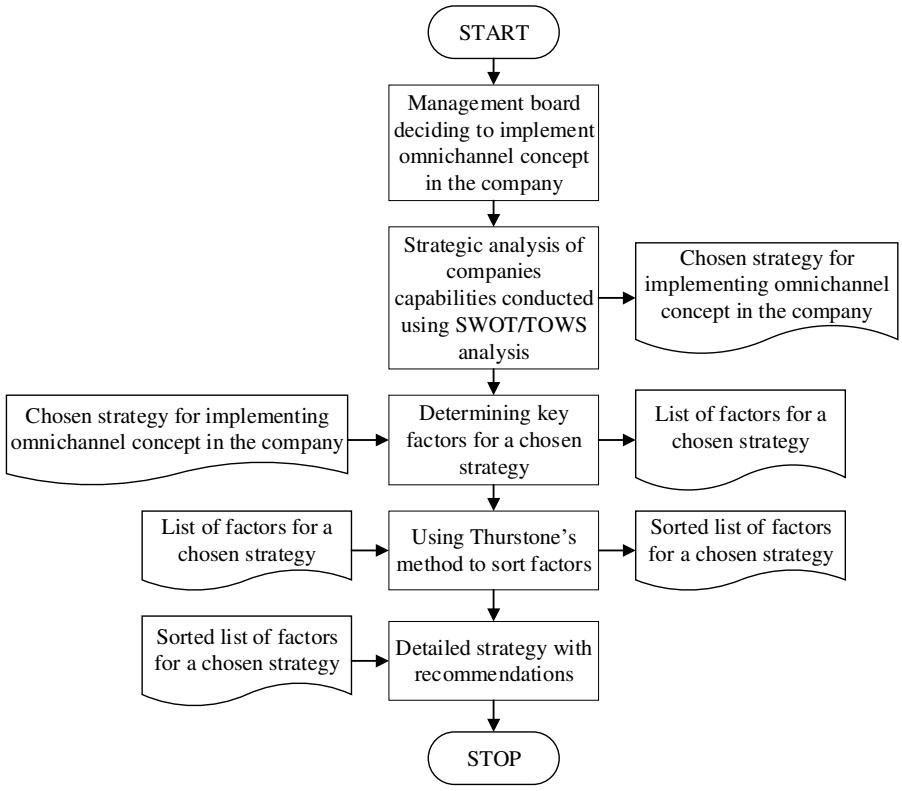
The article presents a case of such an analysis carried out in order to implement the omnichannel concept in distribution. The omnichannel approach in enterprises consists in unifying standards for each customer service channel, especially in the field of distribution and improving customer satisfaction in each service channel [Piotrowicz 2014]. In the article, the authors use the results of previous surveys carried out on a group of specialists from enterprises and clients that provided a generalized comparison of opportunities and threats regarding implementation of the omnichannel concept [Wojciechowski, Hadas 2018]. To analyse opportunities and threats, questionnaire surveys were used, because the aim was to obtain recommendations for the logistics and sales departments of various companies, not to analyse a single case study. As a final result, SWOT / TOWS analysis was used to determine which strategy should be used to implement the concept in the enterprise for diagnosed external factors (opportunities and threats) [Wojciechowski, Hadas 2018].

The results obtained provide the basis for further analysis presented in this article, because, as mentioned above, the use of the SWOT / TOWS analysis is insufficient, due to there being no information on which factors require more and which less attention in the implementation process. The Thurstone method was chosen to deepen the analysis. After completing the work, the analysis methodology was also formulated as a way of combining SWOT / TOWS analysis with the Thurstone method in the decision process.

METHODOLOGY OF ANALYSIS

The process of determining the rank of opportunities for implementing the omnichannel concept was carried out according to the following methodology (Fig. 1). In the first step, based on the results of the survey and according to the classical

SWOT/TOWS methodology, a strategy for implementing the omnichannel concept was chosen. In the second step, on the basis of expert assessments, the Thurstone method was used to create a ranking of opportunities that should be used in the process of implementing the concept.



Source: own work

Fig. 1. Methodology of determining the ranking opportunities for implementation the omnichannel concept

The SWOT / TOWS analysis shows that an enterprise that decides to implement the omnichannel concept in its distribution should use an aggressive strategy, i.e. maxi-maxi [Wojciechowski, Hadas 2018], in order to achieve the best possible effect. This aggressive strategy consists in making the greatest possible use of emerging market opportunities, taking over similar enterprises, concentrating the entire company's efforts on using only opportunities with the greatest potential and strengthening its own position on the market. All of these activities should be carried out by the company using the chances which result from the SWOT / TOWS analysis. However, this analysis does not make it possible to easily determine which chances can give the best results and how many resources should be devoted to each opportunity. Therefore, using the Thurstone method in the strategy implementation process can provide valuable information for managers. On this basis, and using the results obtained as to the choice of strategy and the ranking of the opportunities, the decisions regarding the next actions in the field of exploiting the opportunities are more accurate.

The starting point for the Thurston analysis was the list of opportunities and threats presented in the article: Wojciechowski Hubert, and Lukasz Hadas, "Possibilities of Implementing Omnichannel Concept in Distribution-Opportunities and Threats".

The assumptions of the Thurston pair comparison method consist in making each expert determine which of the factors in a pair is more important. Such action is required for each pair, i.e. in the case described it is 8

factors, which results in 28 pairs for one expert to compare. In this article, it was decided to use the data collected from the questionnaire survey and compared the answers given by each of the experts in pairs. The method used is based on the original Thurston method, but changes have been made to the comparison logic and the use of the formula for comparison. The Thurston method of pairwise comparisons produces a ranking of the criteria tested.

The Thurstone method allows factors to be sorted, in this case opportunities, from the most to the least important ones. On this basis, the company gains the knowledge of how many resources it should devote to the use of individual opportunities to gain a competitive advantage.

RANKING OPPORTUNITIES

During the research, experts took part in a survey. Expert were chosen from companies based on their general knowledge, and the strengths, weaknesses, opportunities and threats to the companies they work for. Based on results of the survey, 33 responses from experts were taken into consideration. Each expert determined whether each of the opportunities and threats used in the implementation process of omnichannel concept opportunities is critical (5), very important (4), important (3), not important (2) or not important (1). Table 1 presents the results of the survey.

Opportunities:

O1. Possibility of better monitoring customers' behaviours and using data collected in order to improve marketing strategy.
O2. Potential lower costs of single deliveries.
O3. Possibility of adjusting latest technology to changing market needs.
O4. Customers can change their daily shopping habits to use smart home devices instead.
O5. Using autonomous cars in distribution
O6. Potentially lower distribution costs using omnichannel in comparison to traditional distribution, or even costless distribution if digital distribution is used.
O7. More customers can be reached, because more channels are available.
O8. Faster delivery, especially when distribution can be done right at customer's house.

Table 1. Opinions collected from 33 experts on opportunities and threats (1- least important, 5 - most important)

	O1	O2	O3	O4	O5	O6	O7	O8
1	4	2	5	4	2	5	5	4
2	5	3	5	3	3	3	4	5
3	5	4	4	5	2	2	4	3
4	4	5	5	4	4	5	5	4
5	5	5	4	4	4	5	5	5
6	4	3	2	3	4	4	3	3
7	3	3	3	3	2	3	4	3
8	5	3	5	5	5	4	5	5
9	4	3	5	5	5	4	5	5
10	4	4	5	4	3	4	5	3
11	2	2	2	2	3	3	3	3
12	5	5	5	5	2	5	5	5
13	5	4	5	4	5	3	5	3
14	4	3	4	3	4	4	3	3
15	5	5	4	3	4	4	5	4
16	3	2	5	4	3	5	4	4
17	5	2	5	3	3	4	4	5
18	4	5	5	5	4	5	5	4
19	5	5	4	5	4	5	4	5
20	5	2	5	4	2	5	5	4
21	4	3	2	3	4	4	3	3
22	5	2	2	3	4	5	5	2
23	3	3	3	3	2	2	4	3
24	5	3	5	5	4	4	5	5
25	4	3	4	5	5	4	5	5
26	4	5	5	2	3	4	5	3
27	2	2	3	2	3	3	3	3
28	3	4	3	3	4	5	5	3
29	5	5	5	5	2	5	5	5
30	5	4	5	4	5	3	5	3
31	5	4	3	2	3	1	5	5
32	4	3	5	3	4	4	3	3
33	3	3	5	3	3	5	5	3

Source: own work

Using the Thurstone method [Sagan 2009], the next step after the experts have answered the criteria weights is to develop a table of proportions, which is calculated using the formula:

$$f(n,m) = \frac{\sum_{i=1}^{j} \operatorname{sgn}(n_i - m_i)}{\sum_{i=1}^{j} \operatorname{sgn}|n_i - m_i|}$$

$$\operatorname{sgn}(x) = \begin{cases} 0, & when\ x <= 0,\ x \in R \\ 1, & when\ x > 0 \end{cases}$$

n - the base criterion

m - the criterion against which the base criterion is compared
i - expert's number

Aspect calculations allow information to be obtained about the validity of one criterion over another. The resulting table of proportions after applying the formula looks as follows.

Table 2. Table of proportions

	O1	O2	O3	O4	O5	O6	O7	O8
O1	0,00	0,18	0,56	0,22	0,23	0,44	0,64	0,29
O2	0,82	0,00	0,70	0,63	0,54	0,71	0,95	0,57
O3	0,44	0,30	0,00	0,27	0,26	0,35	0,69	0,35
O4	0,78	0,38	0,73	0,00	0,52	0,65	0,90	0,57
O5	0,77	0,46	0,74	0,48	0,00	0,73	0,84	0,64
O6	0,56	0,29	0,65	0,35	0,27	0,00	0,70	0,39
O7	0,36	0,05	0,31	0,10	0,16	0,30	0,00	0,17
O8	0,71	0,43	0,65	0,43	0,36	0,61	0,83	0,00

Source: own work

The next stage of the method is to determine the validity of each criterion using the formula [Mierzwiak 2015]:

$$W_n = \frac{Z_n - Z_{min}}{Z_{max} - Z_{min}} + 1$$

Z_n - arithmetic mean for the nth column
W_n - the validity of the nth criterion, expressed by the formula
Z_{min} - the minimum value Zn
Z_{max} - the maximum value of Zn

The results obtained are presented in Table 3.

Table 3. List of W_n and Z_n results

Z_n	0,20	0,10	0,20	0,12	0,11	0,18	0,25	0,14
W_n	0,73	0,10	0,71	0,21	0,17	0,57	1,00	0,35
Criterion	O1	O2	O3	O4	O5	O6	O7	O8
O1	0,00	0,07	0,21	0,09	0,09	0,17	0,24	0,11
O2	0,29	0,00	0,25	0,23	0,20	0,26	0,33	0,22
O3	0,17	0,12	0,00	0,11	0,10	0,14	0,25	0,14
O4	0,28	0,14	0,26	0,00	0,20	0,24	0,32	0,22
O5	0,28	0,18	0,27	0,18	0,00	0,26	0,30	0,24
O6	0,21	0,11	0,24	0,13	0,11	0,00	0,26	0,15
O7	0,14	0,02	0,12	0,04	0,06	0,12	0,00	0,06
O8	0,26	0,16	0,24	0,16	0,14	0,23	0,30	0,00
Min Z_n	0,10							
Max Z_n	0,25							

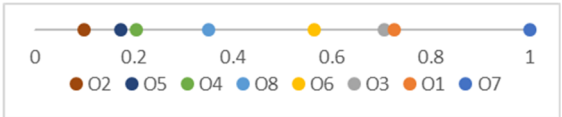
Source: own work

After developing the results of W_n, they were normalized in the range to 1 and presented sorted in Table 4 and Figure 2.

Table 4. Sorted results for the value Wn

O7	1
O1	0,726659
O3	0,70695
O6	0,565029
O8	0,350816
O4	0,205318
O5	0,173814
O2	0,1

Source: own work



Source: own work

Fig. 2. Ranking of opportunities for implementing the omnichannel concept

Table 4 and Figure 1 presents the results of calculations, and usually data is presented in tables. However, in this case, the authors have decided to show results in both figure and table forms. The graphical representation of the data makes the grouping of opportunities easier to notice.

INTERPRETATION OF RESULTS

The result obtained from the Thurstone method shows which opportunities are more important than others. Confirming the aim of this paper outlined in the abstract, the study's novelty lies in its creating a ranked list of opportunities that are significant in implementing the omnichannel concept. The result of SWOT/TOWS method alone is insufficient to make a decision about the action within the designated strategy, because it is

from combining SWOT / TOWS and Thurstone methods that information can be obtained on what actions are necessary to achieve the goal.

Based on the data collected, it can be concluded that information is the most important resource, because two chances (O7 and O1), which relate to the information possessed by the company, make up a total of 51.46% of the weight of all odds. The next three chances (O3, O6 and O8) refer to already proven solutions in the field of logistics, transport and technology. They represent 42.87% of all odds. The last group of opportunities (O4, O5 and O2) refers to unpopular technologies used by enterprises, therefore due to the possible risk of lack of success in using these opportunities when implementing the omnichannel concept in distribution, these chances gained only 5.67% of the weight of all odds.

CONCLUSIONS

Analysing these results, we can see that the opportunities to use (Fig. 2) create certain groups (according to the criterion of similar rank). The dominant one is the chance (07) "More customers can be reached, because more channels are available", which is understandable, because it coincides with the main strategic goal. Two more chances form a group of similar rank:

- Possibility of adjusting latest technology to changing the market's necessity,
- Possibility of better monitoring of customers' behaviours.

According to these results, the 3 most important opportunities concentrate on issues related to the market, i.e. directly achieving the goals of implementing the omnichannel strategy using modern information technologies. In the group of these factors, there is both the opportunity to reach a larger group of customers (a characteristic feature of multi-channel customer service solutions - multichannel) and the use of modern IT technologies to monitor customer behaviour. Customer behaviour monitoring is the basis for adapting business operations to current customer preferences in terms of service (the omnichannel concept feature). Adapting the latest technologies to the changing market requirements in the omnichannel concept is often performed by creating or extending existing applications, especially for mobile devices. Such applications allow one to monitor consumer behaviour and send news about availability and promotions regarding recently viewed articles at the right time. The continuous development of such applications results in less user anonymity, but often also a better shopping experience.

A clearly weaker group of opportunities to use, in the opinion of the respondents, are those directly related to the logistics aspects of customer service, such as:

- Potentially lower distribution costs, or even costless distribution if digital distribution is used,
- Faster delivery, especially when they can be done right at the customer's house.

Therefore, can one assume that the physical distribution organization is of secondary importance in achieving the success of the omnichannel implementation strategy? Probably not, because efficient logistics secures the physical implementation of deliveries in accordance with the 7R rule. Without proper logistics solutions, it will not be possible to achieve satisfactory results in terms of customer service. The results obtained should be interpreted in such a way that the first (most important) group of chances in implementing the omnichannel strategy determines the direction of activities and the second group is to support their implementation.

On the other hand, the least important chances currently, in the opinion of the respondents, are the chances to use:

- Customers can change their daily shopping habits to use smart home devices instead,
- Using autonomous cars in distribution,
- Potential lower costs of single deliveries.

As we can see, these are issues related to physical distribution (autonomous cars, costs of single deliverers) and customer behaviour (daily shopping). Their relatively low rating

may be due to the fact that these are potentially distant opportunities. For this reason, they are treated as less important, because they can be used in the past and not in current activities. To sum up, in the implementation of the omnichannel strategy, there is a group of opportunities that should be properly used, i.e. appropriate to their importance for the success of the strategy adopted. Their diverse rank is important for decision-makers who plan the implementation process. The results presented here are an important indication in this respect.

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RANGOWANIE SZANS WE WDRAŻANIU KONCEPCJI OMNICHANNEL

STRESZCZENIE. **Wstęp:** Głównym celem tego artykułu jest pokazanie rankingu szans dla wdrożenia koncepcji omnichannel wraz z metodologią analizy. Badane szanse uzyskano z analizy SWOT/TOWS. Natomiast do opracowania rankingu szans zastosowano metodę Thurstone'a. Analiza SWOT/TOWS jest jedną z najbardziej podstawowych metod analitycznych. Wynik tej analizy wskazuje jedynie ogólną strategię, jaką powinno obrać przedsiębiorstwo. Na podstawie poprzednich doświadczeń autorów w stosowaniu SWOT/TOWS można stwierdzić, że analiza zwykle nie wystarcza do podjęcia trafnej decyzji. Brakuje informacji o tym, jakie szanse należy wykorzystać lub jakie zagrożenia należy ograniczać w pierwszej kolejności podczas wdrażaniu wybranej strategii. W celu zwiększenia skuteczności wdrożenia strategii wyznaczonej przez analizę SWOT/TOWS przez przedsiębiorstwo należy przeprowadzić dalsze analizy korzystając z różnych metod.
Metody: Autorzy tego artykułu chcieliby pokazać, w jaki sposób podejmowanie decyzji w logistyce może być bardziej efektywne przy użyciu metody Thurstone'a wraz z analizą SWOT/TOWS. Metoda Thurstone'a posłużyła do wzbogacenia analizy SWOT/TOWS.
Wyniki: Rezultatem artykułu jest posortowana i pogrupowana lista szans od najbardziej do najmniej kluczowych. Zastosowanie metody Thurstone'a wraz z analizą SWOT/TOWS dostarcza pełniejszy zestaw danych do wykorzystania w procesie decyzyjnym we wdrażaniu koncepcji omnichannel.

Wnioski: Przedstawiona metodyka podejmowania decyzji we wdrażaniu koncepcji omnichannel daje menedżerom więcej informacji niż stosowanie każdej analizy osobno. Główną zaletą korzystania z obu analiz jest zmniejszenie zwiększenie szans udanego wdrożenia, dzięki uzyskaniu listy szans wraz z ich rangą, które należy uwzględnić w procesie podejmowania decyzji o sposobie realizacji koncepcji omnichannel.

Słowa kluczowe: Omnichannel, e-commerce, podejmowanie decyzji, SWOT; TOWS

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