



## **Crisis Management of Corporate Reputation- Analysis of selected E-Commerce Entities in Times of Global Pandemics**

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**Abstract:** The main aim of the paper is to present selected results of a comprehensive analysis of crisis management of corporate reputation of the best e-commerce entities operating on the Slovak internet market. On the sample of selected winners of the Heureka Group Shop of the year 2019 Quality Award poll, we conducted an in-depth analysis of their online reputation at the peak time of an ongoing pandemic. As part of the analysis, we examined the online environment from the perspective of all relevant determinants of reputation, the results were then clearly interpreted and offer a comprehensive view of crisis management of reputation in the online environment. The findings can serve as a basis for further research, or as a benchmark in the event of a recurrence of crises of a similar nature and magnitude in the future in order to eliminate shortcomings and maximize the effectiveness of marketing communication in brand building and brand protection.

**Keywords:** Reputation management, Innovations, leadership, e-commerce, distribution, crisis management, global pandemic.

### **1. Introduction**

The Internet has changed the way we are thinking about reputation. What was once private is now public. What was once happening on the local level is now discussed on the global level. What was once ephemeral is now permanent. What was once trusted is now unreliable (Delina, Dráb, 2009, Delina, Tkáč, 2010, Delina, 2014). These changes happen because the Internet has modified our interaction with reputation (Dorčák, Štrach, Pollák, 2015, Pollák, Nastišin, Kakalejčík, 2015). Understanding the unique relationship between technology and online culture is a key to understand how to manage online reputation (Maryška, Doucek., Novotný, 2012, Maryška, Doucek, Kunstova, 2012, Loayza, 2013). Those who apply off-line techniques on their Internet reputation or use off-line assumptions to solve online problems are doomed to failure. Instead, the user must be capable to understand the cultural and technical differences between the Internet and off-line world to effectively protect and improve his online reputation (Fertik, Thomson, 2010). Walter (2012) argues that reputation is a cornerstone of one's life and business. This means that reputation is very fragile and one mistake can sometimes cause irreparable damage (Pollák, 2015). This is especially true in the digital world ruled by radical transparency and high standards of customers (Soviar, 2011, Soviar, Vodák, 2012). Entities must be able to learn to communicate on social networks, follow the "chatter" on social media and effectively respond to such impulses without harming their reputation in line with expectations of their customers (Svetozarovová, Polláková, 2015). Siano et al. (2013) argues that when the Internet allows consumers to share information about businesses and brands, entities have the opportunity to control information published about them. Negative comments on the Internet can quickly and severely damage image and reputation of the brand. There is a wide portfolio of methods for quantifying reputation described in literature.

### **2. Literature Review**

Speaking about reputation systems, the simplest solution is to sum up all the relevant positive and negative reviews. The total result related to the specific user is the difference between all positive and negative reviews. This principle is used mainly on eBay, one of the largest online markets and community with over 50 million registered users. After each transaction the buyer and the seller can give each other positive, negative, or neutral rating, which in turn adds plus or minus points (1, -1, 0) to their reputation. Users can also leave comments. When people leave negative rating, they usually leave a comment that explains it. Although the eBay reputation mechanism is very simple, empirical results show it supports transactions between sellers and buyers. It is mainly due to the fact that sellers with better reputation are more likely to sell more. Also, this mechanism can prevent people to artificially boost their reputation with each other (Resnick, Zeckhauser 2002).

Another important model for online reputation monitoring is ReGreT model introduced by Sabater and Sierra (2003). ReGreT model is a standard model of trust and reputation system aimed at a SME e-commerce environment where social relations between individuals play an important role. The system takes into account three different sources of information - direct experience, information from third parties, and social structures. ReGreT reputation model is based on three specialized types of reputation, first is proven reputation, calculated from the information coming from witnesses, second is reputation surroundings, calculated using information based on social relations between the partners, and finally third one, system reputation, based on roles and general characteristics.

Model Flow represents models that calculate reputation using transitive interactions of individual users. Some allocate the entire community (users' network) a certain amount of reputation which is gradually redistributed to all users. Thus, the reputation can be increased only at the expense of other users. The most famous example of this algorithm is PageRank from Google. Google has become the most powerful and the most popular Internet search engine. PageRank mechanism evaluates sites on a scale of 0-10. Each page starts from a scratch. Pages having 5 or 6 points are deemed very good. If the page has a score greater than 7, it is among the very big players. It is better to get one link from a Page Rank with a score 5 or 6 than have 20 links from pages with a score only 1 or 2 (Wang, Vassileva 2007).

Model TOR, created by us (Pollak 2015), takes into account n-variables, which we call reputators. Reputators can be freely defined as determinants of reputation, where each determinant must have a significant ability to influence the reputation of the entity in the online environment. The basic reputation in a number of variables is the percentage expression of the score from the extended sentiment analysis (Saxony 2015), where sentiments are gradually analyzed - the nature and polarity of search results in the top ten places in Google search for the analyzed subject. Other reputators are added to the equation on the basis of the object of research, by default it is various competitive scores of subjects created on the basis of the size of target audiences in the social media environment or the evaluation of relevant Internet players. The overall level of reputation then takes the form of the arithmetic average of the individual reputators. We apply this methodology for further analysis.

### **3. Methodology**

As mentioned in the introduction, the Internet has changed the rules of the game, the availability and authenticity of information plays a key role in customer decisions. Predicting customer behavior is complicated even under standard conditions, however, what if a large part of the traditional B2C market suddenly collapses. How the absence or a significant reduction in the supply of brick-and-mortar players will complicate the already extremely difficult situation of managing an online reputation? On 16th of March 2020, a state of emergency was declared in Slovakia in connection with a pandemic caused by a new coronavirus. There was a partial closure of the economy and a significant slowdown, in significant causes lockdown of the brick-and-mortar B2C market. This hitherto unthinkable state created specific conditions in which it was possible to observe on a daily basis highly non-standard situations, which created an environment for research in almost all areas of scientific research. From the point of view of our study, it was the research of interactions and crisis communication of e-commerce entities operating on the Slovak market. It is the e-commerce market that has passed a stress test of unprecedented proportions. Almost overnight, this market had to replace the entire supply of traditional entities, which were forced to close their operations. The enormous pressure on the supply chain tested the stability of the system, problems of an operational nature (but) with strategic implications were solved in real time. The logistical flow of goods no longer had the traditional form of chaining, it was reduced to a minimum, couriers or dispensaries of goods took over a large part of the function of wholesale, retail and intermediaries. To this chaos we must also add the uncertainty nervousness of the market, and the effect of frontloading with supply shocks. The uncertain situation that created the cocktail of the high-explosive reputation bomb. In this situation, we carried out our

research in order to identify basic qualitative data for furthermore comprehensive quantitative research.

The object of the research consisted of selected representatives of the e-commerce market. As it was difficult to directly select specific service providers while maintaining the necessary validity of the data, we decided to perform our analysis on selected ambassadors of a selected research group. Research group was represented by the sample of winners of the Quality Award of the Shoproku 2019 survey of the Hereka Group (Heureka 2019) in its selected six categories, which we evaluated as the most relevant given the current situation.

In the time interval 1st to 18th of April 2020, we monitored the market situation on a daily basis. It was a period when the disease was most likely culminated, and when, in our opinion, was already possible to record the first data generated by the crisis condition market situation. Data for further analysis were collected on the last day of our chosen time interval.

For analysis itself we used the TOR methodology (Pollák 2015), we chose the methodology based on its ability to identify changes in the individual determinants of reputation in a relatively short time.

In its first step we performed an extended analysis of the sentiment ASA (Pollák, 2015, Markovič, Dorčák, Pollák, 2017). ASA- extended form of sentiment analysis (SA) of the nature of first ten Google search results for chosen subjects, takes into account the occurrence of sentiments in several dimensions compared to the original methodology. In our case of our six subjects were tested for sentiment of search results both in the "general" and "news" categories of Google. Our aim was to find out how the uncertain situation affected the well-controlled internet presence of chosen subjects. From the point of view of ASA analysis itself, as a search phrase we used well-known and well-established name of the research subjects. As we mentioned above, the main factor in the process of ASA is the quantification of the sentiment of results displayed after typing key words to the search engine. The results may show positive, neutral, and negative feedback (see Table 1). These sentiments, in order words polarity direction of the text, as well as the position at which the result is displayed will give an idea about the research subject, thus ultimately determining its online reputation (Pollák, 2015). The process records the evaluation of the first 10 results in Google search. After summing up the sentiment points, we reach the final amount. That amount is then a starting factor in assessing the success or failure of companies in the particular segment. The following Table 1 shows the values assigned during the sentiment analysis:

**Table 1:** Sentiment Individual Results/Position of Results

Sentiment/ Position of the result	1	2	3	4	5	6	7	8	9	10
Positive sentiment (+)	20	19	18	17	16	15	14	13	12	11
Custom web site of the organization (x)	10	9	8	7	6	5	4	3	2	1
Neutral sentiment (±)	2	2	2	2	2	2	2	2	2	2
Negative sentiment (-)	-20	-19	-18	-17	-16	-15	-14	-13	-12	-11

**Source:** Rohaľ and Sasko, 2011 In: Pollák, 2015

The Table 1 shows chronological sequence of awarding points to the analyzed entities. Positive response or sentiment results in the increase of the score. The higher the position of this sentiment in the search result, the more points are awarded. Similarly, but with the opposite effect it/is works in identifying the negative sentiment. Points are deducted, the higher the position of the display, the bigger the deduction of points, and this significantly deteriorates reputation. For the two dimensions analysis, we perform the same procedures for each of them separately, in our case separately for the category "general" and separately for the category "news". The resulting amounts are calculated and converted to percentages. This is based on the assumption that within a single group the entity may receive a maximum score of 155 points – the ratio 1 point = 0.645%. For purpose of our analysis with 2 groups, the entity may receive a maximum score of 310 points – the ratio 1 point = 0.322%.

In the second step, we identified other relevant reputation determinants as follows:

- Google reviews score (converted to percentages),
- Facebook score (read as the nature of emoticons of interactions during the observed period / directly through the evaluation of the subject's profile, then converted to percentages),
- Customer rating score from the Heureka portal (the recommendation to realize the future purchase expressed by customers in the last 90 days).

In the third step, we proceeded to the calculation of the TOR indicator. Subsequently, we visualized and interpreted the findings, visualizations and interpretations are shown in the next part of the paper.

4. Result and Discussion

The following table shows the partial and overall results of the analysis, represented by the values of individual reputators and the overall TOR indicator:

Table 2: Overall (Total) online reputation

No.	Subject/ Result sentiment	ASA score (%)	FB score (%)	Heureka score (%)	Google score (%)	Number of pages indexed by Google	TOR score (%)
1.	DATART.sk	43.79	99.00	93.00	84.00	3,600,000	79.95
2.	Astratex.sk	70.52	92.00	98.00	0.00	578,000	65.13
3.	Footshop.sk	66.33	90.00	93.00	88.00	791,000	84.33
4.	MojaLekáren.sk	45.08	88.00	90.00	72.00	302,000	73.77
5.	svetnapojov.sk	37.67	98.00	99.00	0.00	77,900	58.67
6.	HEJ.sk	63.11	99.00	92.00	84.00	12,800,000	84.53

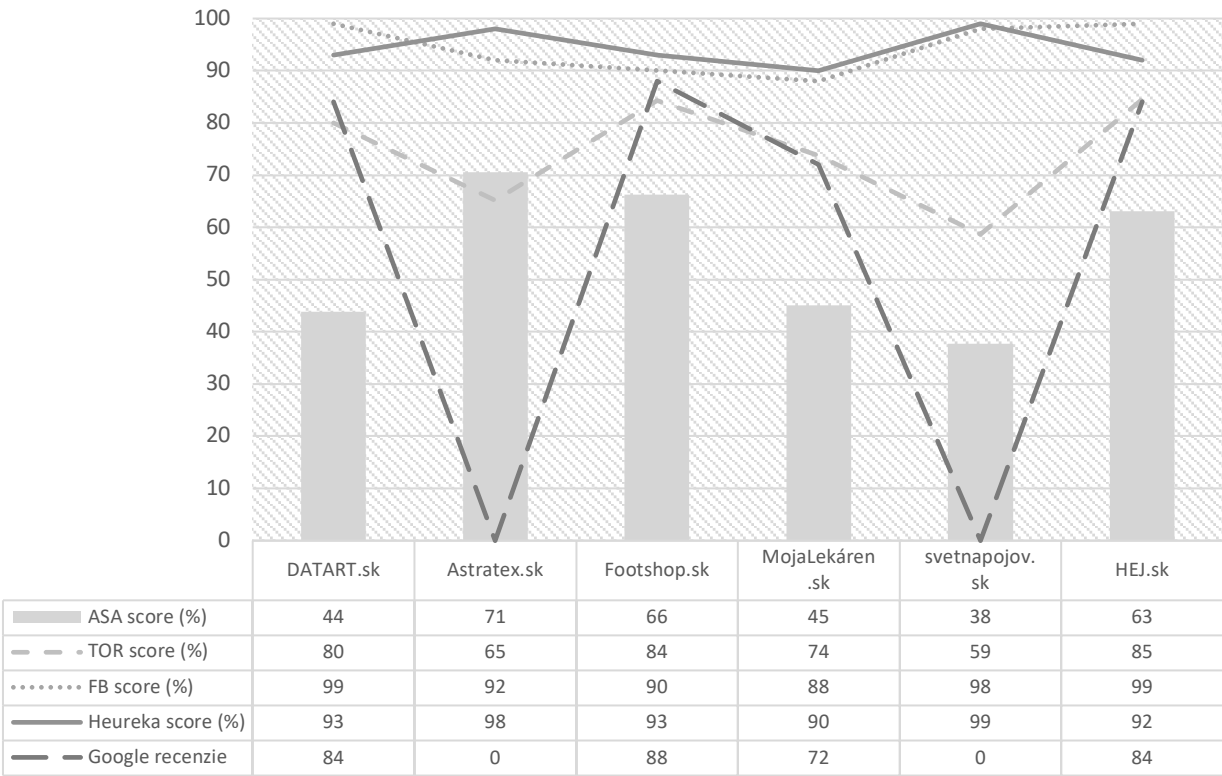
Source: Own processing

As can be seen in the table, the ratings of individual reputators were diverse, in the case of the first entity, the giant from the traditional world, DATART we recorded in Google search results almost standard values for the model entity, in the first place were the entity's own pages, followed by pages with positive and neutral nature. Landing pages and affiliate-based sites have generated a fairly significant share of positive sentiment in search results. The near-ideal state within this parameter was not repeated in the "news" category search results. All search results were neutral and, in our view, were created by poorly optimizing content providers' sites, which added text from the contextual advertising window to messages of a different non-subject nature. From the point of view of the second subject in our sample, the Astratex.sk underwear store, in the category "news", it was an exemplary example of marketing communication through related media and PR news. The subject scored the full number of points in this category. Third in line, the Footshop.sk shoe store also demonstrated perfect PR mastery through media clearly targeting their customers. The fourth subject, the online pharmacy in the category of main search results achieved almost 50% of possible points with organic results supplemented by positive customer ratings, the better result reduced the gain of negative sentiments on the 9th and 10th ranks, having the nature of customer ratings. These could be eliminated thorough better work with the content. The category of "news" pointed to the need for a certain nature of PR, a significant part of the results had a neutral polarity, which greatly reduced the online communication potential of the subject. The online store with the alcohol-svetnapojov.sk achieved the lowest score in our comparison, which was mainly due to the total neglect of PR and marketing communication policy aimed at internet versions of important domestic media. The combination of key ones represented by the name of the subject generated only three mentions in the category of "news", two of which were in the nature of neutral sentiment. The last subject from our group, the shopping portal Hej.sk, showed a relatively solid media work both in terms of overall presence and in the case of PR and marketing communication, which we would recommend intensifying due to the size of the subject.

As an important finding we consider the fact that at the time of the research, the difficult pandemic situation was not transferred to the presence of subjects in form of their search results at all. This may be caused due to the longer response time of the Internet to shocks, we will continue to monitor this phenomenon.

From the point of view of the second step of the analysis, the review of reputators, it can be stated that these mostly organic indicators are evaluated highly positively by the subjects. Whether it is tens to hundreds of positive interactions with entities that do not have FB ratings, or relatively high ratings for entities that have them, to almost completely recommend customers for further purchase, these parameters only confirm the fact that they are the best players on the market. We only evaluate negatively the absence of Google's evaluation of two entities, which deprives them of their authenticity. However, this is probably due to the relatively short presence of the players on the market. Once again, we were surprised that the difficult market situation did not cause problems with reputation management during the period under review. In the analysis of hundreds of Facebook interactions in the research time period, we came across negative interactions only in trace amounts, if we take into account the nature of the market and the situation that generates stress and emotions in general, this is a very surprising and significantly positive finding.

In the following chart, we visualize the overall state of the reputation of entities, as well as state of their partial reputators:



**Figure 1:** Reputation of entities

As already mentioned, we have identified another unusual phenomenon, which is a relatively high score of customer recommendations. Due to the difficult market situation, we consider it necessary to monitor this phenomenon over time and thus identify the possible methodological nature of the phenomenon, or the time response of the environment to change. In our opinion, both facts are worth exploring further.

In the third step, we calculated the overall TOR indicator, from the point of view of our sample, the highest value of the overall reputation was recorded by the e-shop HEJ.sk, followed by the e-shop Footshop.sk. With values of the overall reputation at the level of more than 80%, it can be stated that these are highly above-average values regardless of the object of research.

5. Conclusion

Specific conditions, in which we carried out our analysis created almost model situation for fulfillment our research aim. Investigation of interactions, crisis management and communication approaches of selected e-commerce entities provided prospects for future comprehensive quantitative research. E-commerce market has passed a stress test of unprecedented proportions. Almost overnight, this market had to replace the entire supply of traditional entities, which were forced to close their operations. The enormous pressure on the supply chain tested the stability of the system,



problems of an operational nature, but with strategic implications, were solved in real time. Supply, distribution of goods to customers, customer service, these are all physical aspects of trading on the Internet. From the point of view of the sample we examined, we can conclude that the processes were handled well. Crisis management of the corporate reputation of selected e-commerce entities was appropriate to the situation. From the interactions observed on the social network Facebook during the period of research realization, we recorded no negative customer feedback. From the point of view of customer references, we recorded highly above-average satisfaction numbers. This phenomenon represents the greatest challenge for further investigation, in order to identify the time lag of the impact of events on the reputation, respectively the methodological nature of the phenomenon. Both of these facts have a high research potential. From the point of view of the limitation of our research, we evaluate as the most important fact that we operated in the relatively limited time period, as well as we used relatively small sample for the data collection. Also, the processing and deeper interpretation of the results of our qualitative analysis will be the subject of subsequent in-depth research, as deeper research requires a higher allocation of resources, especially time. As our research was of a qualitative nature and aimed to reveal the context for further continuous research, we consider the limitations of the research as appropriate.

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