

USING OF EYE TRACKER IN HORECA SEGMENT: VISUAL PROPOSAL OF CHOSEN COMMUNICATION TOOL ON RESTAURANT GUESTS DECISION

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ABSTRACT

In this article we evaluate three chosen restaurants in Nitra city from the perspective of visual proposal of chosen communication tool, which can be effective for influencing of restaurant's guests to visit each restaurant. It might be done through techniques and methods used in neuroscience. The consumer neuroscience is the area of marketing that studies the sensomotoric, cognitive and affective consumer's reactions on different marketing stimulus. In this article, we use Eye Tracker as one of biometric methods and we research, how restaurant's leaflets can be attractive for guests and in the conclusion we suggest some tips for marketing communication doing for three restaurants in practice. Means of biometric and neuroimaging technologies it's found out, how the consumers do the unconscious purchasing decisions and what's part of brain is responsible for these processes that 95% of human thinking and activities become just real in subconscious. This paper is a part of Scientifics project *VEGA 1/0874/14 (2014–2016): "Using of neuromarketing in the food visual merchandising"*, solved at the Department of Marketing and Trade, FEM-SUA.

KEY WORDS

consumer neuro science, emotions, HORECA segment, marketing communication, eye tracker, leaflet

JEL CODES

M30, M310

1 INTRODUCTION

In the business-to-consumer (B2C) segment of agribusiness, service quality is intended to create consumer loyalty. Many studies have suggested that quality service delivers additional value (regulatory controls on consumer safety, service quality, environmental pretention etc.) to satisfy the needs of consumers as a profit by Press et al. (2014). Šimo and

Rovný (2010) use, the agribusiness covers the supply of agricultural inputs, the production and transformation of agricultural products and their distribution to final consumers. FAO (2015) defines; the traditional production and distribution methods are being replaced by more closely coordinated and better planned linkages between agribusiness firms, farmers, retailers, services providers and others in the supply chains. Vietoris (2013) means, that agricultural intensification, which has replaced intensification as the primary response to rising consumption, is obviously still needed. Bielík et al. (2014) otherwise, edible commodities will become scared, more people will experience hunger, and more natural habitats will be destroyed. Smutka et al. (2012), it is necessary to consider the agribusiness activities in a business chain as well as in HORECA segment before considering the role of marketing in the business. These begin with the provider of the original service, and end with the final guests. It is necessary to consider the aims and objectives of each link in the restaurant in order to understand the marketing objectives and thus the role of marketing as it develops and involves through the business chain. In HORECA sector, business activities are supported by supplies from upstream levels. In this B2B segment, HORECA operators are the buyers; upstream players are the sellers. Maguire and Geiger (2015), the buyers have the right to choose their sellers and, in turn, creating a competitive platform in agribusiness markets. These include domestic farms, middlemen (wholesalers and local suppliers), and retailers (conventional retailers and modern retailers). Domestic farms offer a farm-to-plate concept to HORECA operators. Tey et al. (2014) characterize, their farm-direct supplies are generally fresher and cheaper than other options. Prokešínová (2014) introduces, middlemen provide local and foreign varieties at a competitive price range. Another intermediary group – wholesalers are centralized in cities; local suppliers serve specific suburb areas. Some local suppliers also obtain produce from wholesalers due to convenience and availability of imported produce.

Kotler and Keller (2013) define, the marketing communication is a tool, by which the company can develop the relationships with their consumers. The technologies and other factors fundamentally change the ways such the consumers perceive the marketing communication and even whether they choose to handle it all. Vysekalová and Komárková (2002) mean, the advertising is one of the communication tools, which can present a product in interesting form with using of all elements that cause on the emotions. In the ad, it can be interesting headline, type of script, color, in radio and TV ad, the voice and music accompaniment. In this paper, we take measure an observation on ad media, whether print or outdoor medias. Chebeň (2010) writes, the main advantage of posters is the option of high communication frequency with target segment. On the contrary, the disadvantage of outdoor ad is its static nature. Šrédľ and Mikhalkina (2014), the consumers are also weary of this kind of advertising, and because it's necessity to find the original way how to attract the viewer's attention. Karlíček and Král (2011) introduce the creativity in today outdoor and indoor medias is not limited and the outdoor ad may use some voice equipment, then the equipment's that propagate the fragrances and other techniques. Chebeň (2010) means, for the posters, their structure should be simple, concise, and should include more images than text. If it's used a text, it has to be large enough and concise. Světlík (2012), since man is daily exposed by hundreds and thousands of these advertising messages, be found new and unconventional directions that lead to understanding the functioning principles of advertising and to increasing the effectiveness of its existing. One of the new is neuromarketing.

Ohme et al. (2010), marketers are more and more skeptical of using only verbal measures in market research because of their limitations in providing an effective measure of internal reaction to external stimuli. Plassmann et al. (2012), the application of neuroscience to consumer psychology and in particular to marketing, has gained popularity over the past decade in academic research and business practice. The

Tab. 1: The sample of respondents by gender

	Absolute frequency	Relative frequency
Male	28	41%
Female	41	59%
Together	69	100%

authors Vashishta and Balaji (2012) define, neuroscience enables marketing researches to have a better understanding of the excellent of such abstractions held in customer's minds and the role of emotions in decision making, and further in developing more effective methods of triggering those emotions. Ramsøy (2014) simply, the neuromarketing could be defined as the new area of marketing that studies the effect of marketing stimulus on cognitive, sensomotoric (sensory, motoric) and affective (emotional) reactions of customers and consumers too. Nagyová et al. (2014) write, the research tools and techniques of neuromarketing can be divided into two major categories: (1) the approaches that measure the body reactions (biometric measurements) on influencing marketing stimulus and approaches, and (2) the approaches that measure the brain reactions on influencing marketing stimulus.

The most widely used biometric measurements in terms of consumer neuroscience belongs the cardiac and respiratory activity, eye movements, winking, galvanic skin resistance (GSR), facial expression and body movements as well as. Pradeep (2010), Eye tracking, measurement of eye movement and dilated pupils by object or scene looking has got in neuromarketing wide used both as a stand-alone tool, but also as an important complement to other indicators. The speed and direction's changes of view provide the valuable indicators of attention, of interest and of attraction. Berčík et al. (2014), the appliance for eye tracking measurement is called "Eye tracking", while the mobile and stationary version of this equipment exists depending on the nature of the research.

2 METHODOLOGY AND DATA

The research object in this paper was an attractiveness of outdoor communication tools of three different restaurants. After first visual selection of created communication tools were created for each restaurant two posters that were tested by the statistic eye camera (so-called, Eye tracker). In simulated conditions, the audiovisual pictures of restaurant visual posters were replayed in accidental order in ten-second intervals to 69 respondents from 22 to 52 years old. The Tab. 1 illustrates the sample of respondents by gender.

In order to identification of the most engaging posters, each picture of restaurant was divided into two half that they are made by two posters which illustrate the same restaurant. The respondents looked at 6 pictures together. In pursuit to eliminate the distortion of results

were the right and left pictures arbitrarily varied?

The identification of consumer interest, attention and preferences was done by monitoring of eye movements. In simulated conditions, the fixed Eye tracker from Gazepoint Company fixed to LED monitor with screen diagonal 22" was used for monitoring of eye movements. This equipment uses the eye-tracker technique based on light reflection from eye retina back to the camera, so-called Bright pupil, while it is the binocular system with sampling frequency 60 Hz too and with the tolerance of head movement to subject 25 cm × 11 cm (horizontal × vertical) movement, and the depth range of movement is ±15 cm with the precision of 0.5–1 degree viewing angle.

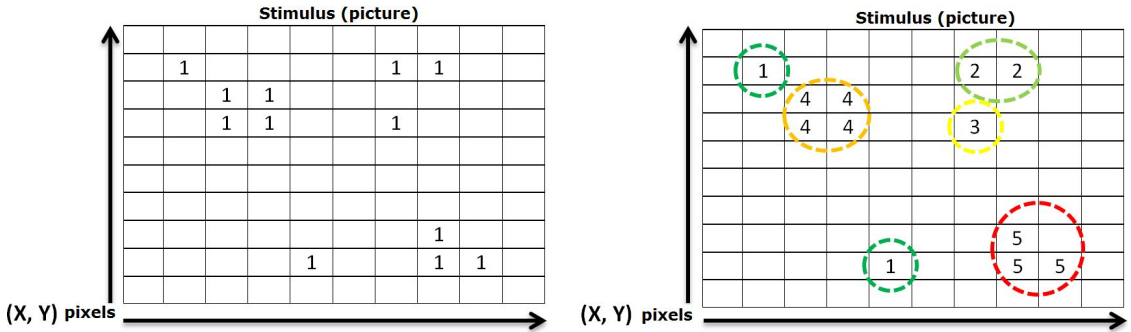


Fig. 1: Creation of heat maps based on software manual of Tobii Company (2015)

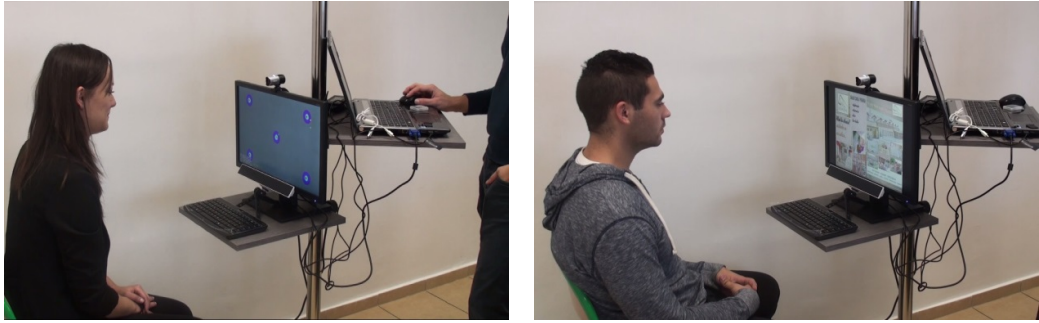


Fig. 2: Calibration and biometric testing of respondents in laboratory conditions

The acquired data about eye movements done by respondents were evaluated in program environment of *GazePoint Analysis* and then the heat maps were created that present the consumer preferences on tested communication medias.

Bojko (2009), *heat maps* are two-dimensional graphic data representation, in which are the values of variable illustrated by colors. They are particularly conclusive for two reasons. Firstly, the intuitive disposition of the color scale related to temperature minimizes the amount of learning that is needed for their right understanding. We have experiences that yellow is warmer than the green, orange is warmer too and red is hot. It is not difficult then to find out that the amount of heat is direct proportion to level represented by variable. Secondly, the heat maps directly mean data in measured stimulus. In view of the fact that data can be related to concerned elements, it is necessary only little mental effort to the heat map interpretation.

The first step to the heat maps' creation (see Fig. 1) is the view division on stimulus. It is step by step done by realization through all fixations

from all chosen records and then in following by the supplementing of their values whenever the fixation that shares the same X and Y pixels' location as others.

If we select a number, then we add the number of fixation at the same position. In the case of absolute period, it is added the length of each fixation. By relative period, firstly it is the length of each fixation divided according to imaging time of present media (video, picture) and then added one.

After assigning of fixation's values, the color values are added to all places with the hottest color represented the highest values. Tobii (2015), the heat maps are important statistical indicator who's the representativeness is conditional by the minimum of sample size – 40 respondents.

Before the testing realization, every respondent filled the form with biometric testing, evaluation and with protecting of acquired data. After notified of respondents with testing explaining, the 5-points calibration was realized (see Fig. 2).

3 RESULTS AND DISCUSSION

During the testing, we have evaluated the communication visuals of 3 different businesses and category restaurants.

The restaurant “*Zlatý Klúčik*” represents the segment of luxury service provider not only in terms of localization, interior design, as well as the professional cooking and serving of gourmet dishes too. It is located in Nitra city on the Zobor hill with amazing view on all part of Nitra city. After first visual choice from all created posters, two different from each other types of communication medias were used for the purpose of biometric testing.

The left side of picture is made as the luxury leaflet on black-brown colored base and with interior elements in the middle part. In this case, a restaurant’s name is done by four stars, logo and by short slogan. In the bottom, there is the contact information done by internet web page and opening hours. On the right side, there is a poster in dominant white color. The upper part is done from selected gourmet specialties and from the slogan. The dominant term in the middle of the poster is creating by luxury characters, and it is completed by information, this is a restaurant. At the bottom, there is a cook and key information about the benefits and pluses of the restaurant, which are on the light green background. As well as, in this case the lowermost part is the contact information, including website.

The Fig. 3, based on heat maps, the most consumer insights across from the representative sample was concentrated to cook on the right side of the picture (see the right poster of Fig. 3). Approximately on the same level, on the left poster, the photos of the interior attracted the consumers and then on the right poster, the photos of gourmet specialties attracted them. In terms of information, the left poster was more interested for respondents, in addition to the poster; the consumers looked at stars, logo and slogan too. It is interesting that in the case of this poster, the respondents take notice as well as the contact information and opening hours.

To compare the perception of men and women, we generated the separate exports of

consumer interest in the category of gender. The main differences were in the perception of cook, where a heat map dominates in the case of women gender as well as, a heat map dominates in the area of gourmet specialties and key information on green background too. In male category, the highest concentration of views is on information on the upper part of poster, as well as, the men looked more on contact information on the left visual, while the women on the right. The difference could be seen on Fig. 4, in the case of interior. While the women looked most on first photo of interior, then the men looked more on the second and third photo.

The “*Salaš/Chalet Cabaj*” Restaurant is located in the Nitra city’s periphery in traditional Slovak style with prices more accessible to a wider range of the population. This restaurant offers home cuisine. The both tested communication tools are in brown background, while the left poster contents a photo of restaurant interior and one view on food serving. The right poster contents more photos from restaurant exterior, table setting, food and different attractions. The placement of logo restaurant and information are different placed on these posters. While on the left poster, the big logo is in the left corner, then on the right poster, the half logo (in the comparison of the left poster) is on the right side of poster. On the left poster, the contact information is supplemented by QR code. On the left poster, the slogan is placed in the middle, but on the right poster, it’s placed on the top part. The difference in the concept of these posters can be seen in the case of information about a portfolio of services providing, because on the right poster, they are incorporated in the bottom and on the left poster, they are incorporated on the top of poster.

On the base of heat map from Fig. 5 can be seen, that the highest concentration of consumer views in the case of both posters are oriented into food, serving, as well as into setting. On the left side, the consumer orientation is to the information about a portfolio



Fig. 3: Heat maps of restaurant visuals testing: Zlatý Klúčik Restaurant, export from Program Gazepoint (2015)



Fig. 4: Comparison of preferences by men and women: Zlatý Klúčik Restaurant, export from Program Gazepoint Analysis (2015)

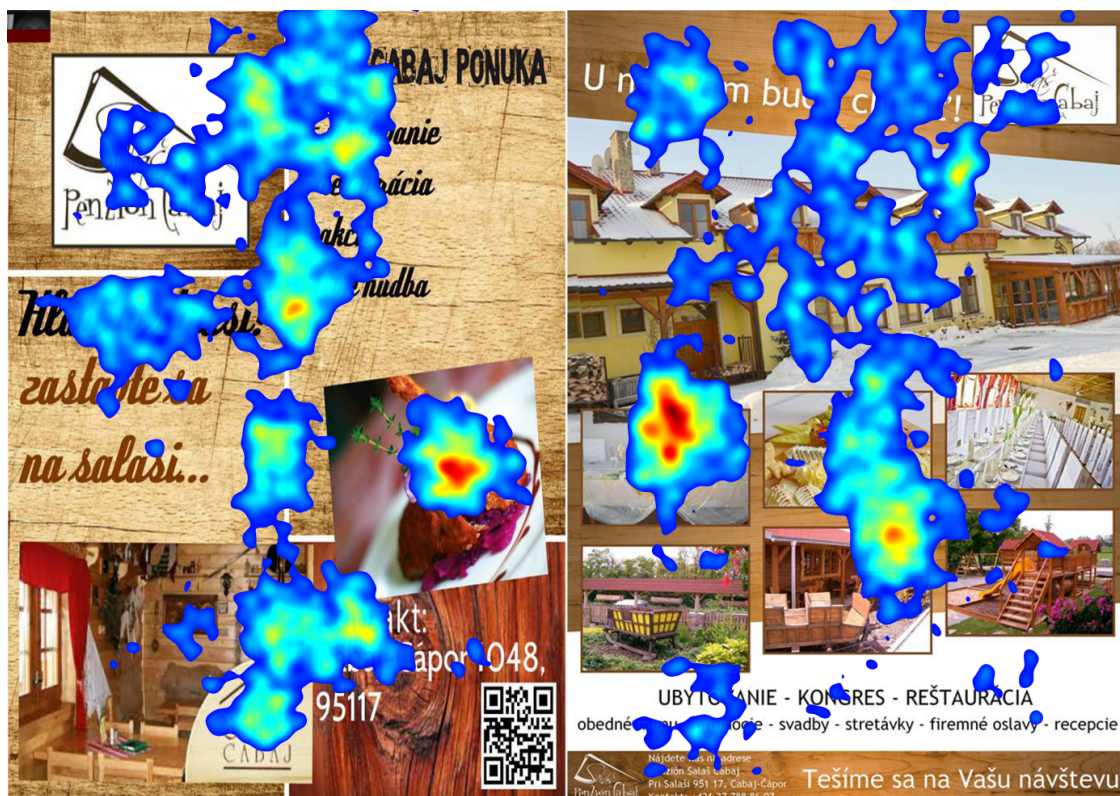


Fig. 5: Heat map of restaurant visuals testing: Salaš/Chalet Cabaj Restaurant, export from Program Gazepoint Analysis (2015)



Fig. 6: Comparison of preferences between men and women: Salaš/Chalet Cabaj Restaurant, export from Program Gazepoint Analysis (2015)

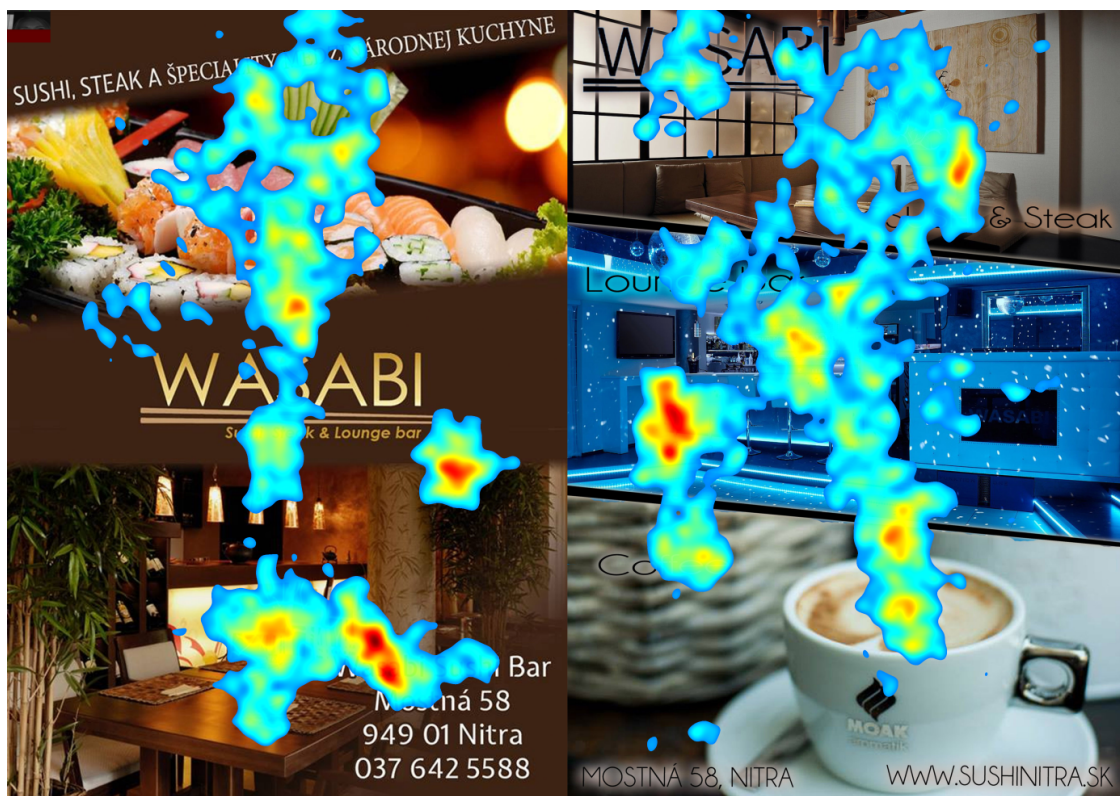


Fig. 7: Heat map of restaurant visuals testing: Wasabi Sushi Bar Restaurant, export from Program Gazepoint Analysis (2015)



Fig. 8: Comparison of preferences between men and women: Wasabi Sushi Bar Restaurant, export from Program Gazepoint Analysis (2015)

of services providing, into slogan and contact information. The object of interest on the right side of poster is a photo of restaurant exterior and a slogan. For both of them, there is the relatively small amount of views on the logo of the company.

On the Fig. 6 it can be seen the differences in the perception between men and women. The male part of sample was most looking in the case of left poster on the food, but in the case of right poster on the setting and restaurant exterior too. The female part of sample was most looking in the case of left poster on information about a portfolio of services providing, slogan and contact data, and in the case of right poster on the food, setting and other attractions. A significant difference can be considered for the female part of sample compared to men, the raised number of views of the restaurant exterior.

“Wasabi Sushi” Bar and Restaurant is one of the first and favorite Japanese restaurants in the center of Nitra city with the offer of different Asian specialties, Japanese sushi, steaks and other meals. This restaurant looks luxury with beautiful interior and wide range of teas. In this case, the biometric communication tools with less amount overlapping elements were selected.

The left poster has brown background with photo documentation of food and restaurant interior. The right poster is divided into three key sections, which are not different only by nature but by colored background too. By both promotion Medias are used the terms that correspond to the color design of both visuals.

On base of heat map, on the Fig. 7 it can be seen, that on the left poster, the respondents looked longer at restaurant interior and shorter at food (sushi). On the right poster, the consumer looked more at the middle part of poster, where is lounge bar of this restaurant. Similarly, on the right poster, the consumers perceive a cup of coffee, as well as restaurant interior. The respondent's didn't look at contact information and website. The object of their interest on both posters was the name of restaurant.

The comparison of perception and preferences by gender, it can be seen (Fig. 8) the results, that in the case of left poster, there are not significant differences with the exception of the name (Wasabi), which dominates by male part of sample. Contrarily, in the case of right communication media, it can be seen more significant amount and length of fixations by women. While the men didn't nearly look at a cup of coffee and at interior, the women more intensive looked at these promotion tools.

4 DISCUSSION AND CONCLUSION

On the basis of realized measurements made by the biometric, we identified the consumer preferences and their interest, which in many cases isn't possible to identify through traditional methods, because these processes greater occur in the unconscious. In this paper, we use the neuromarketing measurement with the chosen marketing communication tool – leaflets. The goal was to obtain data, how this tool influences the potential guests to visit each of chosen restaurants. We tried to highlight the attractiveness of leaflets as the cheap and still used tool for consumer taking of attention. By means of heat maps, that represent important and summary statistical indicator, by which we identified the points of consumer

interest. As well as, we demonstrated that exist the differences in perception and preferences between men and women. Accordingly, it can be pronounced, that biometric methods of eye movement's measurement is important by feedback gaining from the target segment and in food services sector providing – in agribusiness. Even if the case, that equipment's of consumer neuroscience will be more developed and improved, it's needed to perceive them as research progress that will be still needed to integrate with more methods including traditional. The integration and combination of information leads to the more faithful image of the examined reality and of the future estimate. It will be important to identify and include into wider

context the values, that are not actual measured (emotional response/feedback).

One of the most important aspect of neuro visual and biometric surveys is, that react on the question, “what’s going on” and they can detailed describe physical reactions on current behavior, but they cannot answer on the question, “why does consumer do it”. In practice they are other research methods, mainly qualitative.

The main contribution of Eye tracking methods in agribusiness is principally in detailed rendering of preferred points/ areas of consumer interest that consumers are not able to assess the conscious level, identification of place with the highest consumer interest, creation of more effective and more logical visuals in agribusiness, finding of non-effective

(free) places in term of consumer attention, and detailed identification of the rank’ consumer insights.

In Slovakia, HORECA segment is less reviewed in theory as well as in practice from the view of neuromarketing techniques using. Because, the authors would like to raise these research area and develop this measurement into other part of HORECA segment. This area of research also could be combine with the traditional marketing research method – questionnaire and the modern one – mobile eye tracking or EEG methods. First, the questionnaire can be sometimes not so exact, but the combination with eye tracking and EEG can identify also the reactions and emotions of respondents and detailed describe their actually perception.

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