

The Impact of Culture on Web Design

Case Study: Belgium and Russia

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Abstract

People spend a lot of time working with computers and other electronic devices nowadays. Interfaces are an important part of these interactions. Web interfaces are oriented on users, their needs and expectations. The user factors can vary from country to country. Cultural differences affect practices like web design in a certain way.

The present Thesis focuses on cultural differences and their correlation with web design. Case study contains comparison of city web sites of Belgium and Russia. For both countries 50 most populated cities were chosen. The comparison process was done using theoretical approach toward the cultural differences and the statistical analysis. The results of analysis were assessed by the interviews with the members of both cultures.

The Thesis has shown some implications of cultural diversity in web design. It means that there are consistent patterns showing the dependence of web design on the features of culture. For instance, Russians expect city web site to be more formal and to use coat of arms as an emblem because of the high level of power distance. The same reason explains why their city web sites sometimes display photograph of a mayor. This feature is not likely to be found on Belgian city web sites. Belgians more often present links to social network accounts of the cities because of the low power distance level. Furthermore, Russian web sites are executed in the same language by default because of collectivistic nature of the culture. Belgians are more eager to register a personal account on a city web site because of the individualistic features of the culture. Belgian universalism explains the prevalence of fixed-width web sites, while Russians prefer an adaptive width. Russians more often use drop-down menus because they are members of a high-context society. They also favor illustrated menus more because of the femininity of the culture. Belgians more often display photos of smiling faces, leisure, art and sport scenes because of the high level of indulgence in the culture. So far, there is a connection between culture and web design.

The same type of research can be conducted for the other cultures and types of web sites, and it can give a theoretical base for future localization of web sites and understanding of user expectations.

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1. Introduction

1.1. Problem Definition

People live, study and communicate through the internet nowadays. Inside this endless galaxy everything can happen. We have access to that world with the help of our computers, tablets and mobile phones. Interfaces inside them translate all our intentions into the language of technology. Without interfaces, we would not have any access to the universe of information coded by zeros and ones, humanity would not be able to achieve its present level of flourishing knowledge. One of the astonishing features of interfaces is their ability to make human life easier. Imagine that for calculating some easy sums people would need to program a computer with punch cards again. Execution of a very simple action would take too much time compared to contemporary speed of work with computers. Thinking of future, I believe that increase of enjoyable interfaces will truly improve quality of human life. If pleasantness of routine work grows, then productivity of doing the job will be raised too. By improving the interface design we can change the world for better.

It belongs to the common sense that the amount of existing interfaces is overwhelmingly big. There are as many of them as the number of applications and web sites. However, the focus on web interface have been chosen for this paper because it can be studied through common structure of internet page, worked out by years and years of web evolution.

There are general phenomena, which can characterize user behavior on web sites. For instance, the paradox of the active user can be described as one of the cross-cultural habits of the people all over the world. The paradox of the active user occurs when somebody sees long paragraph of instructions or license agreement on the screen and a bright button below it. “Very few people take time to read instructions,” says Steven Krug in his book on Web Usability *Don't Make Me Think*. “We don't figure out how things work. We muddle through,” – he continues (26). It is a familiar situation for most of the people.

However, we all are raised in our own conditions, and we all have our own habits. So far, we can say that even though the internet is a global community with its common rules for everyone, there is still a place for cultural diversity. For example, it is a well-known fact that Islamic countries are less iconographic than the Western society. In particular, they are historically more text-oriented. That has to have influence on perception of the layout of web sites.

Another example of cultural influence on web design can be seen on Chinese news web site (Fig. 1). We can easily see how much it differs from an average Russian news web site (Fig. 2). Chinese version contains much more text and less pictures. It has brightly colored text, while the Russian web site text décor tends to be minimalistic. Different web sites have been designed

in the specific way in order to correlate with needs, expectations and taste of the audience. According to Hesmondhalgh, different cultural, social and economic backgrounds of the people (Hesmondhalgh) can cause differences of the tastes.



Fig. 1. Chinese news web site Sina. Source: www.sina.com.cn. Web. 15 May 2015.

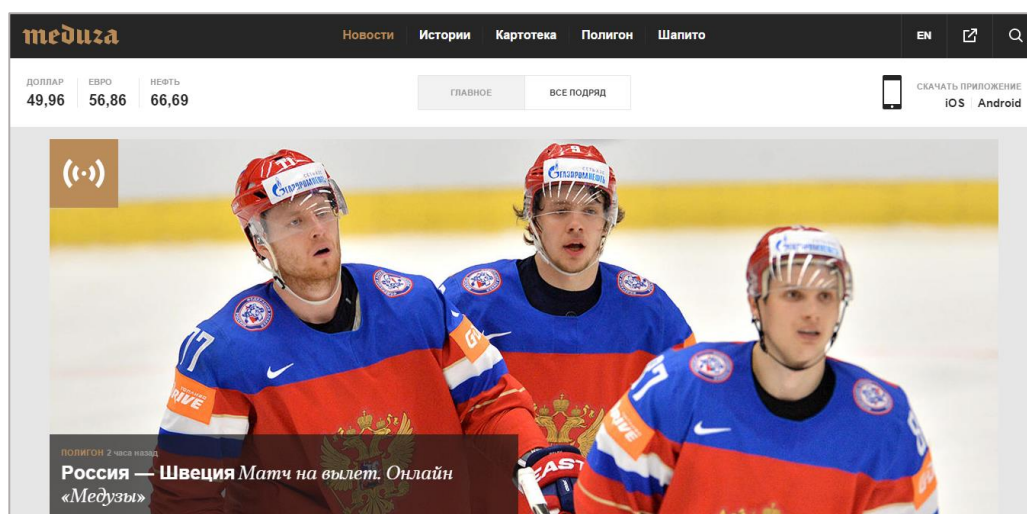


Fig. 2. Russian news web site Meduza. Source: medusa.io. Web. 15 May 2015.

Even if the differences are not so obvious, they are still important. Cultural distinctions can be found not only between exotic countries located far away from each other but also between the neighboring nations (Trompenaars and Hampden-Turner 7). Fons Trompenaars and Charles Hampden-Turner in the book *Riding the Waves of Culture. Understanding Cultural Diversity in Business* provide an example of the cultural gap between Belgians and Dutch effecting. The authors claim that the difference lays in the accepted ways for supervisor to communicate with subordinates. Moreover, the authors state that the two cultures hold very different approaches to the business hierarchy in general. However, the countries are immediate neighbors.

The present Thesis focuses on cultural differences between Russia and Belgium and its web design expression. Although cultures of the chosen countries are not opposite in any sense, they are not exactly the same. Edward Hall claims “Culture has always been an issue ... between Europe and Russia” (Hall 2). This thought is supported by results of academic research of Nikolas K. Gvosdev presented in his article *Russia: European but not Western?* The author implies that there are some differences in mentality of Russian and Western people, but are they significant enough to influence web page perception?

It can be considered, that the design features depend merely on personal preferences of web designer or his client. Reasons of the differences can be counted as mechanic, economic and technological. However, this approach ignores differences in ways of thinking of different cultural groups (Hofstede, Hofstede and Minkov 4). The same solutions cannot work with the same efficiency in every possible culture in the world. The economic models, the tendencies in technological innovations would depend on the values of the people who control them. The values and behavioral schemes would affect the way people make decisions. It means that culture influences the areas where people have to decide how product must be made, how some practices must be performed. All it leads to the statement that design decisions are affected by the cultural environment.

It can be suggested that globalization of technology will reduce importance of cultural differences. However, Hofstede states, that even though software of the machines is being globalized, software of the mind is not (Hofstede, Hofstede and Minkov 391). All societies face the same problems, but their solutions differ (Hofstede, Hofstede and Minkov 29). So that the same task to make a web site of city is performed in different ways in different cultures. Badre states that cultural usability influences how “color, spatial organization, fonts, shapes, icons, and metaphors, geography, language, flags, sounds, and motion contribute to the design and content of a Web page, which directly affects the way that a user interacts with the site.” (Badre 2) Some researchers use the term ‘culturability’, which is a hybrid of ‘usability’ and ‘culture’, to describe the relations between culture and design (Cyr and Trevor-Smith 4).

The research in the field of cultural usability is very important, because it can give the theoretical base for international cooperation. It can also help to increase cultural awareness in the situation of progressive globalization and can improve practice-oriented activities like design in intercultural environment. If the research of this kind is broadened and continued, then it can create a basis for web designers to create an optimal user experience for members of different cultures. It can improve people’s daily experience of the web and provide them with better working tools online.

1.2. Motivation

The decision to convey the research in the field of digital culture was logical and natural in my case. I have always been bounded to it from one side or another. When I studied at school, my main area of interest was programming on C++ and Pascal languages. I was about to pursue a software developer career. However, after finishing the high school I decided to follow my creative passion and got into visual culture and design area. Now the interest in producing digital objects remains the main theme for me. I aspire to work in the sphere of web design in future, so I conducted the research not only from the position of outside observer, but of a participant of the design process.

Being an international student in Belgium I understood how important cultural awareness is, how simultaneously similar and different Belgian and Russian cultures are. Following Master of Cultural Studies program I found how much is there to be seen and found in the area of design from cultural perspective. So far, the research question is important for me personally as investigation of the nature of the processes happening around.

1.3. Research Question

In a very broad sense, web interface can be studied as a part of communication and as a stage of human-computer interaction. It has to communicate information from one person to another or from a service to a person. In any case, the most influential element of this interaction is a human. A person, who will use a web site, is the determining factor for many design solutions. There are many sources on web design telling how to engineer an optimal user experience for different categories of users. Some of them differentiate target audiences by gender, age, professional occupation. Other ones differentiate the audiences by their goal for the task performed on a web site. However, the cultural differences of web site user are less commonly studied. Although, it could become the key point in our understanding of the underlying processes of web site perception on an international arena. In the present Thesis I study the audiences of the web sites performing the same function in Belgium and Russia in order to find the answer to the question: how cultural expectations influence user experience on the web?

1.4. Methodology

The following paragraphs reveal step by step how the research for the present Thesis has been carried.

The first part of the present Thesis consists of theoretical discussion of the studied field. The discussion starts from definition of culture. Next, I provide three theories that allow comparing cultures by objective criteria. The comparison is mainly derived from the theory of national cultural dimensions of Dutch social psychologist Geert Hofstede. His investigation on this topic started at 1967. After years of research, his latest book *Cultures and Organizations: Software of the Mind* was published in 2010 in co-authorship with Gert Jan Hofstede and Mikhail Minkov. It contains the newest insights and findings of the authors. They claim that the “culture only exists by comparison.” The authors provide score of the countries by six dimensions. A vast number of articles supports the theory of Hofstede, which gives an objective and scientific basement to my research. Next, cultural comparison is performed with the help of the theory of Trompenaars and Hampden-Turner. Additionally, Belgium and Russia differ by a criterion introduced by Edward Hall. The three abovementioned theories provide principles for cultural comparison from different perspectives.

On the one hand, Hofstede states in his onion model that culture consists of symbols, heroes, rituals and values with practice as an element binding them together. On the other hand, onion model of Trompenaars and Hampden-Turner says that culture includes artifacts and products, norms and values and basic assumptions. All in all both theories imply that interconnected visible and invisible layers compose culture. In the present paper I gathered the information about invisible part from the widely recognized theories and try to find the correlation of it with the visible expression – web design.

While studying the differences of the web sites I avoid any value judgments about the two cultures. The cultures differ as the reality of life of its members. Mihaly Csikszentmihalyi says: “We still might object if a young Arab drives a truck of explosives into an embassy, blowing himself up in the process, but we can no longer feel morally superior in condemning his belief that Paradise has special sections reserved for self-immolating warriors.” (Csikszentmihalyi 78) I acknowledge that every design solution is good for its context, and my research is aimed to find the differences without stating any personal preferences.

The next step of the literary overview for the Thesis is covering questions of psychology. I investigate how psychology is connected to the design area. It helps me to explain why careful designing of the web is important for the creation of optimal user experience, and how the user’s state, mood and productivity is affected by the means of design. The main sources of this area are multiply published and time approved theories *Flow. The Psychology of Optimal Experience* by

Mihaly Csikszentmihaly, famous for his study of happiness and creativity, and *The Design of Everyday Things* (previously published as *Psychology of Everyday Things*) by Donald A. Norman, well-known researcher in the field of cognitive science and user-centered design.

The next part of theoretical overview is connected with the notion of web site and observation of web design. In several last decades the field of web design has been under close attention of many researchers. Due to this, there are many practical recommendations for designers of how to organize human-computer interaction. Sometimes they appear as a list of tutorials for graphic redactors, bunches of color palettes, sets of icons and buttons. The most popular literary sources on web design are observing it from a certain level of generalization. The core concepts of the area are *Save the Pixel* and *Web Design Is Dead* by Ben Hunt and *Don't Make Me Think* by Steve Krug. They both are considered to be among the most influential figures in effective web design. The authors have written several books and spoken at conferences at the international level. They are looking for patterns and rules in web design and its perception by users. These patterns are among the main points of the research on web design for the present Thesis.

Going to the second part of my research, the abovementioned theories are applied to the case study web sites. Design elements of the case study web sites from Belgium and Russia are compared to each other in order to find consistent differences, if there are any, and to find whether they correlate with cultural differences of the observed countries. I decided not to focus on personal web sites and blogs, because they are based on one person's preferences and are often made for fun. I do not also focus on online shops in order not to mix international marketing and advertisement with culture-related factors in design. It can be also a confusing factor when an organization has international business partners, which blend the border of culture related features. It is expected that the most culture determined web sites belong to the local governments (Cyr and Trevor-Smith 9). This forms out a group of web sites of region-related public organizations, which are cities. The sample size has to be large enough to show consistent patterns of web design in each country. Case study for the present paper is a set of 100 official web sites of the largest cities of Belgium and Russia ordered by population, 50 on each side. The web sites were chosen based on population size and availability of web sites. The information about the population size has been taken from two resources. In case of Belgium, the information is from a scientific news site *Mongabay*, and in case of Russia it is from a special portal about world population *World Population Review*. The resulting list of examined Belgian and Russian web sites ordered by population is presented below (Tables 1 and 2).

Table 1. Web sites of Belgian cities

Brussels	Mechelen	Verviers	Braine-l'Alleud	Halle
Antwerpen	La Louvière	Mouscron	Brasschaat	Knokke-Heist
Gent	Kortrijk	Beveren	Vilvoorde	Schoten
Charleroi	Hasselt	Dendermonde	Herstal	Grimbergen
Liège	Oostende	Beringen	Maasmechelen	Lier
Brugge	Sint-Niklaas	Turnhout	Waregem	Mol
Namur	Tournai	Dilbeek	Châtelet	Wavre
Leuven	Genk	Heist-op-den-Berg	Ieper	Binche
Mons	Seraing	Sint-Truiden	Ninove	Lommel
Aalst	Roeselare	Lokeren	Geel	Menen

Table 2. Web sites of Russian cities

Moscow	Ufa	Yaroslavl	Penza	Bryansk
Saint Petersburg	Volgograd	Barnaul	Naberezhnyye Chelny	Ivanovo
Novosibirsk	Perm	Vladivostok	Astrakhan'	Magnitogorsk
Yekaterinburg	Krasnoyarsk	Irkutsk	Makhachkala	Kursk
Nizhniy Novgorod	Saratov	Khabarovsk	Tomsk	Tver
Samara	Voronezh	Orenburg	Kemerovo	Nizhniy Tagil
Omsk	Tol'yatti	Novokuznetsk	Tula	Stavropol'
Kazan	Krasnodar	Ryazan'	Kirov	Ulan-Ude
Rostov-na-Donu	Ulyanovsk	Tyumen	Cheboksary	Arkhangel'sk
Chelyabinsk	Izhevsk	Lipetsk	Kaliningrad	Belgorod

The chosen web sites are compared by a set of criteria from the following groups: color scheme, structure, elements, content. Comparing the color scheme of web sites I tried to avoid operating only with subjective assumptions. To do so, I used a specially developed software application. I gathered screenshots of home pages of the case study web sites and analyzed color schemes with the help of application. It is calculating prevailing colors using vector quantization of k-means clusterization and method of dominant colors determination in the image through the ratio of the pixel to a given set of colors in HSV color model. The other elements are compared using tables for each group of criteria. These methods provide me with statistic base for the effective comparison.

The third part of my research consists of the results of a number of interviews. As a part of preparations for this step of the research, I have composed templates of Belgian and Russian typical city web sites based on the data derived from the previous analysis. The templates were accompanied by the set of questions, which were answered both by respondents from Belgium and from Russia. In total, I conveyed qualitative interviews with eight respondents, 4 for each country. The information gathered during the interviews allowed me to assist the results of statistical information derived from the web sites analysis.

2. Theoretical Background

In the following lines I investigate the differences of Belgian and Russian cultures, the psychological aspects of the studied area and the notion of web design.

2.1. Culture

“Culture does not just lie in the way one eats or dresses, but in the manner in which they present themselves as an entity to the outside world.”

Can Cemal Cingi

Before we can explore the intersection of design and culture, it is important to define what is understood under the term ‘culture’. Oxford Learner’s Dictionary gives multiple explanations of this word. Some researchers imply that there are more than 300 only anthropological definitions of it (Victor). Can Cemal Cingi tells in his research about the role of the culture in communication that “culture is, basically, a set of shared values that a group of people holds” (Cingi 2). Those values are influencing the way people think and act and their criteria to judge behavior of the others. Culture defines what clothes people wear, which language they speak, and also how they are greeting each other, from which distance and how loud they talk (Cingi 3). The rules are usually taken by the members of the culture for granted and even “absorbed subconsciously” (Cingi 2). This absorption was reflected in following definition of culture: “the collective mental programming of the human mind which distinguishes one group of people from another” (Hofstede). Trompenaars and Hampden-Turner define culture in another way. They determine it as “the way in which a group of people solves problems and reconciles dilemmas” (Trompenaars and Hampden-Turner 6). Meaning of the abovementioned three definitions leads to the understanding of culture as a model of thinking and acting. Moreover, Hall claims that the model is aimed “to enable the user to do a better job in handling the enormous complexity of life” (Hall 13), where culture defines what is important for people and what is ignored (Hall 85).

The features of a culture can be found and studied only through its comparison with another culture (Hofstede). The popular saying “fish do not know they are in water” reflects the relationships between people and their culture. However, norms and traditions of one culture should not be studied from the standards of another. There should be no superiority of any culture above the others in the academic research (Cingi 2). It is suggested by the principle of cultural

relativism that there is no better or worse culture in the world. Because the observer is always a member and actor himself, there is no possible position for a person to claim any culture to be better than another one (Hofstede, Hofstede and Minkov 25). In the present research, I do not make any judgements about value of observed cultures. Instead of that, I compare Belgian and Russian cultures admitting the equality of their values.

In the following lines, I describe concepts of Hofstede, Trompenaars and Hampden-Turner, and Hall that provide objective criteria and basis for comparison Belgian and Russian cultures. Next, I reveal psychological aspects of the studied field. Finally, I provide an overview of web design components and brief history of it.

2.1.1. Culture Comparison by Hofstede

The effective tool for comparison of cultures is the theory of national cultural dimensions introduced by Geert Hofstede. The author provides culture score of compared countries by six dimensions. Besides, he states that culture score shows relativity of values in different countries. He says that without comparison the score would be meaningless.

Hofstede admits that his comparison operates from a certain level of generalization. It allows gathering information about average indexes for countries like Belgium, even though there are cultural differences between regions of it. The same situation can be found on the territory of Russia, where different ethnic groups with different national histories and identities live together as one country. Nevertheless, the level of generalization shows that distinction between the countries is much bigger than between the regions inside them. Some of the scores are based on law of big numbers, and they describe socially approved values but not reality of life of every individual (Hofstede).

Culture affects presentation and design of many products. It can be seen even in the design of aircrafts. For instance, European Airbus requires minimum interference from a pilot, while U.S. Boeing needs more involvement of an aviator (Hofstede, Hofstede and Minkov 409). Hofstede suggests that it can be explained by higher uncertainty avoidance score of the European countries, and by higher need of U.S. pilots to feel their power in the situation. Marieke de Mooij conducted a research analyzing consumer behavior data connected to the cultural differences. She states that consumption decisions can derive from both social and functional needs (de Mooij). For example, use of clothes meets people's functional needs, while fashion serves for the social ones. By making the analogy to the fashion and clothes, we could say that creation of the web site is for the functional needs, but implementing the concrete design layout is for the social needs. The author states that social needs are culture-bound (de Mooij). So far, web design is a culture-bounded notion.

To answer the question if Belgian and Russian cultures are different or not, I suggest considering the following diagram (Fig. 3). It presents culture scores of Russia and Belgium by the theory of Hofstede. The terms standing for six dimensions for cultural comparison are following:

1. Power distance.
2. Individualism versus Collectivism.
3. Masculinity versus Femininity.
4. Uncertainty avoidance.
5. Long- or short-term orientation.
6. Indulgence versus Restraint.

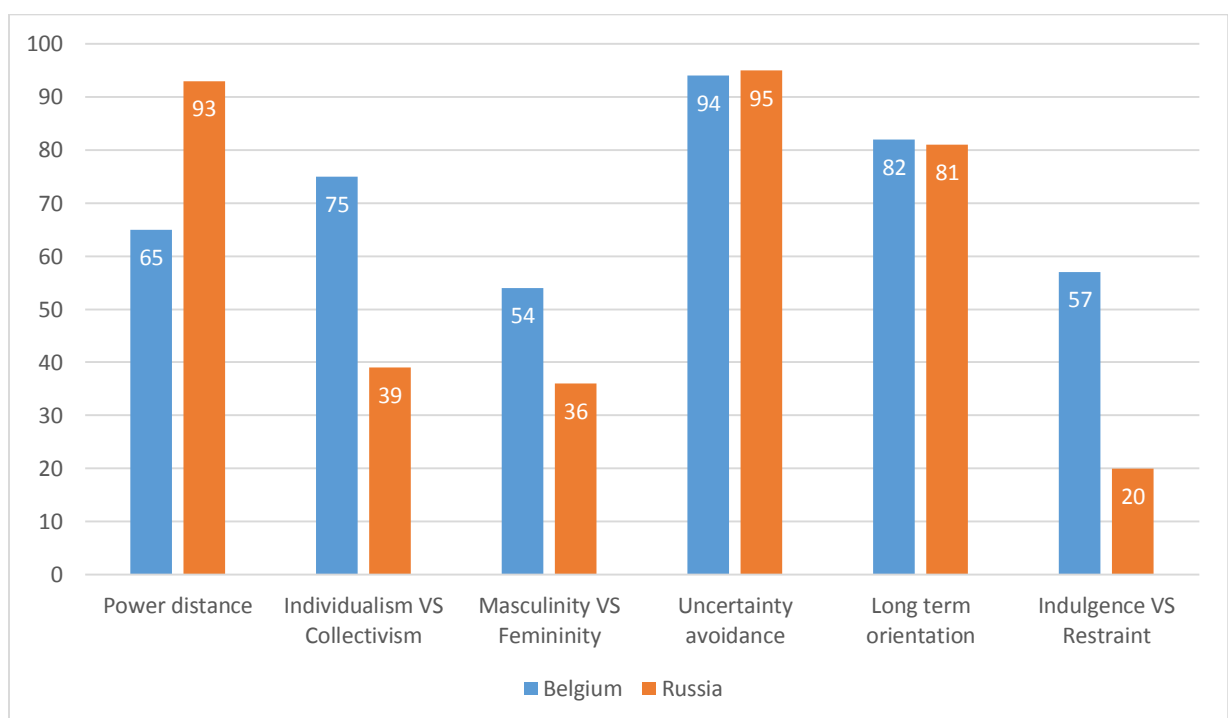


Fig. 3. Culture score comparison.

Power distance

The first dimension refers to inequality of power distribution. Inequalities exist in every society (Hofstede, Hofstede and Minkov 54). The Power Distance Index shows how natural for its members the idea of power differences is. Hofstede defines it as “the extent to which the less powerful members of institutions and organizations within a country expect and accept that power is distributed unequally” (Hofstede). Members of a culture with a high score of power distance would accept the inequality easier than those who are from a culture with low score by this dimension.

Belgium has a score of 65 of power distance. It means that Belgian society accepts inequalities. The power in Belgium is centralized and hierarchy is strong. It is also shown through the principle of subsidiarity applied in Belgian Cultural Policy. It is an organizing principle prescribing to handle a matter by the lowest authority capable of dealing with it effectively (Baetens). The principle implies that higher authorities possess more power than the lower ones. It can also mean that some privileges are inaccessible for the lower position holders. The attitude towards managers is formal, and the informational flow and control in the working space are hierarchical (Hofstede).

Russian score of 93 points is much higher than Belgian one. It is the largest country in the world and at the same time it has centralized power, which is distant both hierarchically and geographically for many regional centers. Due to the centralization of power in Moscow, 80% of all financial potential is concentrated there (Hofstede). Status symbols and subordination are very important in Russian culture. Behavior of its members must correlate with status role. It reflects in every formal and business interaction like negotiations, meetings, communication on the working place in top-down organizational patterns (Hofstede). The author states that while communicating with strangers, Russians tend to take formal style of communication as a sign of respect (Hofstede).

Generally, power distance is not only an extent to which power can be given in different proportions to the people, but also restraints that come together with the status. As for the governmental institutions, there are proper ways to behave prescribed for the authorities in cultures with large power distance, which are rooted in culture-specific beliefs (Hofstede, Hofstede and Minkov 76). Status symbols are preferred and emphasized in Russia more than in Belgium (Hofstede). It is presumably expressed by the formality of web site look. The distance between the user and web site owner is supposedly different in Russia and Belgium. Computer graphics designer Aaron Marcus and researcher Emilie West Gould suggested following implications of power distance level effect on web design. Firstly, high level of power distance corresponds with highly structured information. Secondly, it leads to the tall hierarchy and emphasis on official stamps and social order. Next, cultures with high power distance celebrate leaders more than the ones with low power distance level. Furthermore, use of restrictions and barriers is suggested to be more frequent in cultures with high power distance, as well as the use of social roles for information organization (Marcus and Gould 36). The influence of power distance level on web design is discussed in the chapter Case Study Analysis, paragraphs General Criteria, Structure and Content.

Individualism versus Collectivism

Hofstede defines the second dimension as “the degree of interdependence a society maintains among its members.” (Hofstede) It allows measuring to which extent a culture is person- or group-based. In other words, whether the people define themselves in terms of “I” or “We” (Hofstede). Individualistic or collectivistic norms of a society heavily influence the consciousness of its members. Individualistic societies encourage people to take care of themselves and their families only (Hofstede). Primary emphasis is placed on the self, personal preferences, privacy and independence (Cingi 4). Meanwhile, in collectivistic societies people look after each other in bigger groups (Hofstede). People are concerned about loyalty and their responsibilities for the community (Cingi 4). In collectivistic societies, the word family means actually an extended family. It includes not only parents and children, but also grandparents, uncles, aunts and other housemates (Hofstede, Hofstede and Minkov 91). Cingi defines this dimension as the most important one in distinguishing countries (Cingi 4).

Belgian score of 75 points is very high. It means that for Belgians private life is of greater importance than belonging to a group (Hofstede). In working environment, relationships are based on contract. The autonomy of a worker is emphasized. Managers try to keep personal contact with colleagues. The combination of high score of power distance and individualism creates a tension in culture, producing a contradiction. Individualistic Belgians still need a systematized hierarchy (Hofstede).

Russia has a low score of individualism. The 39 points by this dimension underline the Russian habit to gather in groups. Hofstede gives another example of collectivistic behavior: “If Russians plan to go out with their friends they would literally say “We with friends” instead of “I and my friends” (Hofstede). Russians are concerned with the relationships with friends, family and people in a neighborhood. On a working place, their productivity depends a lot on relationships with colleagues.

So far, there is a difference in emphasis on “We” as in collectivistic and “I” in individualistic cultures. Thus, Russian web sites supposedly put emphasis on the fact that it presents the institute, a group of people working in administration, while Belgian ones presumably address individuals. Moreover, Russian web sites might be more concerned with patriotism than Belgian ones. It can be caused by a stronger will of the local governments to present themselves as a part of a group, to identify with the larger-scale institution – Russian Federation. Concerning individualism and collectivism of cultures, Marcus and Gould proposed some influences of it on web design. Firstly, maximized (individualistic) or underplayed (collectivistic) room for demonstration personal achievements. Secondly, different extent of use of images of success expressed in individualistic societies through materialism and consumerism demonstration and in

collectivistic ones through social-political achievements. Next, emphasis on individuals is combined with importance of the youth, while accent on the groups goes with the aged and experienced experts and demonstration of the results and products. Furthermore, official slogans prevail in collectivistic societies, as well as the emphasis on tradition and history. Additionally, members of individualistic societies are more eager to provide personal information, while member of collectivistic cultures try to protect data that can differentiate them from the group (Marcus and Gould 37). Accuracy of some of the abovementioned assumptions is shown in the chapter Case Study analysis, paragraphs General criteria and Content.

Masculinity versus Femininity

The dimension of masculinity indicates if society is driven by competition, achievement and success, or by caring for others and working for enhancing quality of life (Hofstede). In the countries with high score of masculinity, standing out from the crowd is appreciated and admired as well as the high earnings, recognition and challenge (Hofstede, Hofstede and Minkov 139). “The fundamental issue here is what motivates people, wanting to be the best (masculine) or liking what you do (feminine),” state Hofstede, Hofstede and Minkov (Hofstede, Hofstede and Minkov 139). Members of masculine cultures are considered tough and materialistic. People from the feminine cultures, on the contrary, emphasize modesty, virtues and sensitivity. The important role in feminine society is played by cooperation and security (Hofstede, Hofstede and Minkov 139). Cingi claims that cultures can be considered either as socio-emotional or task-oriented depending on this dimension (Cingi 5).

The Belgian score by the dimension of masculinity is 54, which is balancing in the middle of contradictory features (Hofstede). It is not typical for Belgium to adopt win-lose negotiation style, but very common to consider each point of view and to come to a mutual agreement (Hofstede).

Russian score of 36 points is relatively low. It is considered important not to boast in Russian culture. Even traditional fairy tales celebrate the most modest persons, who represent the good and win in every plot. The typical Russian fairy-tales *The Tale of the Fisherman and the Fish* and *The Tale of Tsar Saltan* illustrate the statement. They have been written by Alexander Pushkin in 1831-1833 years. It shows that this tradition was already established in the Russian culture two centuries ago. Moreover, dominant behavior is accepted between boss and subordinate, but not appreciated among peers in Russia (Hofstede).

In the masculine society readers are more interested in facts and data, while in the feminine ones they are interested in stories behind the facts (Hofstede, Hofstede and Minkov 164). It is more common in feminine societies that the internet is used for communication rather than for real

task performing (Hofstede, Hofstede and Minkov 164). According to Marcus and Gould, high masculinity of a culture can influence web design in the following way. First, the prevailing importance of quick results for tasks with navigation oriented to control and effective use. Second, competitive base and utilitarian purposes of graphics, sound and animation use. Feminine society web design is suggested to be oriented on unifying values through use of visual aesthetics, poetry with the focus on cooperation and support (Marcus and Gould 39). The realness of some of the suggested differences is shown in the chapter Case Study analysis, paragraphs Layout and Content.

Uncertainty avoidance

All human beings have to face the fact, that they do not know what will happen to them (Hofstede, Hofstede and Minkov 189). This uncertainty creates anxiety. The dimension of uncertainty avoidance measures “the extent to which the members of a culture feel threatened by ambiguous or unknown situations and have created beliefs and institutions that try to avoid these” (Hofstede).

Belgium has one of the highest scores by this dimension at 94. The high uncertainty avoidance is reflected in stressfulness of unintended changes for Belgians. They favor planning and a high level of expertise (Hofstede). At 95 Russian culture has also a very high index of uncertainty avoidance. Thorough planning and briefing is very common among Russians. According to Hofstede, they prefer having background information and knowledge about context (Hofstede).

As far as both Russia and Belgium have high index of uncertainty avoidance, according to Marcus and Gould their web design should have following traits. Firstly, simplicity in layout and clear metaphors. Secondly, they are predicted to use additional cues such as color, typography, multimedia in order to reduce ambiguity (Marcus and Gould 41). Additionally, both Russian and Belgian web sites are expected to use more expertise rather than humor, which is typical for culture with strong uncertainty avoidance (Hofstede, Hofstede and Minkov 208). These traits are discussed in the chapter Case study analysis, paragraphs Layout and Content.

Long-Term Orientation

According to Hofstede, the dimension of long-term orientation describes, “how every society has to maintain some links with its own past while dealing with the challenges of the present and future” (Hofstede). The societies with high score at this measurement tend to get prepared for the new challenges of the future instead of leaning in traditions and norms of the past.

Belgium is a pragmatic country with a score of 82 at this dimension. At 81 Russia has almost the same score of long-term orientation. Therefore, the two countries have pragmatic cultures.

The closeness of both cultures at this point supposedly has a reflection in web design. The way of color use, orientation on usability and design trends in general can be the same. Marcus and Gould claim that web design is influenced by long-term orientation in the following way. Firstly, the content is focused on achievement of practical value. Secondly, relationships are playing the role of the source of information and credibility enhancement. Thirdly, the users demonstrate patience in achieving results (Marcus and Gould 43). These features describe the general attitude of Belgian and Russian web sites. Some of the influences are described in the chapter Case Study analysis, paragraph Structure.

Indulgence

The dimension of indulgence defines “the extent to which people try to control their desires and impulses” (Hofstede). Hofstede calls weaker control ‘indulgence’ and strong control ‘restraint’.

Score of Belgium by this dimension is 57. Therefore, Belgian culture can be considered indulgent. Belgians aspire to realize their impulses and desires (Hofstede). They seek for enjoying life and having fun. It is conjunct with optimism and appreciation of leisure time (Hofstede).

Russian culture is marked as restrained at the score of 20 by this dimension. As a typical restrained culture, it has inclination to cynicism and pessimism (Hofstede). Russians tend to control their desires and do not focus a lot on leisure time. They are restrained in their actions by social norms. Indulging themselves seems to be wrong for them (Hofstede).

In general, members of the cultures with lower index of indulgence appreciate less spending time and money to fun-related activities, leisure and travelling (Hofstede, Hofstede and Minkov 281). Therefore, Russian web sites are expected express the typical for restrained cultures appreciation of moral discipline by more reserved layouts (Hofstede, Hofstede and Minkov 291). Another key difference is the attitude towards smile in different types of cultures. Hofstede, Hofstede and Minkov state that in indulgent cultures smile is perceived as a norm, and in restrained as a suspect (Hofstede, Hofstede and Minkov 291). It is discussed in the chapter Case Study analysis, paragraphs General Criteria and Layout.

2.1.2. Culture Comparison by Trompenaars and Hampden-Turner

Trompenaars and Hampden-Turner suggest seven criteria to compare cultures to one another. Five of them are devoted to the relationships between people: universalism versus

particularism, individualism versus communitarianism, neutral versus emotional, specific versus diffuse and achievement versus ascription. The next criterion is related to time. It allows distinguishing sequential and synchronic countries (Trompenaars and Hampden-Turner 8). The last criterion is connected with environment. By the relations with it Trompenaars and Hampden-Turner differentiate countries with internal or external locus control (Trompenaars and Hampden-Turner 8). In the following lines, I explain the criteria and state the features of the two cultures by each of them.

Universalism versus Particularism

Trompenaars and Hampden-Turner define Universalist approach as a rule shared by the members of the culture: “What is good and right can be defined and always applies” (Trompenaars and Hampden-Turner 8). On the contrary, particularism is expressed through the greater attention to the context and circumstances. Belgian culture is defined as universalistic one (Trompenaars), where the “rules are valued more than the relationships” (Christiansen 512). On the other hand, Russian culture is claimed to be particularistic making more effort to adapt to every possible situation and circumstances (The Seven Dimensions of Culture). The implications of the difference are shown in the chapter Case Study analysis, paragraph Structure.

Individualism versus Communitarianism

The measurement of individualism and communitarianism by Trompenaars and Hampden-Turner overlaps with Hofstede’s individualism dimension. It reveals the extent to which “people regard themselves primarily as individuals or primarily as a part of a group” (Trompenaars and Hampden-Turner 8). This dimension is discussed in the paragraph Culture comparison by Hofstede.

Neutral versus Emotional

According to Trompenaars and Hampden-Turner, neutral and affective cultures differ by emotion control, objectiveness and detachment of interactions (Trompenaars and Hampden-Turner 9). Belgian and Russian cultures both appear to be close to affective side, but Belgian is marked as more neutral of the two (Supraner). It means that Russians a little easier get angry at work and involve more emotions in conflicts.

Specific versus Diffuse

According to Trompenaars and Hampden-Turner, this criterion is concerned with relationships between people. It can be limited by a specific contract, or it can involve diffuse

personal contact above the contracts and functions (Trompenaars and Hampden-Turner 9). Russia and Belgium are claimed to be almost equally specific countries (Binder 32)

Achievement versus Ascription

Trompenaars and Hampden-Turner describe achievement-oriented cultures as those that put accent on accomplishments, and ascription-oriented cultures as those that emphasize attributed status (Trompenaars and Hampden-Turner 9). Belgium and Russia appear to be close by these criteria, even though Belgium is a little more shifted towards ascription-orientation (Joynt and Warner 113).

Relation to environment

Relation of members of a culture to environment is expressed through external or internal locus control. Some cultures see the major influence on events of the life in external forces. The other ones explain the achievement and losses by internal reasons (Trompenaars and Hampden-Turner 10). Russian culture is described as the one with greater emphasis on the external control, while Belgian gives more credit to the internal control (Binder 32). The relation of this difference with web design is discussed in the chapter Case Study analysis, paragraph Content.

Relation to time

Trompenaars and Hampden-Turner explain the two different attitudes towards time as sequential and synchronic (Trompenaars and Hampden-Turner 10). The differences lay in the ways of planning, strategy building and task performing. Synchronic cultures favor multitasking and blurring divisions between past, present and future. In countries with sequential cultures, it is preferred to do one thing at a time, to plan a sequence of steps and to divide achievements of the past from present tasks and future goals. Russian culture is described as typical sequential one (Juurikivi 18) as well as Belgian (Cultural Dimensions).

2.1.3. Culture Comparison by Hall

Anthropologist Edward Hall suggested two categories of cultures in his book *Beyond Culture*: low-context and high-context (Hall 112). Low-context countries favor explicit communication, while in high-context societies a lot of information remains unsaid as self-evident. Communication in low-context cultures requires more code than in high-context cultures. This distinction is connected with another culture parameter discussed in the previous chapter. The low-context type communication is typical for individualistic societies, and the high-context – for collectivistic ones (Hofstede, Hofstede and Minkov 109). This division is explained by a greater

distinction between “insiders and outsiders” (Hall 113) in the two types of culture. The high-context communication requires background knowledge shared by the members of a group, while low-context communication provides enough information to understand it without any previous discourse. Belgian culture is claimed to be low-context (Smit), while Russian culture is the high-context one (Dumetz). The implications of this difference are discussed in the chapter Case study analysis, paragraph Navigation.

2.2. Psychological Aspects

Psychology is a very common issue to be involved into a discourse about web design. Although, it often takes the level of a generalization applicable to the majority, Donald Norman implies that “there is no such thing as the average person” (Norman 161). It is a problem for many designers, who have to draw up a single pattern and design suitable for everyone. Therefore, some authors pay attention to the cultural and person-related differences between people as a part of the psychological research.

Even though, much of human behavior is determined by subconscious reasons, it matches some of general patterns on a larger scale (Norman 125). Mihaly Csikszentmihalyi states in the book *Flow* presenting the research on regularities of happiness, that “regardless of culture, state of modernization, social class, age or gender, the respondents described enjoyment in very much the same way” (Csikszentmihalyi 48). Nevertheless, it differs how members of separate cultures approach and achieve the enjoyment. Moreover, the author claims that cultures differ by the degree of the “pursuit of happiness” they impose (Csikszentmihalyi 78). Csikszentmihalyi suggests, “Cultures are defensive constructions against chaos, designed to reduce the impact of randomness on experience” (Csikszentmihalyi 81). They reduce also the randomness of interface user experience, teaching people to work with computer systems. Cultures affect norms, goals and challenges we are used to face while working with interfaces (Csikszentmihalyi 81).

Cultural psychology studies has demonstrated that people from different cultures tend to differ in their basic perceptual processes and causal reasoning (Grossmann, Ellsworth, and Hong 3). The research conducted by Grossman and Kross showed that Russians are often imaged as brooders (Grossmann and Kross). Reflection upon negative feelings has more value for Russians than for members of Western cultures (Grossmann, Ellsworth, and Hong 5). Russians recognize negative traits faster and spend more time paying them attention. They also tend to see the impact of an event negative, while others see it positive (Grossmann, Ellsworth, and Hong 13). The relation between cultural background and emotions has experimental evidence from the comparison of Russians, Americans and Latvians (Grossmann, Ellsworth, and Hong 12). Culture affects norms of culturally accepted behavior and emotions. Grossmann describes the effect in the

following way: “Americans may feel that they should say that they are happy, look happy, and act happy in order to show that they are successful members of their culture. Russians may emphasize darker emotions in order to look like good Russians. Any or all of these processes may contribute to cultural differences in emotion.” (Grossmann, Ellsworth, and Hong 13)

However, some common features of human behavior influence the way designers should produce interfaces. For instance, it is a general rule that the “ability of conscious attention is limited” (Norman 164). The phenomenon is called ‘selective attention’. It leads to the focus of vision on some elements, while ignoring peripheral items (Norman 164). Norman in his book *The Design of Everyday Things* suggested some general principles for designers allowing creating interfaces that are easy to read and work with. He claims that it is necessary to explicitly determine possible actions, evaluate the current state of the system and to get a clear feedback to the user’s actions. He emphasizes the importance of visibility of controls and functions for a user to psychological comfort during the work with an interface.

The concrete commonly recognized patterns of web interface creation process are discussed in the following part.

2.3. Web Design

It is important to understand that visual design is not an art, but a process of finding a solution to enhance the functionality and aesthetical qualities of an object. It is a process of solving problems, which are often commercial. Nowadays, web design is no more merely web page production (Hunt, 2015). This process involves strategic thinking on a larger scale. It means that importance of the understanding of culture-related issues in web design cannot be overestimated.

Appearance of the European design is connected to the genesis of capitalism and industrialization (Markelov). The same beginning of design development took place in Russian context. However, the historical events has changed the situation on the Russian territory. It came to a refusal of capitalist values and commercial competition for a long time in the twentieth century. At the same time capitalism and methods of commercial design developed in its separate way on the West. Later, the principles of print design were transferred to the web in Europe.

The Western designers worked out methods like module grid. Later, it was adopted with some modifications by Russian design. However, making design stretchable according to the size of the screen without universal structure have always been a norm in Russian design. Now it is being adopted by the Western designers under the term ‘adaptive design’ (Markelov). So far, there were differences and interrelations between design principles and methods in Russia and Europe.

The history of particularly web design started from the “dark ages”, which begun at 1989 (Ruluks). They are called “dark” because of existing at the time only the black screen and few

monochrome pixels on it. The design was made only by a set of symbols and tabulation (Ruluks). From 1995, the Tables era of web design started with the appearance of the first browsers. Designers could structure the content of a web site placing tables within the tables. They coded on already existing at the time HTML (Ruluks). The title is abbreviation from HyperText Markup Language. At the same year, another language for coding titled JavaScript became the answer to the limitations of HTML. It allowed using pop-up windows and dynamically modifying or ordering the content. “It was a great technical and creative challenge,” says Ben Hunt (Hunt, 2015 71). The company with the title Macromedia released Flash redactor in 1996 and broke the borders of existing at that time web design. Designers could use any fonts, shapes, animations and interactive effects. However, from 2007 it started to decay. Moreover, Apple Inc. did not provide an opportunity to use it on their devices starting from the first version of iPhone (Ruluks). The next innovation in web design appeared in 1998. It was a new coding language separating content from the presentation. In fact, the content was still edited by HTML, but the formatting was made by CSS (Ruluks). The title of the language stands for Cascading Style Sheets. HTML and CSS continue to be the technological basement of web design nowadays. Nevertheless, they develop and transform from version to version. Now the newest versions of the languages are HTML5 and CSS3.

It was only in 2007, when the next big change of web design appeared as a trend of using grids and frameworks. The necessity of using grids was predetermined by the internet browsing from mobile phones and tablets. Another change, frameworks usage was intended to standardize often-used common elements like buttons, forms, and navigation symbols. They do not only make web design an easier process, but also improve the recognition of the elements performing the same functions on different web sites. The next influential idea, the responsive design, was suggested in 2010 proposing to display the same content in different layouts depending on the screen size of the device. It can be noticed, that the innovations of 2000-s were rather conceptual, because technically web sites are still built by HTML and CSS. The evolution of web design is predicted to continue conceptual developments rather than technical in the future (Hunt, 2015). Having a web site is no more an advantage for a company, but a prerequisite for entering a competition arena (Hunt, 2015). It means that now institutions have to enhance the quality of their web sites on every level from code to content.

The primary element of web design is a web site. In fact, web site itself is an abstract notion. It exists only in our imagination. Essentially, it is a number of separate pages with common layout, which are interlinked by navigational means and belong to the same topic (Lynch and Horton). The content of web pages is hypermedia: text, hyperlinks, graphics, images, video and other

multimedia (Heileman). So far, design is the primary process capable of making any web site a unified entity.

When designing any web site, a designer must solve a number of problems. General issues for designers are concerned with logical structure, visual layout and navigation of a web page.

The structure of a web page nowadays is in most of the cases determined by common templates used on the majority of web sites. It helps a user to recognize elements faster and more effective with reliance not only on content, but also on its location on the page. People can navigate and search through web pages faster, because they know where to look in order to find what they want. Patrick J. Lynch and Sarah Horton suggest in their *Web Style Guide* a scheme, showing the most often-used way to use the space on a web page (Fig. 4). Although it is not the only applicable structure of web pages, most of them include basic elements and their locations that are already familiar to users of text-driven information sites (Lynch and Horton).

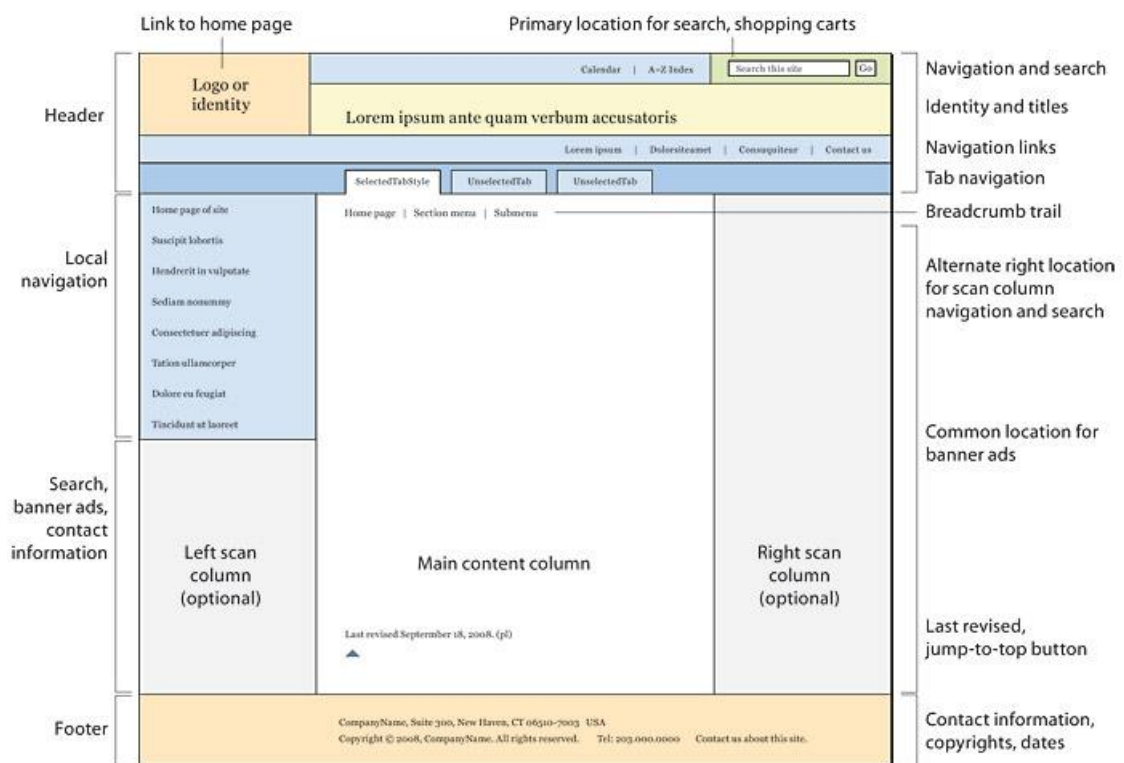


Fig. 4. Web site structure. Source: webstyleguide.com. Web. 15 May 2015.

Consistency of the suggested scheme is illustrated by an example of logo placement in the upper left corner of the page. It is a widely used convention, as the authors claim. They state that 99% of internet users will expect to find it exactly there. Moreover, they will expect it to be a link to the home page of the web site (Lynch and Horton).

In order to explain why designers should carefully consider locations of elements on the expected positions, researchers discuss the way in which people look at web pages. It is claimed

that people do not read the pages but skim it (Krug 22). Apple Inc. conducted a research project titled *Guides*, which discovered that people have two modes of looking through a web page content: browsing and focused searching (Laurel 25). Steve Krug in his famous book on web usability *Don't Make Me Think* (Krug 22) illustrates consequences of this process by suggesting readers to compare what designers build, and what users see (Fig. 5).

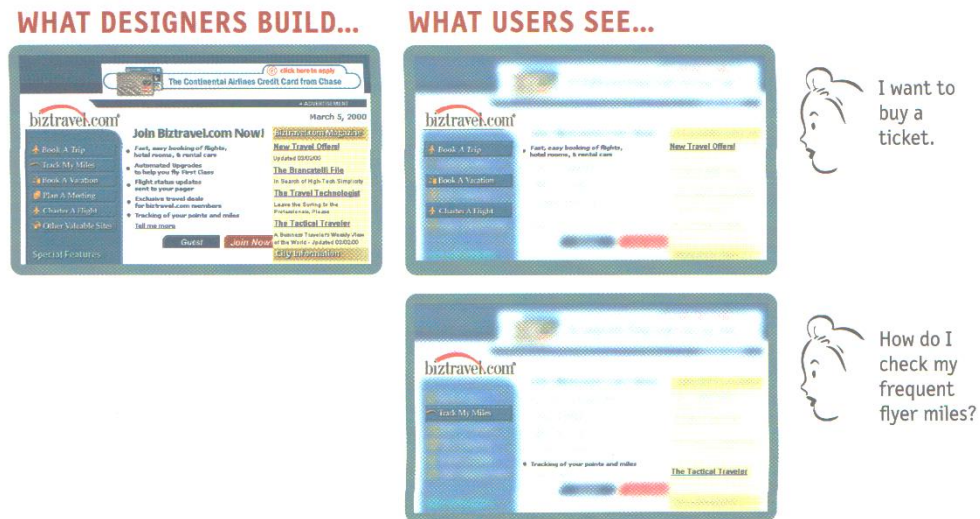


Fig. 5. What Designers Build... What Users See... Source: Krug, Steve. *Don't Make Me Think*. Print.

Thus, the structure of a web page is a powerful tool in the hands of web designers. It allows transmitting the hierarchy of the elements to the user before he or she actually reads a word on a web page.

Moving further, there are more design tools, which help to simplify a web page perception. Layout, colors and visual presentation of the web site are also very important. They are dependent on the web site function. Layout is capable of making all the web sites with the common structure to differ one from another. The visual look of the web site states the mood, the context and the status of it. One could immediately distinct the web site of fast food cafeteria (Fig. 6) from the web site of Michelin restaurant (Fig. 7) only by observing the prevailing colors, fonts, images and big shapes.



Fig. 6. Home page of pizza delivery web site.
Source: pizza.be. Web. 15 May 2015.



Fig. 7. Home page of Michelin restaurant.
Source: zarza.be. Web. 15 May 2015.

Considering layout, there is one general rule stating that in case of visual presentation of a web page less is more (Krug 38). Once there are too many elements on a page, they start to be perceived as noise. Too many menus and pop-up windows are annoying for user as well as “garbage text” appearing on the page (Laurel 74). Users start to be blind to bright blinking areas of web sites, because they expect it to be a commercial advertisement. It is important to consider these patterns during design process. No one important element of the web site should be mixed with visual noise. The communicative goal of a web site must be achieved despite the selective focus of users.

In case of navigation, most of the authors agree in following: usage of conventions is improving user experience (Krug). It is not a unique rule for web design. Aristotle suggested that pattern is a powerful source of pleasure (Laurel 88). The movement between pages and tabs must incline user to work in a flow, in a chain of easy decisions where to click next. It is important to make obvious those elements, which are clickable (Krug 37). If user spends too much time and effort thinking where to click next, he or she is most likely to leave the web site and give up muddling through it. Brenda Laurel in *Computers as Theater* links interface design to *The Psychology of Everyday Things* (1988) of Donald Norman. The author states that “the design of an effective interface—whether for a computer or a doorknob—must begin with an analysis of what a person is trying to do, rather than with a metaphor or a notion of what the screen should display” (Laurel 7). Web design must be focused on action, which can be performed on the web site. Otherwise, it would be just a set of nice pictures with text. In general, Norman suggests watching the user performing usual tasks in order to recognize mistakes of design. This approach is very close to those of American mechanical engineer Frederick Winslow Taylor (1856–1915). He improved industrial efficiency by watching workers’ movements during the working day, analyzing them and reducing time and effort wasting steps.

People working with interfaces are also under close attention. As early as in 1982 software design was already concerned as primarily communication medium (Heckel). Indeed, the messages of web sites are created by copywriters and designers and perceived by the audience. It

is not enough to simply create the presentation of a message. The user is decoding the message, and he or she plays a big role in this process. The both sides of this communication process must use the same language, the same context, the same common ground. In other words, in order to design an efficient interface it is necessary to focus on user. The user is the most important element, which makes an interface work. Laurel gives a strong metaphor to support this thought: “a computer-based representation without a human participant is like the sound of a tree falling in the proverbial uninhabited forest” (Laurel 2). Krug agrees upon this vector in web design, saying “doing the right thing” is “being considerate of the user.” (Krug 162)

It is dangerous for web designer to consider that all people want the actions to be performed in the same way. People have different tastes for layout, different expectations for navigation and structure. It is impossible to calculate precisely what people would or would not like. It would mean to find out what the average web user wants. “The only problem is, there is no Average User,” – says Steve Krug (Krug 128). Developing the suggestion of the author and abovementioned thoughts, I assume that culture is one of the reasons for the differences among the users.

2.4. Conclusion

So far, I have defined cultural differences and similarities of Belgium and Russia with the help of the theories of Hofstede, Trompenaars and Hampden-Turner, and Hall. By Hofstede, the main differences lay in the dimensions of power distance, individualism, masculinity and indulgence. According to Trompenaars and Hampden-Turner, Russia and Belgium differ by universalism and locus control features. In the terms of the concept of Edward Hall, Belgium and Russia, have the opposite low- and high-context cultures. From the psychological perspective, there are some differences of perception of people from different cultures. However, the majority of the features of web design has to obey the same rules. In fact, web design itself is a relatively new field, in which some common rules coexist with a big space open to experiments and diversity.

3. Case Study Analysis

Every web site is created in order to help a user to achieve his or her goal and to present effectively and attractively the information from a source. A web design customer wants to have a communicational tool to address target audience effectively. A designer tries to create web site as much useful and beautiful as possible. However, notions of beauty and usefulness vary from one culture to another.

In the following lines, the results of analysis of 100 web sites are presented together with explanation of their meaning from the perspective of cultural differences. In order to compare Belgian and Russian city web sites, I drew up a number of criteria for analysis.

- The general criteria start with the analysis of prevailing web site function, communicational style, languages in which the translation of a web site is available, and the presence of opportunity to register an account on a city web site.
- The structure of the web sites is analyzed by the usage of tile versus paragraph presentation of content, fixed versus adaptive width and the presence of a version adapted for mobile phones.
- The navigation of the web sites is analyzed through the general overview of menus, presence of drop-down and illustrated menus on the home page.
- The layout section comprises analysis of usage of multimedia slideshow, color statistics gathered by the means of the software application and by empirical analysis.
- The content is studied through analysis of elements on a web page, types of displayed photographs, type of an image used as the emblem of a web site and the presence of agenda and the news on the home pages.

3.1. General Criteria

General attitude towards web sites reveals an overall strategic thinking of its creator. It can show the differences of web design on a high level. This section comprises analysis of prevailing web site function, communicational style, languages in which the translation of a web site is available, and the presence of opportunity to register an account on a city web site.

3.1.1. Prevailing Web Site Function

During the analysis the function of a web site was identified by the immediate actions available on the first screen of home page. If the first suggested actions were finding popular places, planning visits to touristic attractions and finding a place to stay, eat or do shopping, then the site was considered a touristic one. In case when the first available actions were intended for

the citizens, for example reading governmental news, asking economic and domestic questions, it was considered administrative. Some cities have two web sites for each category of users. In this case the preference was given to the primary city web site. The results of the analysis are presented on the following diagrams (Fig. 8, 9).

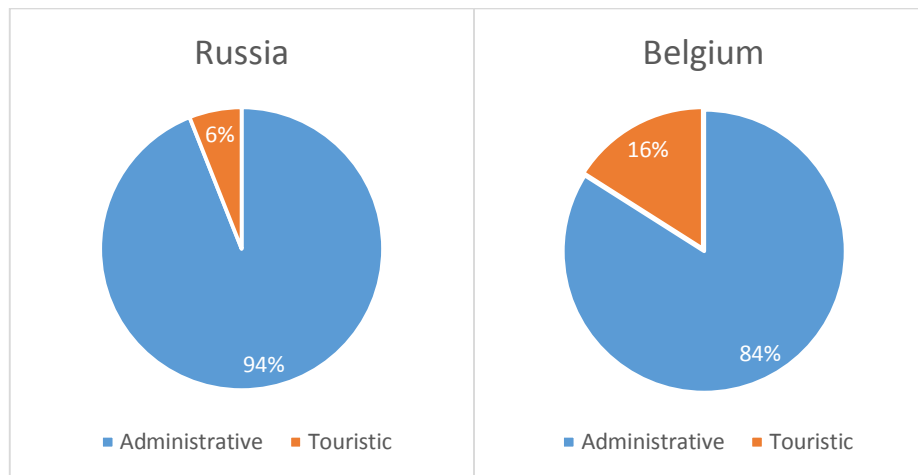


Fig. 8, 9. Prevailing function of city web sites.

Results of the analysis at this point has shown that 94% of Russian sites are administrative, and in case of Belgium the result is 84%. The slight difference can be explained by higher level of indulgence of Belgian culture. It reflects in larger promotion of recreational activities and tourism on Belgian web sites rather than on Russian. Nevertheless, the majority of the sites on the both sides are administrative. It means that their primary function is quiet the same. As far as web sites from both sides belong to the same scope, they can be justly collated without appealing to a comparison of apples and oranges.

3.1.2. Communication Style

The communication style was analyzed by two criteria: strict formality versus informality of the overall tone and individual versus collective orientation of a web site.

Strictly Formal or Informal Tone of a Web Site

The parameter of formality of a web site was defined by the shapes, colors, fonts, images and the working or entertaining directivity of the web sites. Some of the city web sites present a serious layout with strictly formal tone of content and its presentation (for example, Grimbergen, Belgium), while the others show the informal recreational attitude (for instance, Beveren, Belgium). The results of the analysis are presented on the following diagrams (Fig. 10, 11).

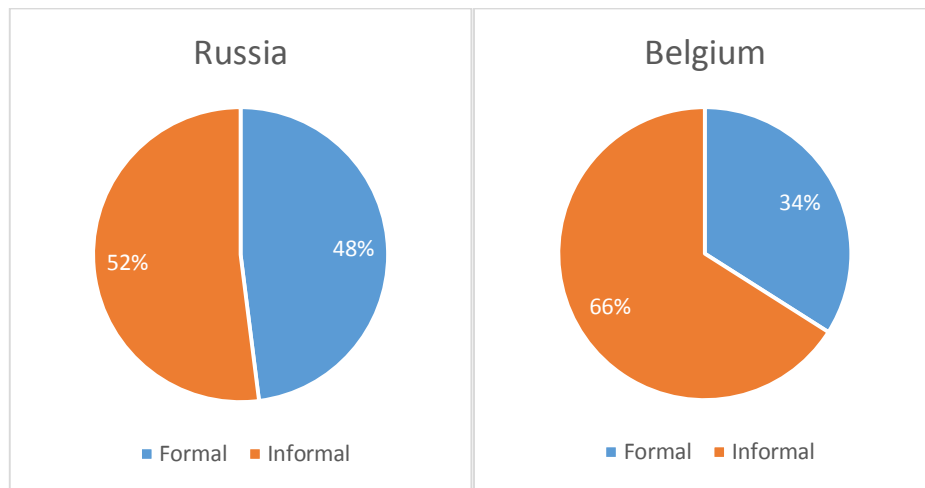


Fig. 10, 11. Communication style of city web sites.

In case of Russia, the amount of web sites of each type is almost the same. There is 52% of the informal-looking web sites and 48% of the formal. Whereas among Belgian web sites 66% are informal, and only 34% are formal. This difference between Russian and Belgian perspective is a reflection of the gap between the power distance levels. Russian culture is the one where subordination is more preferred in official relationships. In Belgian culture with the lower power distance level the subordination is less emphasized. Therefore, the level of formality is different due to the cultural factor.

Individual or Collective Orientation

Some of Belgian city web sites display an option in navigational menu, which is literally titled “I am...” The button like this is not expected on a Russian city web site. This can be explained by Hofstede’s claim that Belgian culture is more individualistic than Russian. Web sites have functions intended to satisfy the personal interests of visitors.

Furthermore, some Russian web sites present a greeting message from the head of city government starting with “Dear friends...” The speech like this is not likely to be met on a Belgian city web site. This is a consequence of the fact that Russian culture is more collectivistic than Belgian. Russian web sites are made to fasten the feeling of community, unity of people living in one city as a group. Moreover, appealing to official slogans is typical for a collectivistic society. So far, Russian web sites address people as a part of a group, while Belgian ones turn to individuals.

Besides, Russian city governments more often present themselves in the title of web sites literally as ‘Administration of [City]’. This attitude is less popular in Belgium. This shows that even the institutions can identify themselves either as a group or a unit depending on the level of collectivism in the culture.

3.1.3. Languages

The issue of multi-lingual web sites is tough for web designers. Phrases in different languages differ not only by grammatical structure and vocabulary, but also by the length. Designers have to create flexible layouts in order to make all the texts fit in the widgets in every of suggested translations (Web Design: How Translation Impacts Web site Development). Creation of a web site in a native language for the audience enhances its credibility. It is stated in the article of Mikal Belicove that “according to research firm IDC, web users are four times more likely to purchase from a company that communicates in their language. Additionally, visitors to web sites stay twice as long on sites that are in their native tongue, according to Forrester Research.” (Belicove) The number of available translations of a web site into local languages stands for an orientation to the needs of specific audiences. The statistics of language options of the city web sites is presented on the following diagrams (Fig. 12, 13).

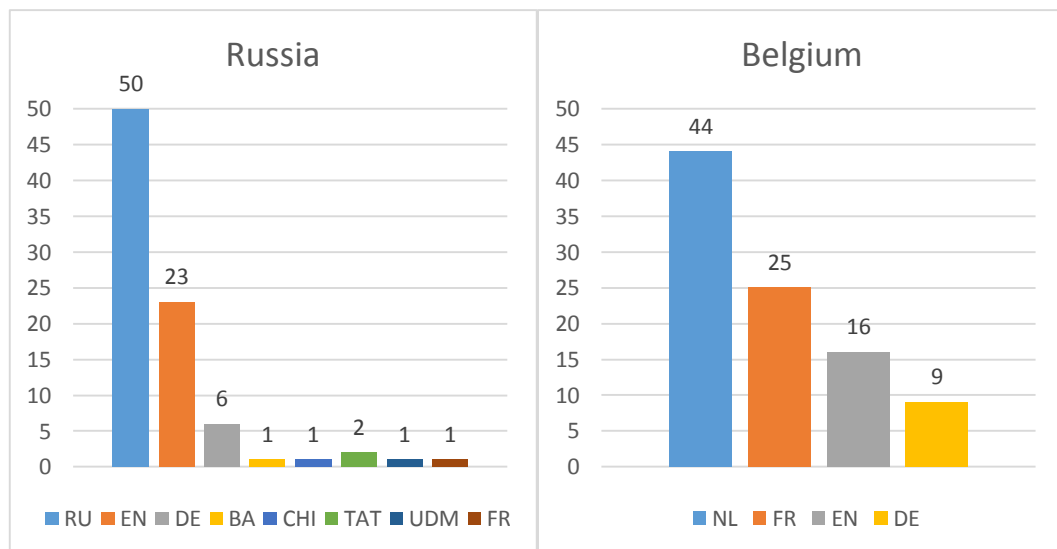


Fig. 12, 13. Number of web sites with language options.

All the studied Russian city web sites are executed in Russian language. It is a default preset choice for entering the scope of official web sites in the country. It shows a collectivistic nature of Russian culture. Every city government web site underlines the unity with the country even when there is a big community of people speaking on specific local languages. Subsequently, there are examples of web sites with switching language options into English (23), German (6), French (1) and Chinese (1), showing that more than half of them provides an opportunity for international relations. Some web sites had function of translation into local languages such as Bashkir (1), Tatar (2) and Udmurt (1). However, none of them has the specific local tongue as a main language of a web site. The individual features are not overcoming the collectivistic centripetal force of Russian culture.

Because Belgium has three linguistic groups of citizens, the web sites are executed in the three official languages: Dutch (44), French (25) and German (9). Some web sites offered translation into English (16). However, there is no single language binding together all the governments of the cities, as well as only less than a half of them has an English version placing the city on the international arena. The individualistic feature of Belgian culture can explain these numbers. Web sites of Belgian cities place more emphasis on independence and singularity, which is a reflection of the cultural factors.

3.1.4. Opportunity to Register Account

Another feature of web sites that can be a reflection of the level of cultural individualism is an opportunity to register and log in. When a person has his or her own personal digital lock on a web site, the more private relations with the site tend to appear. These options could be named as 'Log in', 'Register', 'E-locket', 'Digital locket' on Belgian web sites, and literally 'Enter' or 'Private office' on Russian ones. On the both sides it can be represented by an icon of a small lock. The results of the analysis are presented on the following diagram (Fig. 14).

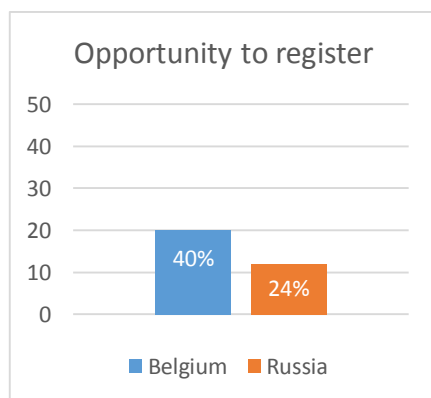


Fig. 14. Opportunity to register on city web sites.

The opportunity to have a personal account on a city web site was found on 40% of the Belgian web sites and on 24% of the Russian ones. The difference can be explained by the distinction of the individualism index of the two cultures. As a result, members of collectivistic cultures are less eager to differentiate themselves from the group (Marcus and Gould 37). As it is stated by Marcus and Gould, members of individualistic societies are less concerned with personal data protection than members of the collectivistic ones (Marcus and Gould 37). Being more individualistic, Belgian culture encourages creation of private space and personal relation with a user on a web site. On the contrary, Russian collectivistic culture supports more collective

interactions and public relations. The registration feature seems to be not very popular among the users there.

3.2. Structure

The structure of a web page is largely determined by a common sense approach. It has to provide an accessible way to the information on the web page. Structure of blocks on the web page resembles by its function to the printed block in newspapers. Information on different topics has to be separated from each other in commonly recognizable way.

The structure features that were studied for the present Thesis are tile versus paragraph presentation of content, fixed versus adaptive width and the presence of a version adapted for mobile phones.

3.2.1. Tile or Paragraph Structure

The two approaches are illustrated by the following examples of home pages of the web sites of Dilbeek with tiles (Fig.15) and Ieper with paragraph structure (Fig. 16). The tile (or block) structure is a very popular trend in web design all over the world. The statistics of usage tile and paragraph structure on Russian and Belgian city web sites is presented on the following diagram (Fig. 17).



Fig. 15. Screenshot of the web site of Dilbeek with tile structure. Source: www.dilbeek.be. Web. 15 May 2015.

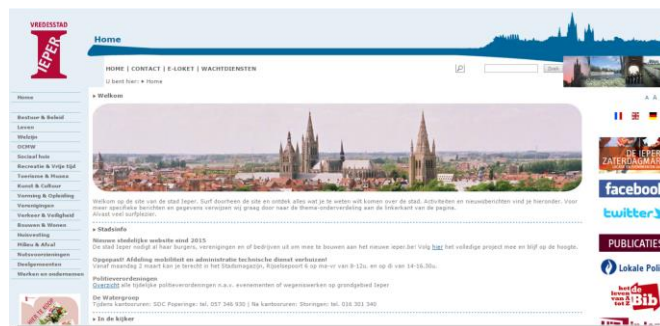


Fig. 16. Screenshot of the web site of Ieper with paragraph structure. Source: www.ieper.be. Web. 15 May 2015.

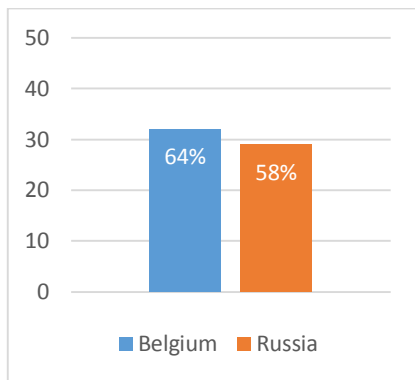


Fig. 17. Tile structure usage on city web sites.

There is no significant difference between amount of city web sites built using this method in Belgium (64%) and Russia (58%). Thus, Russian and Belgian web designers employ the contemporary movement to the same extent. This is showing the closeness the two cultures by the dimension of long-term orientation. Being from a pragmatic background both Belgians and Russians stick to the new and effective methods in their web design practice.

3.2.2. Fixed or Adaptive Width

Adaptive width of a web site is one of the main concerns of Russian web design school nowadays. Famous designer Artemiy Lebedev, director of his own design studio ArtLebedev, was among the pioneers of web design in Russia in 1990-s. He insisted on refusal of the fixed width layouts for web sites and promoted his point of view very effectively through the years. Nevertheless, some of the researchers suggest that the negative attitude of Russian designers towards fixed width layout has more historical rather than person-related reasons. Andrey Markelov claims that the split of design approaches of Russia and Europe happened in the times of development of capitalism, and it made the effect (Markelov). The author claims that competitive reality of the West pushed European designers towards massive production of printing production and advertisement (Markelov). Mechanisms of work with them demanded grids. Later they were transferred in the area of web design. At the same time, there was no commercial competition on the Russian territory. Therefore, there was no advertisement market established strong enough to influence the latter forms of communication. This all has led to the differences in the usage of fixed width layout in Russian and Belgian city web sites (Fig. 18).

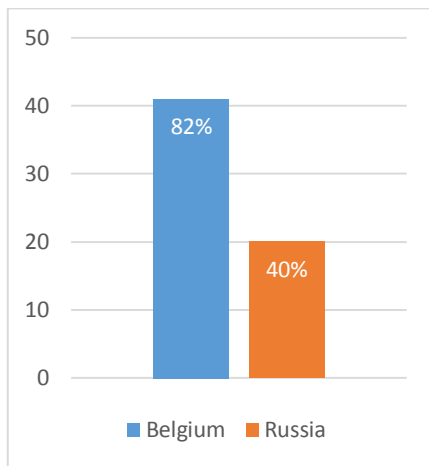


Fig. 18. Fixed width of city web sites.

There are 82% of Belgian city web sites that are executed in fixed-width layout, and only 40% of Russian ones are of the same type. It confirms the abovementioned hypothesis of the different approaches. Indeed, the fixed-width design is more spread in Belgium than in Russia. The relatively new tendency of responsive design for the West appears to be a well-known tradition for Russians (Markelov). The distinction can be also explained by the Belgian cultural universalism and the Russian particularism. On the one hand, Belgian web sites have the universal width. The same area occupied by content matches computer screen of every size. On the other hand, Russian web sites can be adapted for particular monitors and circumstances.

3.2.3. Adapted Version for Smartphones

The issue of adaptive design is important for web designers nowadays. Usually monitors of personal computers and laptops have size ranging from 800 x 600 to 1280 x 1024 pixels. They are much bigger than the screens of standard smartphones at 320 x 240 or 800 x 480 pixels. It means that browsing a web site suitable for computer screen is uncomfortable and difficult, when it is displayed on a smartphone. Thus, it can be often seen that modern web sites exist in several versions adapted for different screen sizes. The result of the analysis is presented on the following diagram (Fig. 19).

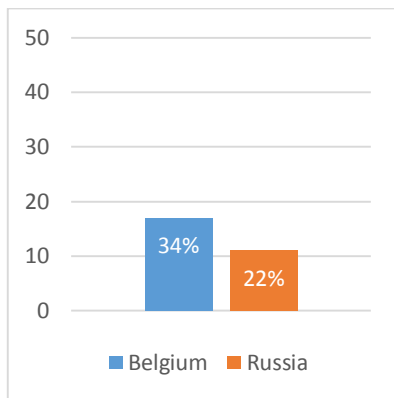


Fig. 19. Availability of a version adapted for smartphones.

The mobile-adapted version of a city web site is not very common option both for Belgium (34%) and for Russia (22%). However, the gap between the percentages of the two countries shows that Belgian designers slightly more often consider making adaptable structure for mobile phones. This could be an effect of a lower power distance level of Belgian culture. It leads towards more closeness of the government to the people, more intentions to be the city web site with the user, inside his pocket in the phone. The lower power distance of the Belgian culture leads towards more routineness of the relations of a user and the city web site. Russian governmental web sites are intended for steady and serious intercourse from home computer, but not for a fast interaction on the go.

3.3. Navigation

The navigation is analyzed through the general overview of the menus, presence of drop-down and illustrated menus on the home pages.

General overview of navigation tools was made by gathering information about amount of menus on each web site. Main menu is usually accompanied by the secondary ones. Some of the web sites employ more than two menus per page, and the maximum amount of menus on one page is four. The decision to create a navigation tool with more than four menus could not be considered as a successful one. This would create a page without clear hierarchy. The less menus are on the page, the easier it is for orientation. There were some web sites with only one main menu and absence of secondary ones. The scheme like this provides fewer opportunities for mouse click, this means – less opportunities to make a mistake while looking for a certain information on the web site. The results of the analysis of the city web sites are presented on the following diagrams (Fig. 20, 21).

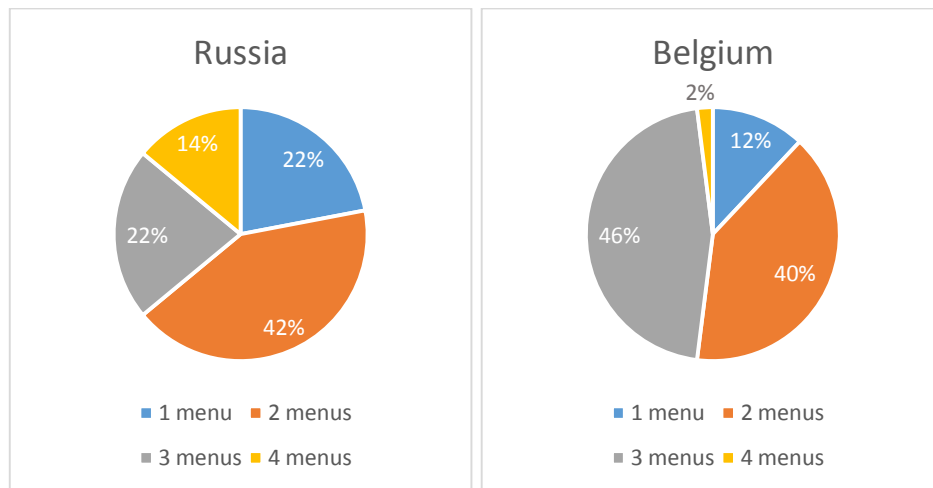


Fig. 20, 21. Number of menus on city web sites.

It can be often seen that the Belgian web sites employ three menus, placing two of them on the top. The two menus on the top of the page are a rare feature of the Russian web sites. Another common feature of Belgian web sites is pipelines (‘|’) between options presented in the menus, while there are usually no separations between them in the top menu on Russian web sites.

3.3.1. Drop-down Menus

Drop-down menu (or dropdown list) is a type of graphical control that allows the user to choose a value from a list. When the control is inactive, it displays one value or a label of menu. When drop-down menu is active, all the options in it are shown to the user. The results of the analysis of the city web sites are presented on the following diagram (Fig. 22).

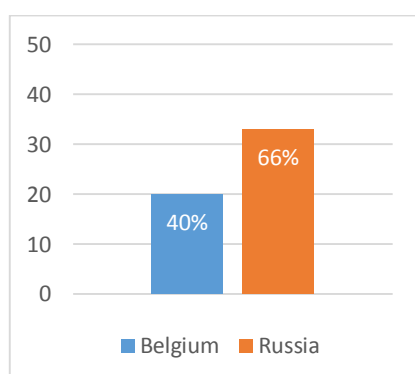


Fig. 22. The presence of drop-down menus on city web sites.

The presence of drop-down menus on Russian web sites (66%) is more common than on Belgian (40%) web sites. Russian web site users would have to guess where a needed option could be hidden more often, while Belgian users would more often see explicit presentation of all the possible actions on the home page. It can be explained by the different ways of communication

inherent to the cultures. Belonging to a high-context society, Russian culture is more appropriate for creation of web sites with not all the option shown from the very beginning. It is normal to leave some information implied and unsaid. On the contrary, Belgian culture is a low-context one, and it requires controls that are more obvious. The signifiers to possible actions have to be more explicitly coded in Belgium than in Russia.

3.3.2. Illustrated Menus

The illustrated menus are not used on the majority of the web sites of both countries. However, the examples of the icons accompanying menus are curious and diverse enough to investigate them (Fig. 23 – 28). The results of the analysis of illustrated menu usage are presented on the diagram below (Fig. 29).

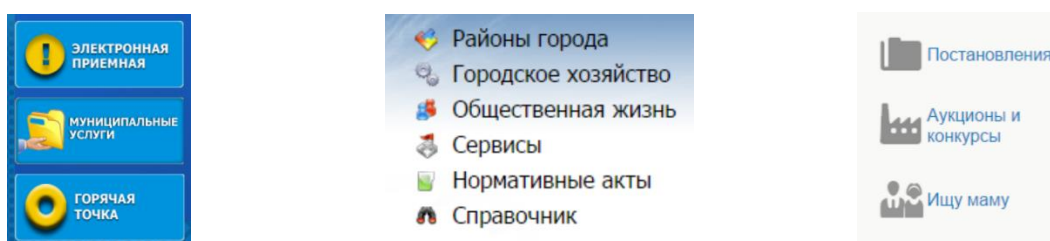


Fig. 23, 24, 25. Illustrated menus from the web sites of Orenburg, Rostov-Na-Donu and Chelyabinsk, Russia. Sources: orenburg.ru, rostov-gorod.info, cheladmin.ru. Web. 15 May 2015.



Fig. 26, 27, 28. Illustrated menus from the web sites of La Louviere, Verviers and Namur, Belgium. Sources: www.lalouviere.be, www.verviers.be, www.namur.be. Web. 15 May 2015.

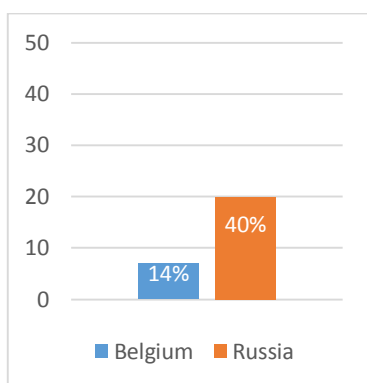


Fig. 29. The presence of illustrated menus on city web sites.

The illustrated menus are used on 40% of Russian city web sites and 14% of Belgian ones. The icons on Russian web sites are often not corresponding well with the functions of the buttons. For example, there is a button with the words “Ищу маму” on the web site of Chelyabinsk, Russia (Fig. 25). It is translated literally as “Looking for a mother.” The button refers to an orphanage working in collaboration with city government in order to find foster homes for children. The button is accompanied by the image of a man and a woman. This illustration has no immediate contact with a mother or an action of looking for something. Nevertheless, it raises the emotional response allowing user to feel that someone needs to find a decent family. Another example of the same use of illustrated menu can be seen on the web site of Omsk, Russia (Fig.30). The caption “Запись в детский сад” is translated as “Enroll to kindergarten.” It is accompanied by the image of a toy bear and a pen. It is not revealing the action of getting in queue for a place in municipal kindergarten, but it links emotions to the function.



Fig. 30. Icon from illustrated menu from the web site of Omsk. Source: омск.рф. Web. 15 May 2015.

This feature of placing emotions above the actual task is typical for feminine cultures like Russian. According to Hofstede, members of feminine cultures are more concerned with the context behind the action rather than with the practical data. So far, the feminine features of the culture can explain the more frequent use of the illustrated menus on Russian web sites.

3.4. Layout

Layout is an important aspect of web design. It presents to the users a contextual and structural model for easier understanding of the information (Cyr and Trevor-Smith 6). Moreover, it creates a bridge between the system and a user giving an opportunity to communicate above the languages.

The aspects of layout design observed in the present research are following: usage of multimedia slideshow, color statistics gathered by the means of the software application and the empirical study of background and accent secondary colors.

3.4.1. Multimedia Slideshows

Multimedia slideshow is a tool that allows displaying a gallery of images on a small area of a web site. It shows images in a predetermined sequence. It can also have functions like pause and rewind. Often the images are accompanied with captions and they can be linked to articles and detailed description of the illustrated news. The results of analysis of multimedia slideshow usage are presented on the following diagram (Fig. 31).

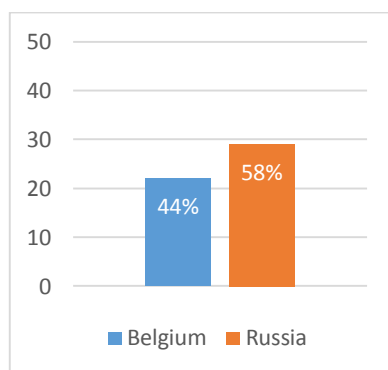


Fig. 31. The presence of a slideshow on city web sites.

There is a difference between the amount of web sites with a slideshow embedded to the home page in Belgium (44%) and Russia (58%). The gap can be explained by a higher level of femininity of Russian culture, which leads to the higher appreciation of the stories behind the facts, rather than the short presentation of the data. The femininity of Russian society leads to the more frequent involvement of illustrations for the news.

3.4.2. Color Statistics

It is necessary to include a parameter of color into the analysis of visual objects. Color plays a big role in web design. It has a great impact on the perception of a web page, however the nature of its effect is currently understood only generally (Veith 6). The effect of color on the

perception can differ from person to person. For instance, colorblind people sense colorful pages in a different way from a color sensitive person. Moreover, some people are colorblind only to certain hues. The impact can vary even when made on the same person in different psychological states (Veith 6).

Barber and Badre claim that there should be culture-related differences in color perception (Barber and Badre 8). It is stated in their work that connotations of several colors vary from country to country. For instance, white color means purity and suits for celebrations like weddings in Europe, while it is a color of mourning in China. Simon claims that Asian web sites are preferred to be built with “less bright colors”, whereas European web sites are preferred with “lighter/brighter colors with more images to make the sites appear more “modern” (Simon 31). However, a study of Butgel from Sabanci University disproved the expectation that people from different cultures have dissimilarity in color categorization, perception and discrimination (Butgel). The research was conducted with the help of 176 participants from different countries of Europe and Asia. The result of it has shown that “cultural differences do not have significant effects on color processing.” (Butgel 6) It was also stated in the article that there “was never found significant relationship” between them (Butgel 6).

Due to the controversy of the question, the method to investigate the color component for the present research was preferred to be objective and automatized. The tool for conducting the analysis was decided to be a software application, specifically produced by an outside contributor Ilya Shmarov. For the sake of receiving results as precise as possible, it was decided to use two algorithms to calculate the prevailing colors in layouts of the web sites. The algorithms are K-means clusterization and determination of the ratio of the pixel to a predetermined set of colors in HSV space. The essence of the two algorithms is explained further. In order to conduct an analysis of web sites by the application, I gathered together screenshots of the first screen of each web site and displayed them as one collective image for each country (Fig. 32 and Fig. 33).



Fig. 32. Collective file with screenshots of Belgian web sites



Fig. 33. Collective file with screenshots of Russian web sites

K-means Clusterization

Rephrased version of the title of the algorithm is ‘clusterization by the method of K-means’. The idea was derived from the study of Polish mathematician Wladyslaw Hugo Dionizy Steinhaus. Based on his idea, Stuart Lloyd suggested the standard form of the algorithm in 1957, but published it only in 1982. Meanwhile, James McQueen used the term k-means for the first time in 1967. The efficiency of the algorithm was enhanced through the years and largely applied in different areas of data analysis.

In the case of the application used for the present Thesis, the method of k-means conducts a clusterization of pixels grouping them by close color values. After the grouping, size percentage of occupied area is counted for every color group. In case of this algorithm, colors are presented in RGB (red-green-blue) model.

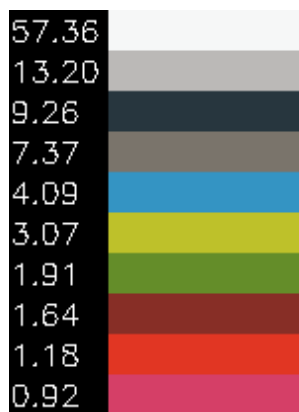


Fig. 34. Result of the analysis of Belgian web sites

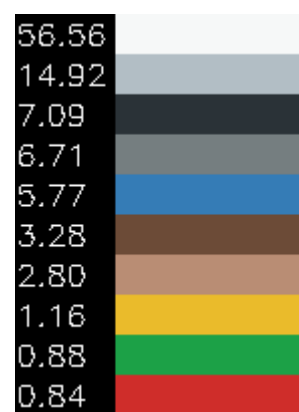


Fig. 35. Result of the analysis of Russian web sites

The result of the analysis performed by the application are the two tables showing the generalized statistics of the prevalent colors (Fig. 34, 35). The two tables created with the k-means algorithm show that the first five colors of the both tables approximately match by tone and the percentage of the occupied area. The similarity of color use within web design samples of Belgium and Russia proves the suggestion of Butgel about similarities of color perception in different cultures.

Determination of the Ratio of the Pixel to a Predetermined Set of Colors in HSV Space

The second method of the application uses the algorithm of analysis, which converts the image to HSV color model. Then every pixel gets a value by the three parameters (Hue, Saturation, and Value). The parameter Value is sometimes stated as Brightness. In general, HSV model is another representation of RGB color model. After grouping, size of each area is valued in percent.

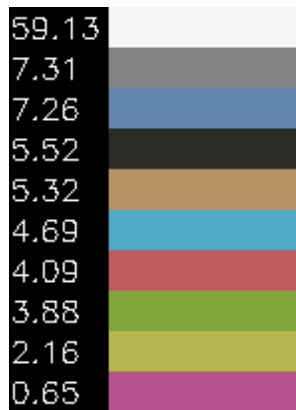


Fig. 36. Result of the analysis of Belgian web sites

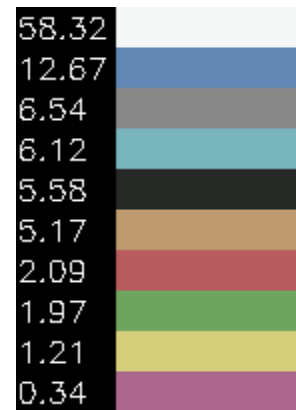


Fig. 37. Result of the analysis of Russian web sites

The resulting tables of analysis with HSV model show again the overlap of the most widespread colors in both Belgian (Fig. 36) and Russian (Fig. 37) web design. All the seven colors of the rainbow are presented in both tables with mostly the same percentage. The difference is the use of blue and cyan colors. In Russian web design for city governments blue (12,57%) and cyan (6,12%) are more widely spread than in Belgian (7,26% and 4,69%). This minor gap can be explained by the fact, that blue is one of the colors of Russian state tricolor flag together with white and red. Belgian state flag consists of black, yellow and red colors. Neither of them can be used massively on a web page. Big areas colored in too bright colors can negatively interfere with user's perception. On the contrary, blue and its shades are among the most suitable colors for big areas of a web page. However, the result of the analysis by the method using HSV model proved that there is no significant differences in color usage in Belgian and Russian web design. It confirms the point of view of Butgel, who rejects the idea of the boundaries between cultural background and color processing.

3.4.3. Background Color

Apart from the results of the automatic analysis, I decided to confirm the similarity of color use in Belgian and Russian web design by an empirical examination of the web sites (Fig. 38, 39).

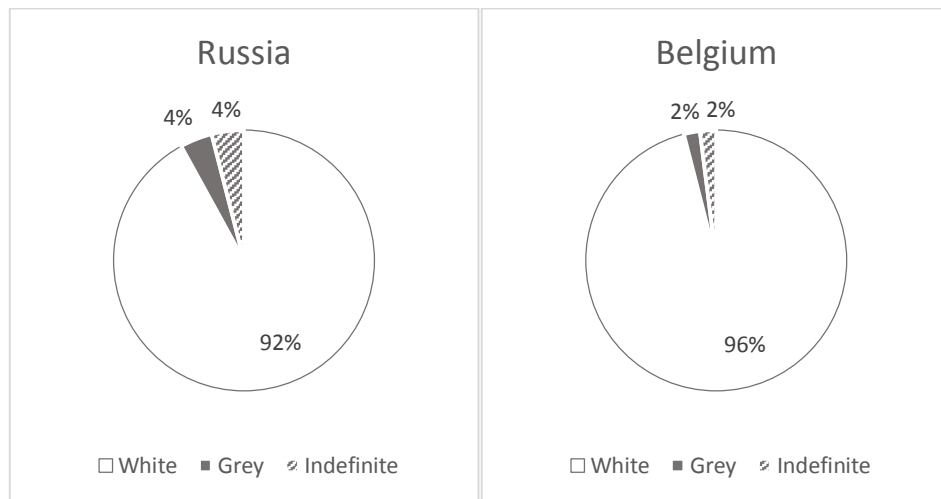


Fig. 38, 39. Background colors on city web sites.

The first parameter of comparison is the color of background placed behind the main text content. The results of Russian (white – 92%, grey – 4%, different colors – 4%) and Belgian (white – 96%, grey – 2%, different colors – 2%) web design is very similar. It proves that both Russian and Belgian web designers follow the same rules in order to provide a user with an easily accessible information.

3.4.4. Secondary Color

The presence of a secondary color on a web page cannot be counted by numbers. The color is used to place the accents on the page. Menus, titles and buttons are often colored in standing out contrasting tone. The accent on a web page can be of a smaller area than plain grey background, but it could mark an important element. The value of the parameter of secondary color was found by empirical examination.

A web designer makes the choice of an accent color consciously, depending on the effect he or she wants the web site to perform. From the times of Aristotle, people reflect on color harmony and its influence. It was Goethe, who first started to research the effect of a color on human mind. He examined it by looking at the world through colored pieces of a glass. Goethe recorded how his perception changed depending on the color, and published his observations in 1810. His method could be questioned, although his statements have never been disproved.

The diagrams below show the results of analysis of secondary colors used on the city web sites (Fig. 40, 41).

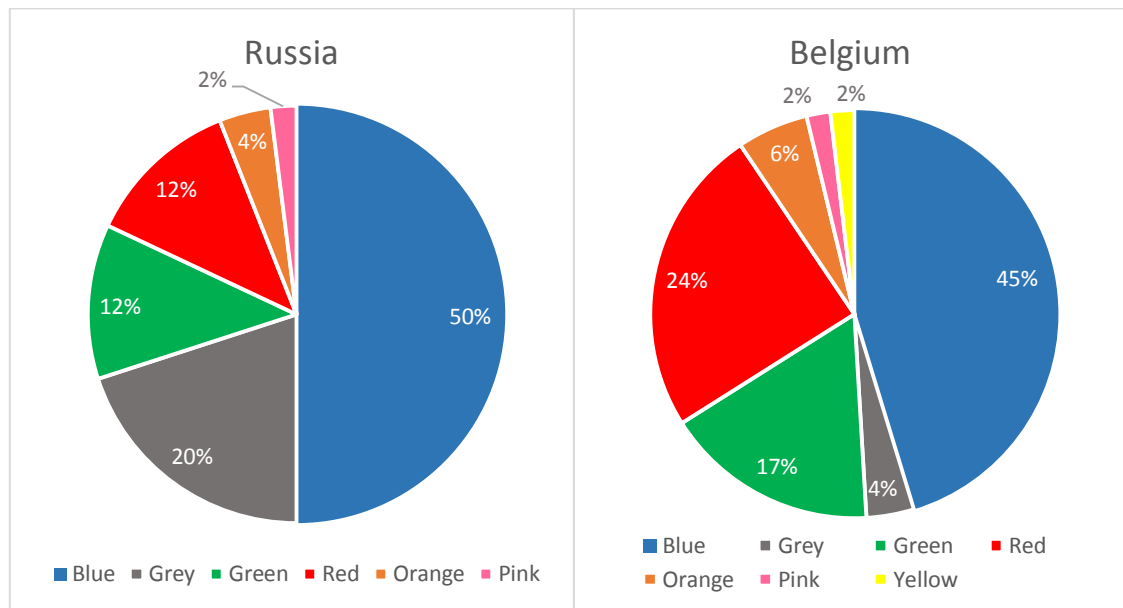


Fig. 40, 41. Secondary colors on city web sites.

The most widely used secondary color in both Belgian (45%) and Russian (50%) cultures is blue. It is the most neutral color of the spectrum. It calms down and does not disturb the attention focused on the content. Another neutral color, grey, is monochromatic. It is present on both Belgian (4%) and Russian (20%) web sites, but to different extent. It shows that Russian city web sites tend to be less urging. Green color is the last neutral one, though it is more stimulating than blue. It is used in Belgian (17%) and Russian (12%) web design in similar proportions. It is followed by red color, which is the most energizing of all the colors of the spectrum. It is used to different extent on Belgian (25%) and Russian (12%) city web sites, showing the different attitude towards the effect of the sites. Orange, pink and yellow are presented in a small amount of web sites ranging from one to three examples out of the fifty web sites for each culture. The amount of their usage also differs in Belgian (orange 6%, pink 2%, yellow 2%) and Russian (orange 4%, pink 2%, yellow 0%) web design. In general, the majority of city web sites use neutral and calm colors as the accent (Russia – 82%, Belgium – 66%). However, the comparison of the statistics of two countries shows that Belgian (34%) web sites tend to use energizing and active colors more often than the Russian (18%). It refers to the difference of the cultures by the dimension of indulgence. Russian culture is characterized as restrained one. This means that institutions tend to present themselves less impulsive than the Belgian ones. Belgian culture is marked as indulgent, and it leads to the open expression of desires and impulses. This gap effects the way institutions present themselves to the public.

However, generally the two cultures use almost the same colors for city web sites. It happens to remind user of his mental model of a normal city web site. It is difficult to imagine a city web site built with the use of acid colors, sparkles and funny backgrounds for both Belgians

and Russians. It can be explained by a high level of uncertainty avoidance of the both cultures. Members of the two cultures would hardly trust a city web site, if the correlation of function and mental model to the layout was too ambiguous.

3.5. Content

Content was studied through analysis of elements on a web page, types of displayed photographs, type of image used as emblem of a web site and the presence of agenda and news on the home pages.

3.5.1. Elements

The analysis of the elements used on the city web sites is divided in several parts:

- The section about hyperlinks to social networks is connected with links and buttons leading to Facebook, Twitter and V Kontakte (a social network founded in Russia).
- The part about pictographic symbols is focused on icons of a printer, a letter, magnifying glass and play and pause signs.
- The infographic elements found on the web pages are weather icons, calendar or demographic information presented in illustrated way.
- Another criterion for the comparison is usage of an image for the background.
- The last criterion is the presence of illustrations on the web sites.

The results are presented on the diagram below (Fig. 42).

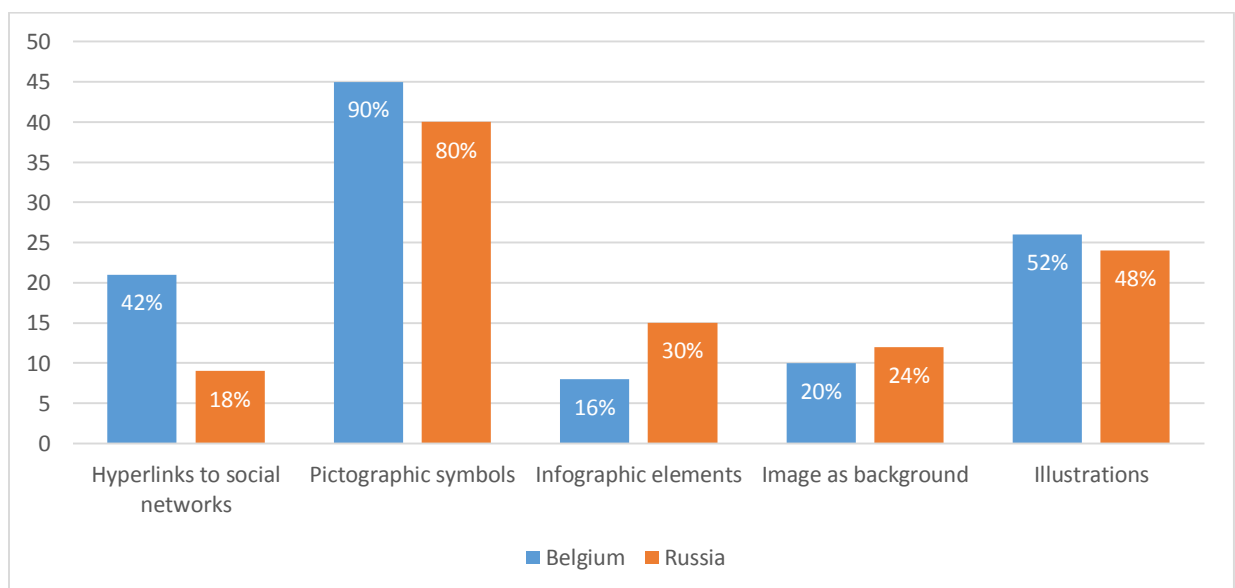


Fig. 42. The presence of elements on city web sites.

Some of the criteria show similar results, namely the use of image as background (20% - Belgium, 24% - Russia) and the presence of illustrations on the web pages (52% - Belgium, 48% - Russia). The major difference in the present group of criteria is shown by the usage of hyperlinks to social network accounts on the web pages. Belgian sites have this feature in 42% of cases, while only 18% of Russian web sites have it. This difference is referring to the level of power distance in the two countries. The Belgian city governments use social networks to go closer to the people and to be presented in the informal context. On the contrary, Russian city governments prefer to keep subordination and not to interlink the official web site of institution with ubiquitous attractions.

Another gap is showing that 30% of Russian and 16% of Belgian city web sites present infographic elements like illustrations of information about weather, date, time and demographic situation in the city. It refers to the femininity of Russian culture, which favors illustrations of the facts. The usage of pictographic symbols to convey information without verbal captions is slightly different in the two countries (90% - Belgium, 80% - Russia). This distinction can be also explained by the level of masculinity. Belgian designers try to use the space of a web page with maximum effectiveness.

3.5.2. Photos on the Web Sites

Web sites can be analyzed by the type of photographs displayed on them. There are several criteria for comparison at this point.

- Photographs of people and groups on city web sites.
- Photo of the head of administration.
- Smiling faces.
- Leisure, art and spots.
- Landscapes.

Photographs of People and Groups on City Web Sites

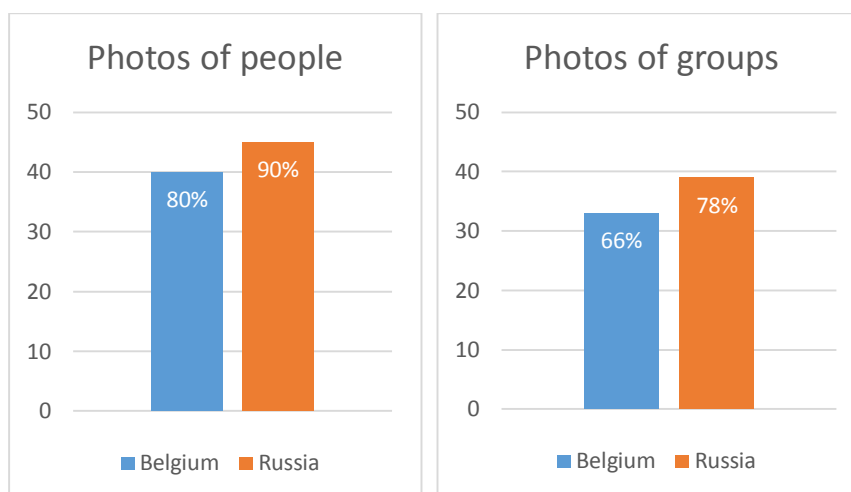


Fig. 43, 44. The presence of photographs of people on city web sites.

The results are similar concerning the amount of web sites with photographs with people on Belgian (80%) and Russian (90%) web sites. Among those web sites, there were some with depictions of groups of people or only single individuals. The results are close by this parameter in Belgium (66%) and Russia (78%). The slight overweight is on the side of the most collectivistic culture of the two. Being more group-oriented, Russian culture predisposes its members to put images of collectives more often than it is done in Belgium.

Photo of the Head of Administration

One of the most curious examples of images used on the web sites is a photo of the head of a city government (Fig. 45). The photo of a mayor in a formal suit is placed on 52% of the Russian web sites. A picture of a mayor can be present as a part of news, or a welcoming paragraph on a web site. It is an anchor for a user to identify the government with an official representative. Surprisingly, there is no single Belgian city web site displaying the same kind of photo. The huge difference can be caused by the distinction of the power distance level of Belgian and Russian cultures. The authorities are more celebrated in Russia than in Belgium. A Russian city web site is never a conversation of peers, but an official window into the strongly hierarchical and subordinate institution.



Обращение к ижевчанам Главы города Ижевска Александра Ушакова в связи с общегородскими субботниками. С 1 апреля по 11 июня в Ижевске проводятся работы по санитарной очистке и противопожарным мероприятиям.

Fig. 45. Photo of the mayor of Izhevsk, Russia. Source: www.izh.ru.

Web. 15 May 2015.

Smiling Faces

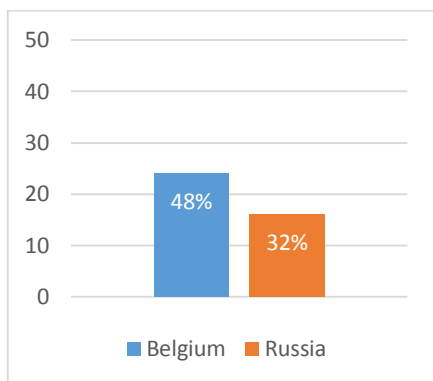


Fig. 46. The presence of photos of smiling faces.

There is an inequality of the number of web sites with the photographs of smiling faces on Belgian (48%) and Russian (32%) web sites. This tendency can be affected by the tradition to keep emotions under control in the restrained Russian culture. Moreover, the pattern according to Hofstede is that in collectivistic societies showing happiness is discouraged, while in individualistic society it is encouraged. This observation can explain why there is a difference in the amount of smiling faces on web sites of individualistic Belgium and collectivistic Russia. This does not necessarily mean that Russian city web sites present less pleasant news. It only shows that Russians and Belgians use different methods to illustrate the events.

Leisure, Art and Sports

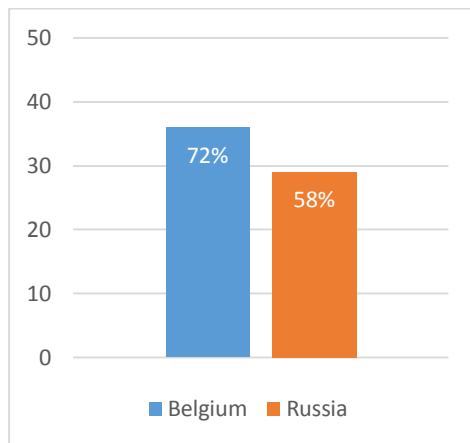


Fig. 47. The presence of photos related to leisure, art, sports.

The excess of the number of Belgian (72%) web sites with photographs depicting leisure, art and sports above the Russian ones (58%) is another effect of the different indulgence level. Hofstede states that spending time and money on leisure and travelling is more encouraged in indulgent cultures than in restrained ones. Belgian culture predisposes its members to be more impulsive and pursue the fulfillment of their desires with more eagerness than the Russian. Moreover, images of personal success and demonstration of materialism and consumerism are used more often in indulgent societies. Collectivistic cultures favor demonstration of social-political achievements. Belgian culture is more masculine, which means it is more competition- and consumerism-oriented. So far, the choice of images to display on the web sites is affected by the features of the culture.

Landscapes

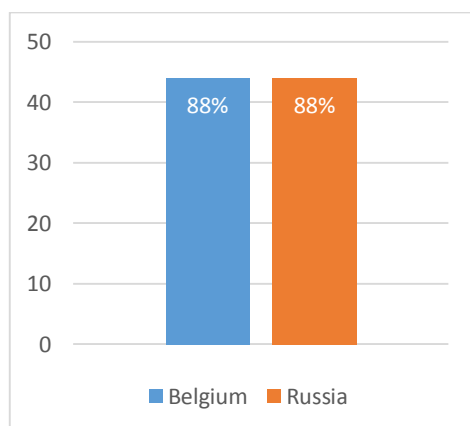


Fig. 48. The presence of photos of landscapes.

The amount of city web sites with the photos of landscapes is the same for both countries (88%). The photos usually depict either the most well known buildings of a city, or the places, where the most recent important events took place. It is a very practical decision to place this type of photos in the headers, news feeds and slideshows. Being pragmatic both long-term oriented Belgian and Russian cultures tend to perform this type of tasks in the same way.

3.5.3. Usage of Image as an Emblem

The parameter connected with the usage of image as an emblem of a city has two possible variables. It can be presented either as logotype (Fig. 51) or as coat of arms (Fig. 49, 50). Historically, most of the cities had coat of arms as part of identity. However, many of them are using newly designed logos nowadays. There are also several examples of redesigned modern-looking coats of arms (Fig. 49), although most of them remain traditional (Fig. 50).



Fig. 49. Coat of arms of Penza, Russia. Source: www.penza-gorod.ru. Web. 26 Apr. 2015.



Fig. 50. Coat of arms of Stavropol, Russia. Source: ставрополь.рф. Web. 26 Apr. 2015.



Fig. 51. Logotype of Brussels. Source: www.lesmarolles.be. Web. 26 Apr. 2015.

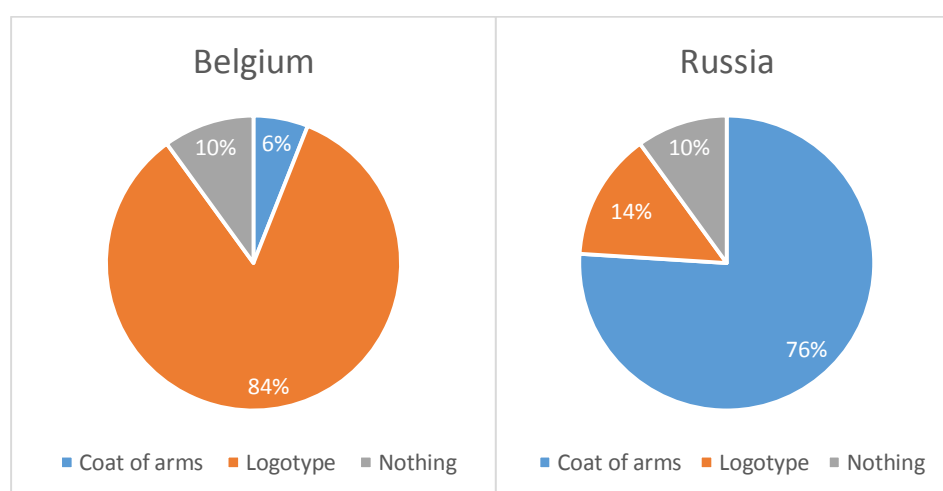


Fig. 52, 53. Usage of image as an emblem on city web sites.

As much as 76% of Russian city web sites use coat of arms as their emblem, 14% use logotype, and 10% use no identity image at all. The prevailing number of sites with coat of arms

shows the high level of power distance of Russian culture. The hierarchy of power is very strong in Russia, which means that the status of a government should be supported by seriousness and constancy of its identity signs. The status symbols must underline that the government has more power than an organization, for which a logotype is appropriate. Coat of arms is an official stamp, a symbol of power, which is placing emphasis on the social and moral order, authority and patriotism (Marcus and Gould 36).

The Belgian result is dramatically different from Russian. With 84% of logotypes used, 6% of coat of arms and 10% of no identity symbols at all, it shows a reflection of a low level of power distance. The web sites of Belgian cities do not necessarily have to expose the status and position of a government over the other organizations. However, the high level of individualism in Belgian culture calls every city government to stand out and show specific features through the logo, which is the most popular option for Belgian web sites.

3.5.4. Agenda or News

Usually city web sites present news feeds, which are descriptions of past events. Some of them can also display agenda as an announcement of upcoming events. The statistics of news and agenda usage on Belgian and Russian city web sites is presented on the diagram below (Fig. 54)

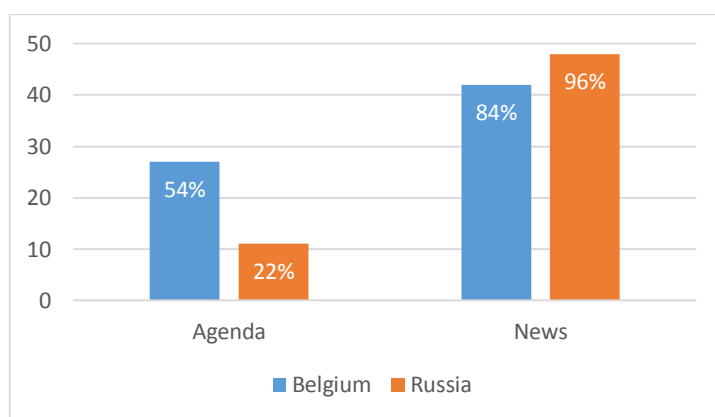


Fig. 54. The presence of news and agenda.

The results of the examination of the home pages of web sites with news and agenda has shown that the Belgian ones are more oriented on agenda presentation, while the Russian ones more often present news. Some of the web sites have both agenda and news (Belgium 40%, Russia 20%) and some of them have neither of it (2% in both countries). More frequent use of agenda on Belgian home pages (54%) than on the Russian (22%) refers to the low level of power distance allowing an official institution to be less subordinate and more involved in citizens' private life. Belgian city web sites more often suggest people ideas for leisure.

The Russian web sites include news feeds in 96% of cases, while 84% of the Belgian ones do it. It shows that with high level of power distance Russian web sites have a function more of a formal report rather than leisure organizer. According to Hofstede, authorities in large power distance countries tend to be more traditional, while in small power distance societies they are more based on practical considerations and rationality (Hofstede, Hofstede and Minkov 77). However, the amount of city web sites with the news pools in both countries is relatively high, which is a reflection of the high level of uncertainty avoidance of the two cultures. The institutions try to avoid ambiguities and unknown situations, presenting enough information to the users to keep them aware of the state of affairs. The more often use of agenda on Belgian web sites can be explained also by internal locus control, which leads to the eagerness to get involved in events. Russian external locus control explains the perceiving news more willingly, because people feel that events happening around them influence their life a lot.

3.6. Conclusion

In this section, I have presented the results of analysis of 100 city web sites. Differences and similarities of Belgian and Russian web design by the every criteria are explained from the positions of the theories of Hofstede, Trompenaars and Hampden-Turner, and Hall. There are five main groups of criteria for the analysis:

First, General criteria include examining of prevailing web site function, communication style, languages of available web site translation and the opportunity to register an account. It allows getting an overview of the general features of web sites of the two cultures. Main differences between Belgian and Russian web design found in this section are:

- There are more formal city web sites in Russia than in Belgium. This difference is a reflection of inequality of power distance level.
- In Belgium there is no single language shared by all the city web sites. In case of Russia, every web site is presented in Russian language by default. It can be explained by collectivistic nature of Russian culture.
- The opportunity to have a personal account on a city web site is more often presented on Belgian web sites. The difference can be explained by the higher level of individualism of the culture.

Second, the section about Structure consists of the statistics of web sites built in tile or paragraph composition, with fixed or adaptive width and the number of web sites with adapted versions for mobile phones. This allows getting some insights on the practical approach in web design of Belgium and Russia. Main difference between Belgian and Russian web design found in this section is:

- The majority of Belgian city web sites are build with fixed-width of the content part. It can be explained by a historical developments of web design and the universalism of Belgian culture. At the same time, the majority of Russian web sites uses adaptive width.

Third, the navigation features of web design of the two countries are based on the statistics of the drop-down and illustrated menu presence. The differences in this part are:

- The presence of drop-down menus on Russian web sites is more common than on Belgian web sites. It can be explained by high-context nature of Russian culture.
- The illustrated menus are used on the majority of Russian city web sites and on the minority of the Belgian ones. It can be explained by relatively higher femininity of Russian culture when compared to Belgian.

Fourth, the statistics of usage of multimedia slideshow and color on the home page of a web site is presented in the Layout section. It gives understanding of the main layout trends in web design of the both countries. Belgian and Russian attitudes to layout are similar, because the both cultures are practice-oriented. Web designers from the two countries use the tendencies of usability and design for the best presentation of information.

Fifth, the section Content includes statistics of the usage of different elements on the web sites, types of used photographs, images presented as an emblem of a web site, presence of agenda or news on the home page of web sites. Main differences between Belgian and Russian web design found in this section are:

- Hyperlinks to the social network accounts are more common on Belgian web sites than on Russian. This difference can be referring to the lower level of power distance in Belgium. Belgian city governments try to get closer to the people by using informal social media, while Russian city governments prefer to keep subordination.
- The big difference was found in the usage of a photo of a mayor on a home page. It is placed on the majority of the home pages of Russian web sites, while none of Belgian ones has it. The difference can be explained by the higher level of power distance of Russian culture.
- Belgian web sites display photographs depicting smiling faces, leisure, art and sport scenes more often than the Russian ones. It can be explained by the higher level of indulgence level of Belgian culture.
- Russian web sites usually use coat of arms as an emblem, while Belgian ones usually use a logotype. The difference can be explained by the higher level of power distance of Russian culture.

4. Qualitative Approval

In order to support objectiveness of the present research, I have tested the results of quantitative analysis with qualitative approach. To do this, I have designed two templates representing Belgian and Russian typical city web sites to base the interviews upon them. Next, I conducted interviews with eight people (4 Belgians and 4 Russians) from different backgrounds, age groups and occupations. The age of the interviewees was ranged between 21 and 51 years. The interviewed people were from Roeselare, Leuven, Antwerpen, and Brugge in Belgium and from Saint Petersburg and Petrozadovsk in Russia. Their occupation ranged from the unemployed and students to accountants, event manager, software developer and city guide.

The interviews were conducted in an informal relaxed way for the respondents. The people spoke a lot and willingly shared their considerations and feelings. One conversation was performed through the Skype and the rest ones in face-to-face meeting. For the face-to-face meeting with people from Saint Petersburg I went to Lille, France in order to make an appointment with the group travelling there at the time.

Questions and the list of candidates were prepared beforehand. The talks were based on the discussion about the two templates especially designed for this purpose. The templates design is described further. I asked a lot of open-ended questions, so the interviewees were required to provide some specific details and examples, personal stories and suggested explanations in response. I have learned a lot from the first two interviews, and it allowed me to improve the questionnaire for the latter ones. However, the overall amount of information for my research was satisfying from the very first interview.

I was expecting the result that confirms my suggestion that web design is influenced by cultural factors.

4.1. Creation of Templates

In order to convey interviews on the level separated from exceptions from the rules, I decided to design two templates reflecting the main features of the city web sites of the two cultures. The design process was based upon the previous research. It allowed paying attention to the details and to the general perception of the templates. The investigated case study web sites allowed gathering data about structure, navigation menus, layout and content. The information discussed in the previous chapter was incorporated into the templates.

All the images used on the templates are taken from public domain libraries, with the exception of the photograph of the governor of Arkhangel'sk region Igor Orlov that has been taken from the web site of Arkhangel'sk. Some small additional sections of the real web sites were also

used for building of the templates. The captions for the menus have been taken from the real web site menus. The templates that have been produced are presented on Fig. 55 and Fig. 56.

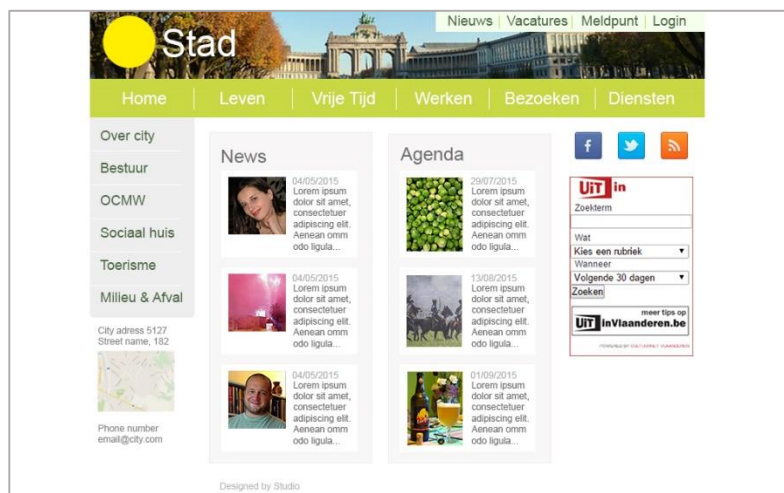


Fig. 55. Template of a typical Belgian city web site

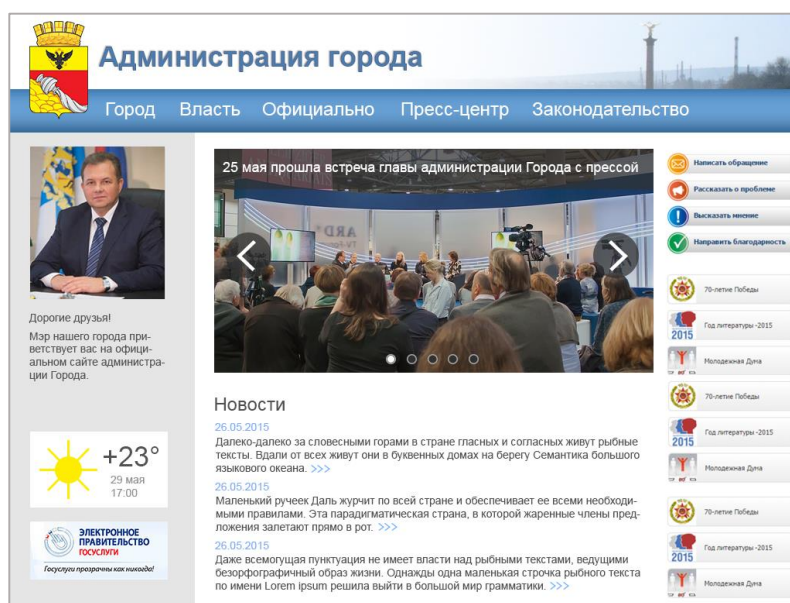


Fig. 56. Template of a typical Russian city web site

The templates differ by the appearance and they evoke different feelings that has to be assessed with the help of interviewees. People agreed on adequacy of the presentation of the both types of web sites in the templates. Russian citizen M.S. said in her interview: *“Indeed, the core of the web site of Saint-Petersburg is the same as in the [Russian] template.”* *“This is what I am used to,”* said T.K from Russia. The responses show that the templates justly reflect the nature of Russian and Belgian city web sites. The results of the questioning people about their perception of the city web sites are discussed in the following part.

4.2. Findings and Insights from the Interviews

In general, the responses of the interviewees confirmed my hypothesis about the culturally influenced preferences in web design. It is not surprising that the majority preferred the type of city web site assigned to the country of their origin. A user perceives web site as he or she usually does and looks at the usual points. The unfamiliar way of presenting information about known type of organization is uncomfortable.

In order to find out the general preferences of a person the first question I asked was “If you were a head of city administration which of two web sites you would prefer to use to represent your city?” Even though the majority of interviewed people answered in the expected way, favoring the templates assigned to their culture, there were exceptions on both sides (A.L. from Belgium, V.P. from Russia), who preferred a foreign type of template. This fact shows us that the foreign language does not determine the web site preferences of people, and that an overall layout has greater importance in this case rather than the language of interface.

The reasons caused the choice of the native type of web site were described in different ways. T.K. explained it by the habit she has. However, the core point to prefer one or another template was the overall feeling that the web site evokes, and the way it is corresponding to the user’s expectations. The aspects discussed by the interviewees are described in this chapter in the following order: general criteria, structure and content.

Firstly, discussion of the general criteria added some insights about personal versus collective attitude of the users to the city web sites and formality versus informality of the web site presentation.

During the interview, Belgian citizen A.V. said that city web site stands for “*the place where we live, the place we come home, and the place we grew up in.*” She transfers her personal memories and nostalgia to her expectations on the web. On the contrary, Russian citizen I.S. thinks that web site should represent “*what an administration should be.*” He thinks that the web site represents the city and a group of people working as its government. So far, his expectation of what a city web site refers to is different from that of the Belgian person.

Moreover, the big difference lays in the formality and informality of the overall tone of Belgian and Russian web sites. A Belgian citizen A.V. has said in her interview: “*[Web site] should be formal of course; it’s still an official web site. This one [Russian] could be good for a corporation... But I think a more welcoming and a bit more familiar way is better for a city, especially to attract tourists.*” The Belgian student wants a city web site to be nice and friendly. Russians, on the other hand, appreciate the formality of a city web site and perceive it as a marker of credibility. The choice of words to describe both templates shows the attitude of a Russian

citizen I.S. He said, *“It depends on goals of a web site, but as an official representation, Russian template fits better. Blue color is more austere. It is present in our state flag. While the Belgian template is more bright and pretty.”* So far, Russians indeed prefer the formal way of representing city through its web site, while Belgians prefer the informal one.

Secondly, the interviews has shown that the users have different expectations of web site structure. In most of the cases, the structure remains unnoticed for a user, however during the interviews I have asked some leading questions. Russian citizens has shown their preference of the paragraph structure. Both I.S. and T.K. said that tile structure is uncomfortable for them on a city web site. Nevertheless, no one of Belgian citizens has expressed the same negative attitude towards tile structure. Additionally, Belgians more willingly admit the necessity to adapt web site structure for smartphones (L.V.), while Russians do not see a good reason or a scenario for this option (I.S.).

Thirdly, the section discussed in more details is connected with content. The interviewees talked about hyperlinks to the social networks, photo of the mayor on a home page and usage of coat of arms as an emblem.

Concerning social network hyperlinks, Belgians responded more positively than Russians did. Belgian citizen A.V. has said during the interview *“I think nowadays it seems to be important for everything”*, even though she does not see the requirement of such an option on a web site. She says, *“I don’t think it’s necessary. I think that people do it because it’s popular.”* Although, the social network links are not obligatory for the city web sites, their presence is taken positively. On the contrary, Russian citizen I.S. said that he does not think that anybody will need them, *“I do not see what they would do here.”* In his opinion, social accounts are more appropriate for official persons than to the cities. I.S. brings an example of a well-known Russian politician Dmitry Anatolyevich Medvedev, who started to popularize this phenomenon during his presidency. Indeed, Russian politicians started to register their official accounts in social networks, but it still has an aura of novelty and some strangeness for institutions. I.S. continues argumentation assuming that the older generation of Belgians is more advanced in the questions of technology than the Russian. He provides an example of his father visiting a city web site. It requires him to make a big effort to open a web site, to decide where to click in order to move to another page of web site. So far, moving to another dimension, to the scope of social media, would be a stressful situation for him. This situation is going to be changed, when the internet will play a bigger role in life of an older generation, however this process requires years of adaptation and learning. Although, some steps towards this have already been made.

Another heavily discussed aspect of web site content is the presence or the absence of photograph of a mayor of the city on the home page. The Belgian citizen J.D. has chosen the

Belgian template as less formal option explaining his refusal of the Russian one in the following way: *“If you look at this one [Russian], you would see the weapon shield and then you have a person underneath it, who is looking straight at you. He is saying, “I’m watching you. I’m the mayor.” He looks a bit authoritarian.... and here [Belgian template] is a bit more distant and it is not that personal, and it is good. You don’t want a leader that is above you, who controls you.”* Interestingly, this opinion about the photo of the head of the city government on the home page was shared with the other Belgian interviewees. They stated their opinion in different ways: *“It can be present, but not on a front page”* – L.V., *“I would use that room for something else, because you know who the mayor of the city is. Especially in big cities it is the famous or local known figure. But it would be nice to have pictures of everyone somewhere else”* – A.L. Moreover, one of the interviewees A.V. has attempted to explain the Belgian attitude: *“I think that’s because generally in Belgium we don’t really care about politicians. We do not think they are powerful. Obviously, they have power, but it is not as if they are looked upon. It is a bit like the role of them in our country is not a big deal. We have them because we have to. People complain more about politicians than agree with them.”* A.V. refers also to the situation of the recent past in order to explain her previous words: *“I don’t even know who the mayor of my city is, because I don’t care. Everything runs smoothly, I just take it for granted. Even if it does not run smoothly, like it was in Belgium some time, when we did not have government, we did not care. Because everything still was good.”* It shows the Belgian approach not relying too much upon an official ruler, the governor or mayor. Belgians do not feel the superiority of the power in everyday life. The described relation of the administration and the city is typical for the country with the low level of power distance. On the contrary, the Russian citizen I.S. preferred the Russian template and the first point of his reasoning was: *“Well, there is a man, the mayor.”* The explanation of the positive attitude towards the photo of the representative of the power by T.V. was the following: *“Russians are more related to this. The head of the city is a big wig. Russians have it in habit to rely upon a father-tsar, a party chairman or a president.”* Such a big respect for the power is a typical feature of the cultures with a high level of power distance. The contradiction between Belgian and Russian views shows that the members of different cultures prefer to see different elements on the home page of a city web site. It marks the attitude towards the concrete detail of a web site as a culturally dependent issue.

Further, Russians and Belgians perceived the usage of coat of arms as an emblem of a web site in different ways. For Russians it was a normal fact. It is the way to present a city in a usual way. On the contrary, Belgian citizen J.D. implied that it is too aggressive. For him it was one of the reasons not to choose the Russian type of web site as the appropriate one.

So far, it has been shown that culture makes an impact on user expectations and perception of the web sites. People from Belgium prefer less formal and authoritarian representation, while Russians give more credit to the explicitly official attitude of a city web site.

4.3. Conclusion

In the last chapter, I have described how I prepared and conducted interviews with members of both Belgian and Russian cultures. I have designed two templates, representing typical Belgian and Russian web sites. This process is described in the section Creation of Templates. The candidates for the interviews have been chosen from different age, social and professional groups, taking four participants from each culture.

Further, in the section Findings and Insights from the interviews I have discussed the correlations of the words of interviewees with the results of the previous chapters. In summary, interviews have proved the results that were found in the area of the cultural expectations in web design. In particular, members of different cultures have different attitude towards appeal and formality of city web sites, its structure and content. Findings of the last chapter correspond to the facts discussed in the previous chapters and prove the previous claims.

5. General Conclusion

The objective of the present Thesis was to find the interconnection of cultural differences and web design in Belgium and Russia.

The question was answered by the theoretical approach to the culture comparison and the empirical and statistical analysis of case study city web sites. The results of analysis were assessed by the interviews with the members of both cultures.

I started from definition of culture and its influence on routine practices. Undoubtedly, culture makes an impact on every side of life of its members, so web design has to be dependent on culture in some way. Furthermore, I presented the comparison of Russian and Belgian cultures by the three fundamental theories of Hofstede, Trompenaars and Hampden-Turner, and Hall. Even though, the two cultures are similar by some dimensions, some of the criteria has shown the differences. Moreover, I discussed some psychological aspects that are involved in the studied area. Likewise, I described the field of web design and its general rules, which with all the possible diversity cannot be ignored by web designers.

The gathered information has helped me to convey a case study analysis of 100 city web sites, taking examples from both Belgian and Russian cultures. The web sites were analyzed by the general criteria, structure, layout and content. Some of the points has shown similar results for Belgium and Russia. However, there are differences of web design of the two countries at some crucial issues. The distinction can be explained by the cultural features of the two countries.

Finally, I have conducted a number of interviews. I have based them on specially designed templates of typical Belgian and Russian city web sites. The interviews with the participation of Belgian and Russian citizens allowed approval of the findings from the previous chapter. It helped to explain some differences more in-depth.

While studying culture many unconscious issues remain unsaid (Hall 2). The ways in which culture influences practices like web design cannot be exhaustively explained. So far, the research question cannot be simply answered. The present Thesis has shown some implications of cultural diversity in web design. However, there is still a space for further explorations. Finally, understanding cultural diversity and awareness of it are very important issues in contemporary situation of globalization and international business growth. Knowing basic rules about user expectations can help people in real world create convenient web interfaces.

6. Self-evaluation

During the research for the present Thesis, I had the possibility to go in depth of a specific topic. However, I have learned that the question of cultural differences can never be exhausted. In order to convey an adequate self-evaluation of the present Thesis, I discuss strengths, weaknesses, opportunities and threats of the research in the following lines.

SWOT Analysis

Strengths

- Primarily, it was an important prerequisite for the research that I have studied design during my previous education. It has helped me to understand the underlying processes of web design.
- The fact that I have worked as a freelance designer helped me to use my design skills to build the templates of imaginary city web sites for the research.
- Another important advantage is that I have IT background from my school studies and a connection with professional software developers. Thus, I had an opportunity to use special objective methods of the software application on a scientific base for my research.
- A big part of the data gathered during the research is presented in numbers that allows me to display it in accessible way. It gives a good opportunity to use the results for a future research. It leads to a better understanding of the localization of web sites for the two countries. Companies can use the identified patterns in order to enhance user experience and credibility of their web sites in Russia and Belgium.

Weaknesses

- One of the weaknesses of a research in such a modern area as web design is the limited amount of academic literature. Due to the novelty of the studied object, there is a shortage of pervasive widely recognized sociological theories. However, this weakness can be overcome by a big amount of current researches and new articles on the topic appearing every day.
- Next weakness lies in a limited number of analyzed web sites. Even though, the number of examined designs is 100, there is a certain level of approximation of results. This approximation is accompanied by the subjectivity, which I tried to reduce, but it can never be absent. This was overcome by the interviews. They have shown that my findings generally correspond with the feelings of other people about differences of Belgian and Russian design approaches.

Opportunities

- One of the greatest opportunities for the present research is that I am myself a Russian person studying in Belgium. This allowed me to conduct a number of interviews with the actual members of both countries, choosing candidates from different age, background and occupation groups.
- Next, there is a theoretical base provided by Hofstede Research Center helping to convey the direct comparison of the two studied cultures in an objective and scientific way. In particular, the web site of the Center allows getting the information about many cultures and comparing it to the others.
- Besides, the city web sites are public accessible and opened for observations. I could easily access the examined web sites at any time.

Threats

- First, during my studies some cities has changed their web sites several times, so I had to redo the analysis of some web sites, when the old design disappeared. During the latter stages of the work, I saved the home pages as screenshots and continued working with them. This shows that the research of such a dynamic space can never be absolutely up to date.
- Next, the exceptions from the rules that I found in the web design of the both cultures has shown me that the research results have to be based on some generalizations.

In summary, all the possible ways to overcome weaknesses and to deal with threats were implemented. Besides, the advantages of the strengths and opportunities were used for the benefit of the research. So far, some consistent patterns of cultural determination of web design were found, however the question could never be answered completely. This shows a huge field for future research.

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Listing of Algorithms

Annex

HsvAlgorithm.h

```
#pragma once

#include "DominateColorAlgorithm.h"

namespace DominateColor {

    class HsvAlgorithm : public DominateColorAlgorithm
    {
    public:
        HsvAlgorithm();

    protected:
        virtual AlgorithmResult perform(std::shared_ptr<IplImage> pImage,
            const std::string& imagePath);

    private:
        // Determine what type of color the HSV pixel is.
        // Returns the colorType between 0 and NUM_COLOR_TYPES.
        static int getPixelColorType(int H, int S, int V);
    };
}
```

HsvAlgorithm.cpp

```
#include "stdafx.h"

#include "HsvAlgorithm.h"

using namespace DominateColor;

enum { cBLACK = 0, cWHITE, cGREY, cRED, cORANGE, cYELLOW, cGREEN, cAQUA, cBLUE, cPURPLE,
    NUM_COLOR_TYPES };
uint colorCount[NUM_COLOR_TYPES] = { 0, 0, 0, 0, 0, 0, 0, 0, 0, 0 };
char* sCTypes[NUM_COLOR_TYPES] = { "Black", "White", "Grey", "Red", "Orange", "Yellow",
    "Green", "Aqua", "Blue", "Purple" };
uchar cCTHue[NUM_COLOR_TYPES] = { 0, 0, 0, 0, 20, 30, 60, 85, 120, 138 };
uchar cCTSat[NUM_COLOR_TYPES] = { 0, 0, 0, 255, 255, 255, 255, 255, 255, 255 };
uchar cCTVal[NUM_COLOR_TYPES] = { 0, 255, 120, 255, 255, 255, 255, 255, 255, 255 };

HsvAlgorithm::HsvAlgorithm() : DominateColorAlgorithm("hsv")
{
}

DominateColorAlgorithm::AlgorithmResult HsvAlgorithm::perform(std::shared_ptr<IplImage>
    pImage,
    const std::string& imagePath)
{
    std::shared_ptr<IplImage> pHsvImage(cvCreateImage(cvGetSize(pImage.get()),
        IPL_DEPTH_8U, 3), releaseImage);
    cvCvtColor(pImage.get(), pHsvImage.get(), CV_BGR2HSV);

    std::shared_ptr<IplImage> pColorIndexesImage(
        cvCreateImage(cvGetSize(pImage.get()), IPL_DEPTH_8U, 1),
        releaseImage); //для хранения индексов цвета

    // для хранения RGB-х цветов
    std::vector<CvScalar> rgbColors(NUM_COLOR_TYPES);

    // обнуляем цвета
    for (int i = 0; i < NUM_COLOR_TYPES; i++)
```

```

{
    rgbColors[i] = cvScalarAll(0);
}

for (int y = 0; y < pHsvImage->height; y++)
{
    for (int x = 0; x < pHsvImage->width; x++)
    {
        // получаем HSV-компоненты пикселя
        uchar H = CV_PIXEL(uchar, pHsvImage.get(), x, y)[0]; // Hue
        uchar S = CV_PIXEL(uchar, pHsvImage.get(), x, y)[1]; // Saturation
        uchar V = CV_PIXEL(uchar, pHsvImage.get(), x, y)[2]; // Value

        // определяем к какому цвету можно отнести данные значения
        int ctype = getPixelColorType(H, S, V);

        // собираем RGB-составляющие
        rgbColors[ctype].val[0] += CV_PIXEL(uchar, pImage.get(), x, y)[0];
        rgbColors[ctype].val[1] += CV_PIXEL(uchar, pImage.get(), x, y)[1];
        rgbColors[ctype].val[2] += CV_PIXEL(uchar, pImage.get(), x, y)[2];

        // сохраняем к какому типу относится цвет
        CV_PIXEL(uchar, pColorIndexesImage.get(), x, y)[0] = ctype;

        // подсчитываем :)
        colorCount[ctype]++;
    }
}

// усреднение RGB-составляющих
for (int i = 0; i < NUM_COLOR_TYPES; i++)
{
    rgbColors[i].val[0] /= colorCount[i];
    rgbColors[i].val[1] /= colorCount[i];
    rgbColors[i].val[2] /= colorCount[i];
}

AlgorithmResult result;
result.pColorIndexesImage = pColorIndexesImage;
result.colorCount = NUM_COLOR_TYPES;
result.rgbColors = rgbColors;

return result;
}

int HsvAlgorithm::getPixelColorType(int H, int S, int V)
{
    int color = cBLACK;
    if (V < 75)
        color = cBLACK;
    else if (V > 190 && S < 27)
        color = cWHITE;
    else if (S < 53 && V < 185)
        color = cGREY;
    else
    {
        if (H < 7)
            color = cRED;
        else if (H < 25)
            color = cORANGE;
        else if (H < 34)
            color = cYELLOW;
        else if (H < 73)
            color = cGREEN;
    }
}

```

```

        else if (H < 102)
            color = cAQUA;
        else if (H < 140)
            color = cBLUE;
        else if (H < 170)
            color = cPURPLE;
        else // full circle
            color = cRED; // back to Red
    }
    return color;
}

```

KMeansAlgorithm.h

```

#pragma once

#include "DominateColorAlgorithm.h"

namespace DominateColor {

    class KMeansAlgorithm : public DominateColorAlgorithm
    {
    public:
        KMeansAlgorithm();

    protected:
        virtual AlgorithmResult perform(std::shared_ptr<IplImage> pImage,
            const std::string& imagePath);

    private:
        typedef struct ColorCluster
        {
            CvScalar color;
            CvScalar newColor;
            int count;
            ColorCluster() : count(0) {}
        } ColorCluster;

        static float rgbEuclidean(CvScalar p1, CvScalar p2);
    };
}

```

KMeansAlgorithm.cpp

```

#include "stdafx.h"

#include "KMeansAlgorithm.h"

using namespace DominateColor;

KMeansAlgorithm::KMeansAlgorithm() : DominateColorAlgorithm("kmeans")
{
}

DominateColorAlgorithm::AlgorithmResult KMeansAlgorithm::perform(
    std::shared_ptr<IplImage> pImage,
    const std::string& imagePath)
{
    // картинка для хранения индексов кластеров
    std::shared_ptr<IplImage> pClusterIndexesImage(
        cvCreateImage(cvGetSize(pImage.get()), IPL_DEPTH_8U, 1),
        releaseImage);
}

```



```

cvZero(pClusterIndexesImage.get());

const int clusterCount = 10;
ColorCluster clusters[clusterCount];

// начальные цвета кластеров
CvRNG rng = cvRNG(-1);
for (int k = 0; k < clusterCount; k++)
{
    clusters[k].newColor = CV_RGB(
        cvRandInt(&rng) % 255,
        cvRandInt(&rng) % 255,
        cvRandInt(&rng) % 255);
}

// k-means
float minRgbEuclidean = 0, oldRgbEuclidean = 0;

while (1)
{
    for (int k = 0; k < clusterCount; k++)
    {
        clusters[k].count = 0;
        clusters[k].color = clusters[k].newColor;
        clusters[k].newColor = cvScalarAll(0);
    }

    for (int y = 0; y < pImage->height; y++)
    {
        for (int x = 0; x < pImage->width; x++)
        {
            // получаем RGB-компоненты пикселя
            uchar B = CV_PIXEL(uchar, pImage.get(), x, y)[0];
            uchar G = CV_PIXEL(uchar, pImage.get(), x, y)[1];
            uchar R = CV_PIXEL(uchar, pImage.get(), x, y)[2];

            minRgbEuclidean = 255 * 255 * 255;
            int clusterIndex = -1;
            for (int k = 0; k < clusterCount; k++)
            {
                float euclid = rgbEuclidean(cvScalar(B, G, R, 0),
                    clusters[k].color);
                if (euclid < minRgbEuclidean)
                {
                    minRgbEuclidean = euclid;
                    clusterIndex = k;
                }
            }
            // устанавливаем индекс кластера
            CV_PIXEL(uchar, pClusterIndexesImage.get(), x, y)[0] =
                clusterIndex;

            clusters[clusterIndex].count++;
            clusters[clusterIndex].newColor.val[0] += B;
            clusters[clusterIndex].newColor.val[1] += G;
            clusters[clusterIndex].newColor.val[2] += R;
        }
    }

    minRgbEuclidean = 0;
    for (int k = 0; k < clusterCount; k++)
    {
        // new color
        clusters[k].newColor.val[0] /= clusters[k].count;
        clusters[k].newColor.val[1] /= clusters[k].count;
    }
}

```

```

        clusters[k].newColor.val[2] /= clusters[k].count;
        float ecll = rgbEuclidean(clusters[k].newColor, clusters[k].color);
        if (ecli > minRgbEuclidean)
            minRgbEuclidean = ecll;
    }

    if (fabs(minRgbEuclidean - oldRgbEuclidean) < 1)
    {
        break;
    }

    oldRgbEuclidean = minRgbEuclidean;
}

std::vector<CvScalar> rgbColors(clusterCount);
for (int i = 0; i < clusterCount; i++)
{
    rgbColors[i] = clusters[i].color;
}

AlgorithmResult result;
result.pColorIndexesImage = pClusterIndexesImage;
result.colorCount = clusterCount;
result.rgbColors = rgbColors;

return result;
}

float KMeansAlgorithm::rgbEuclidean(CvScalar p1, CvScalar p2)
{
    return sqrtf((p1.val[0] - p2.val[0])*(p1.val[0] - p2.val[0]) +
        (p1.val[1] - p2.val[1])*(p1.val[1] - p2.val[1]) +
        (p1.val[2] - p2.val[2])*(p1.val[2] - p2.val[2]) +
        (p1.val[3] - p2.val[3])*(p1.val[3] - p2.val[3]));
}

```

DominateColorAlgorithm.h

```

#pragma once

#include <memory>

#include "cv.h"

namespace DominateColor {

    typedef unsigned int uint;

    #define CV_PIXEL(type,img,x,y) (((type*)((img)->imageData+(y)*(img)->widthStep))+(x)*(img)->nChannels)

    class DominateColorAlgorithm
    {
    public:
        std::string m_algName;

        DominateColorAlgorithm(const std::string& algName);
        virtual ~DominateColorAlgorithm();

        virtual void perform(const std::string& imageFilepath);
    };
}

```

```

protected:

    typedef struct tagAlgorithmResult
    {
        std::shared_ptr<IplImage> pColorIndexesImage;
        int colorCount;
        std::vector<CvScalar> rgbColors;
    } AlgorithmResult;

    virtual AlgorithmResult perform(std::shared_ptr<IplImage> pImage,
        const std::string& imagePath) = 0;

    void saveProcentsImage(const AlgorithmResult& result,
        const std::string& imagePath);
    void saveResultImage(const AlgorithmResult& result,
        const std::string& imagePath);

    // сортировка цветов по количеству
    static bool colorsSort(std::pair< int, uint > a, std::pair< int, uint > b);
    static void releaseImage(IplImage* p);
};
}

```

DominateColorAlgorithm.cpp

```

#include "stdafx.h"

#include <sstream>

#include "DominateColorAlgorithm.h"
#include "highgui.h"

using namespace DominateColor;

DominateColorAlgorithm::DominateColorAlgorithm(const std::string& algName)
{
    m_algName = algName;
}

DominateColorAlgorithm::~DominateColorAlgorithm()
{
}

void DominateColorAlgorithm::perform(const std::string& imagePath)
{
    std::shared_ptr<IplImage> pImage(cvLoadImage(imagePath.c_str(), 1),
        releaseImage);

    if (!pImage){
        std::cout << "[!] Error: cant load image: " << imagePath << std::endl;
        throw std::exception("can not load file");
    }

    std::cout << "[i] image: " << imagePath.c_str() << std::endl;

    // ресайзим картинку (для скорости обработки)
    std::shared_ptr<IplImage> pSrcImage(
        cvCreateImage(cvSize(pImage->width / 2, pImage->height / 2),
            IPL_DEPTH_8U, 3),
        releaseImage);
    cvResize(pImage.get(), pSrcImage.get(), CV_INTER_LINEAR);
}

```

```

        auto result = perform(pImage, imageFilepath);
        saveProcentsImage(result, imageFilepath);
        saveResultImage(result, imageFilepath);
    }

    void DominateColorAlgorithm::saveProcentsImage(const AlgorithmResult& result,
        const std::string& imageFilepath)
    {
        int width = result.pColorIndexesImage->width;
        int height = result.pColorIndexesImage->height;

        std::shared_ptr<IplImage> pProcentsImage(
            cvCreateImage(cvSize(300, 200), IPL_DEPTH_8U, 3),
            releaseImage);

        // посчитаем кол-во пикселей в кластерах
        std::vector<long> clusterPixelCounts;
        clusterPixelCounts.resize(result.rgbColors.size(), 0);
        for (int y = 0; y < height; y++)
        {
            for (int x = 0; x < width; x++)
            {
                int clusterIndex =
                    CV_PIXEL(uchar, result.pColorIndexesImage.get(), x, y)[0];
                clusterPixelCounts[clusterIndex]++;
            }
        }

        // теперь загоним массив в вектор и отсортируем
        std::vector<std::pair<int, uint>> colorsOrder;
        colorsOrder.reserve(result.rgbColors.size());
        for (int i = 0; i < result.rgbColors.size(); i++)
        {
            std::pair<int, uint> color;
            color.first = i;
            color.second = clusterPixelCounts[i];
            colorsOrder.push_back(color);
        }
        std::sort(colorsOrder.begin(), colorsOrder.end(), colorsSort);

        // покажем цвета
        cvZero(pProcentsImage.get());
        int itemHeight = pProcentsImage->height / result.rgbColors.size();
        int itemWidth = pProcentsImage->width;
        CvFont font;
        cvInitFont(&font, CV_FONT_HERSHEY_SIMPLEX, 0.5, 0.5);

        long pixelCount = width * height;
        for (int i = 0; i < result.rgbColors.size(); i++)
        {
            cvRectangle(pProcentsImage.get(),
                cvPoint(50, i*itemHeight),
                cvPoint(itemWidth, i*itemHeight + itemHeight),
                result.rgbColors[colorsOrder[i].first],
                -1);
            char buffer[25];
            sprintf(buffer, "%.2f",
                clusterPixelCounts[colorsOrder[i].first] * 100.0 / pixelCount);
            cvPutText(pProcentsImage.get(),
                buffer,
                cvPoint(0, i*itemHeight + itemHeight - 5),
                &font,
                CV_RGB(255, 255, 255));
        }
    }

```

```

        std::stringstream ssResulImagePath;
        ssResulImagePath << imageFilepath;
        ssResulImagePath << "_table_";
        ssResulImagePath << m_algName;
        ssResulImagePath << ".png";
        cvSaveImage(ssResulImagePath.str().c_str(), pProcentsImage.get());
    }

void DominateColorAlgorithm::saveResultImage(const AlgorithmResult& result,
    const std::string& imageFilepath)
{
    int width = result.pColorIndexesImage->width;
    int height = result.pColorIndexesImage->height;

    std::shared_ptr<IplImage> pResultImage(
        cvCreateImage(cvSize(width, height), IPL_DEPTH_8U, 3),
        releaseImage);
    for (int y = 0; y < height; y++)
    {
        for (int x = 0; x < width; x++)
        {
            int clusterIndex =
                CV_PIXEL(uchar, result.pColorIndexesImage.get(), x, y)[0];

            CV_PIXEL(uchar, pResultImage.get(), x, y)[0] =
                result.rgbColors[clusterIndex].val[0];
            CV_PIXEL(uchar, pResultImage.get(), x, y)[1] =
                result.rgbColors[clusterIndex].val[1];
            CV_PIXEL(uchar, pResultImage.get(), x, y)[2] =
                result.rgbColors[clusterIndex].val[2];
        }
    }

    std::stringstream ssResulImagePath;
    ssResulImagePath << imageFilepath;
    ssResulImagePath << "_colors_";
    ssResulImagePath << m_algName;
    ssResulImagePath << ".png";
    cvSaveImage(ssResulImagePath.str().c_str(), pResultImage.get());
}

// сортировка цветов по количеству
bool DominateColorAlgorithm::colorsSort(std::pair<int,uint> a, std::pair<int,uint> b)
{
    return (a.second > b.second);
}

void DominateColorAlgorithm::releaseImage(IplImage* p)
{
    cvReleaseImage(&p);
}

```

References

OpenCV - определение доминирующих цветов на изображении. n. d. Web. 31 May 2015.
 Mode access: <http://robocraft.ru/blog/computervision/1063.html>

Interviews

Annex

Adri Leemput (A.L.)

29 years. Leuven, Belgium. City guide. Questionnaire. 11.05.2015

Interviewer: What do you feel about these templates? Do you agree with the look of typical Belgian city website?

A.L.: It looks more like a corporation. Like a university. Also serious but less serious than a city. The Russian looks more like what I would like to be a standard city website. Because it's just one thing in the middle, and all the navigation around. Not too much in the center, you don't have to choose from too much.

Interviewer: If you were a head of city administration, which of two web sites you would prefer to use to represent your city?

A.L.: As a general city website, I would choose this one [Russian]. The second one is for tourism or culture [Belgian].

Interviewer: How do you feel about the photo of the mayor?

A.L.: I would use that room for something else. Because you know who the mayor of the city is. Especially for big cities it the famous or local know figure. But it would be nice to have pictures of everyone somewhere else.

Interviewer: What do you think about agenda on city websites?

A.L.: It depends on what in the agenda is. Often they give flyers saying what and where. It can be nice to have it as a link to somewhere else.

Interviewer: Thank you for your answers.

A.L.: You are welcome.

Anouck Vandewalle (A.V.)

21 years. Antwerpen, Belgium. Student. Questionnaire. 11.05.2015

Interviewer: If you were a head of city administration, which of two web sites you would prefer to use to represent your city?

A.V.: I think I would probably choose this one [Belgian] because the other one is more like for news channel. It reminds me of the page of television. It's much more formal. This one [Belgian] is much more inviting.

Interviewer: Why do you like less formal web site?

A.V.: It should of course be formal. It's still an official website. It could work for a corporation, so the website would be saying "this is my company, this is what I stand for". But I think a more

welcoming and a bit more familiar way is better for a city, because I imagine you would like to attract tourists. It is the place where we live, the place we come home, and the place we grew up in. You would like to invite.

Interviewer: What do you think about agenda on city web sites? Would you place it there?

A.V.: It depends if there are many cultural events happening. I must say, I do not go a lot to my city's homepage. That's because I live there I don't need agenda. It could be very important if you are very touristic place, you do many events, and you want to attract many people. But it important to also have an email.

Interviewer: What do you think about links to social media accounts of such web sites?

A.V.: I think nowadays it seems important for everything. But I don't think it has such an advantage. I don't think it's necessary. I think that people do it because it's popular. I can't think of an example of a situation where I would need a Facebook page for a city.

Interviewer: How do you feel about the photo of the mayor?

A.V.: I think it depends. It looks very formal. It would be good if it was the head of a corporation. But the photo can inform your citizens I am still your mayor, you still voted for me. You know if go to 'Bestuur'... it means council, maybe you could find all the pictures like this there. You know, we often have links to the facilities like library, when you go to that website, you have a picture of the head librarian. Maybe not on a front page, because no one cares.

Interviewer: Sometimes on Russian web sites the mayor publishes his small speech to the citizens welcoming them.

A.V.: I think that's good, because it shows commitment. It could add another dimension to your website like you know who's behind that.

Interviewer: There were no Belgian web sites with the same feature in my case study.

A.V.: I think that's because generally in Belgium we don't really care about politicians. We do not think they are powerful. Obviously, they have power, but it's not like they're looked upon. It's a bit like the role of them in our country is not a big deal. We have them because we have to. People complain more about politicians than agree with them.

Interviewer: So you think that the city website is not about politics and economics?

A.V.: No, because I don't even know who the mayor of my city is, because I don't care. Everything runs smoothly, I just take it for granted. Even if it doesn't run smoothly, like it was in Belgium some time, when we didn't have government, we didn't care. Because everything still was good. I think people in Belgium just don't care about city council. Obviously, some people would, but very few people do. In Belgium you would have news on a front page, upcoming events, things that need attention immediately. Our mayor doesn't really matter.

Interviewer: Thank you for your answers.

A.V.: I am glad that I helped.

Ilya Igorevich Shmarov (I.S.)

29 years. Petrozavodsk, Russia. Software developer. Skype Interview. 11.05.2015

Interviewer: If you were a head of city administration, which of two web sites you would prefer to use to represent your city?

I.S.: The first [Russian]. It is more habitual for me. Well, there is a man, the mayor... It is what an administration should be... It depends on goals of a web site, but as an official representation, Russian template fits better. Blue color is more austere. It is present in our state flag. While the Belgian template is more bright and pretty. I think it is important to provide a function 'Apply', to lodge an appeal to the government. If there is some contact with the city administration... to write treatment complaint, review, appeal to the mayor... On our city web sites you can often do it. That's what I thought was on the Russian template.

Interviewer: Indeed, you can meet contact forms of Russian city web sites. Belgian ones more often provide an email, address and phone number.

I.S.: Nobody here will write an email. It's more traditional to do it on a web site. At least my parents wouldn't bother to write an email. It often stops myself. Even my contact to the police was made through their web site. Of course, I stated my own email address and the answer was delivered there, but I prefer to send it through the web site.

Interviewer: What do you think about tile and paragraph structure of city web sites?

I.S.: It's more comfortable in paragraphs. It's easier to read, but not for visual attractiveness. It's easier to read a bit longer lines. Maybe tiles can be more adaptive, but it's not good for reading.

Interviewer: Do you think there has to be mobile adapted version of a city website?

I.S.: Well, there is not much sense in it. Maybe in Belgium it's needed for tourism, so that you can check from your phone where to go from a bar you are currently in. But I think Russian city web sites are more for citizens who will browse it from home computer. I don't see the scenarios. By the way, it's very popular in Russia to use the word 'Administration'. We are more related to the officiality.

Interviewer: Yes, there is often the word 'Administration' present in order to mark the web site as a trustable one.

I.S.: Indeed, when it is official, you can understand that it is the one that you need. I like more to visit official web sites to check proof links.

Interviewer: What do you think about links to social media accounts of such web sites?

I.S.: Speaking about Facebook and Twitter, I think, that they are useless. I do not see what they would do here. In Russia you can often see an account of an official person. For example, Medvedev developed this. Now it's becoming more popular, but I don't use it. Our users are not so developed. My uncles and aunts can visit a web site, write a message, read some news, but they will not follow someone's account for sure. I mean, maybe youngsters can, but the older generation would not. Our older generation was raised in communism. Many years in that

ideology. Maybe now it's a crucial moment because it's the change of generation. Me and you are the people who could be born in USSR, but most of our life we spent in another world. There was no this officiality in everyday life: communism, politics... Now we live more informal. Of course, the process is going to be long, there is always a habit. There has been already some steps made towards a new direction.

Interviewer: Thank you for your answers.

I.S.: You are welcome.

Jeroen Deforche (J.D.)

26 years. Brugge, Belgium. Unemployed. Questionnaire. 11.05.2015

Interviewer: If you were a head of city administration, which of two web sites you would prefer to use to represent your city?

J.D.: Definitely the first [Belgian] one. Because if you look at this one [Russian] you would see the weapon shield and then you have a person underneath it, who is looking straight at you. He is saying like "I'm watching you. I'm the mayor." He looks a bit authoritarian. And because you see all this on a website you feel like "Hoo! What is that here?!" so... and here [Belgian] it's a bit more distant and it's not that personal. And it's good. You don't want a leader that is above you, who controls you. And in that way it [Belgian template] looks more professional and more modern in design.

Interviewer: What do you think about agenda on city web sites? Would you place it there?

J.D.: Yeah I think it's very good. Most of them would combine it.

Interviewer: Do you think there has to be mobile adapted version of a city website?

J.D.: I would definitely not do it that often, but when I have my smartphone I use it more. Especially when you have for example a phone number that you can look up very quickly. Sometimes you would need it, but in most of the cases, I think you can use your laptop.

Interviewer: Thank you for your answers.

J.D.: You are welcome.

Leontien Vanderschelden (L.V.)

21 years. Roeselare, Belgium. Student. Questionnaire. 11.05.2015

Interviewer: If you were a head of city administration, which of two web sites you would prefer to use to represent your city?

L.V.: It's difficult. I think that for me it would be with bigger pictures. But I think that there [Belgian] is more structure in it. I think for business people it doesn't mean if it's fancy. I think I would rather use this one [Belgian]. If it is to search something, when you really know what you are looking for, I think the Russian one is better.

Interviewer: What do you think about agenda on city web sites? Would you place it there?

L.V.: Yes, I think so. It's always nice when you go to place and you know that there are no just buildings and nature to see, but also something to do. I would rather go to website to see something for me not for officials. (Leontien)

Interviewer: How do you feel about the photo of the mayor?

L.V.: It can be but not on front page.

Interviewer: What do you think about the usage of coat of arms on a city web site?

L.V.: I like the coat of arms. It's nice. It's more cultural than logotype. In my city it is just an R, because it's Roeselare. It starts with R which is just more fancy. But coat of arms says more about city.

Interviewer: Do you like illustrated menus?

L.V.: Symbols are good, I think. Especially when you use it from mobile phone. Because we live in such a society, it is important to also have little symbols. With them it's easier to remember.

Interviewer: Do you think there has to be mobile adapted version of a city website?

L.V.: I don't have a smartphone, but when I have I would definitely use it for browsing.

Interviewer: Thank you for your answers.

L.V.: I am happy to help.

Maria Alexandrovna Sokolova (M.S.)

27 years. Saint-Petersburg, Russia. Accountant. Questionnaire. 09.05.2015

Interviewer: If you were a head of city administration, which of two web sites you would prefer to use to represent your city?

M.S.: Indeed, the core of the web site of Saint-Petersburg is the same as in the [Russian] template. The template has all the true sections: news, education – that's what has to be on these sites. Like budget...

Interviewer: Do you think it suits the goal of a city web site?

M.S.: There are often two websites: one for institution, another one for attractions and announcements.

Interviewer: So which one would you choose?

M.S.: I like the green one [Belgian] more. Tallin has something like this. I am a tourist, so I like the web sites oriented for my goals.

Interviewer: Thank you for your answers.

M.S.: You are welcome.

Tatyana Vasilyevna Kochubeeva (T.K.)

51 years. Saint-Petersburg, Russia. Chief accountant. Questionnaire. 09.05.2015

Interviewer: If you were a head of city administration, which of two web sites you would prefer to use to represent your city?

T.K.: [pointing at the Russian template] Well, this is what I am used to. When you open the news, it indeed looks like here. For me it's the habit. I am getting lost, when there are many tiles. With my habit it's easier to read in paragraphs, rather than to jump from one thing to another. When you read in sequence, then things follow each other. Maybe many tiles are good, when you need a variety.

Interviewer: How do you feel about the photo of the mayor?

T.K.: Russians are more related to this. The head of the city is a big wig. Russians have it in habit to rely upon a father-tsar, a party chairperson or a president. Maybe Belgian are more relying on themselves.

Interviewer: What do you think about agenda on city websites?

T.K.: Sometimes we have it on Russian web sites, when there are large-scale events.

Interviewer: Thank you for your answers.

T.K.: You are welcome.

Victoria Gennadyevna Petrova (V.P.)

and 30 years. Saint-Petersburg, Russia. Event manager. Questionnaire. 09.05.2015

Interviewer: If you were a head of city administration, which of two web sites you would prefer to use to represent your city?

V.P.: The blue one [Russian] looks like website of state institution. It's like mayor's apparatus. For me personally it's too official. I would prefer the second type [Belgian]. If I check a city website, I would like to find information not only for locals, but for tourists also. Taxi, festivals, buses, prices... However it is not present neither on Russian nor on Belgian web site. Anyway, administration and city are different things, and the web site depends on the target audience.

Interviewer: So what would be your choice?

V.P.: I would add more structural officiality to the green one [Belgian] but in a lighter form. As a citizen, I am not interested in this web sites. It applies to a structural organization like police, medical clinic. It's dry information.

Interviewer: Who you think is a target audience for Russian city web sites?

V.P.: I think they target organizations.

Interviewer: Thank you for your answers.

V.P.: No problem.

City web sites analysis

Annex

City	Image logo	Coat of arms	Administrative	Touristic	Formality
Halle	1	0	0	1	0
Charleroi	1	0	0	1	1
Tournai	1	0	1	0	0
Braine-l'Alleud	1	0	1	0	0
Châtelet	0	1	1	0	0
La Louvière	1	0	1	0	0
Verviers	0	1	1	0	1
Herstal	1	0	1	0	1
Mons	1	0	0	1	0
Mouscron	0	1	1	0	0
Namur	1	0	1	0	1
Liège	1	0	0	1	0
Leuven	0	0	1	0	1
Hasselt	1	0	1	0	0
Knokke-Heist	1	0	1	0	0
Mechelen	1	0	1	0	0
Gent	1	0	0	1	0
Antwerpen	1	0	0	1	0
Anderlecht	1	0	1	0	1
leper	1	0	1	0	0
Seraing	1	0	1	0	0
Brussels	1	0	0	1	0
Waregem	1	0	1	0	1
Geel	1	0	1	0	0
Brugge	1	0	0	1	0
Beveren	1	0	1	0	0
Dendermonde	1	0	1	0	1
Dilbeek	1	0	1	0	1
Grimbergen	1	0	1	0	1
Heist-op-den-Berg	1	0	1	0	1
Maasmechelen	1	0	1	0	1
Mol	1	0	1	0	0
Sint-Niklaas	1	0	1	0	0
Sint-Truiden	1	0	1	0	0
Turnhout	0	0	1	0	0
Beringen	1	0	1	0	0
Genk	1	0	1	0	0
Lokeren	1	0	1	0	1
Ninove	1	0	1	0	0
Roeselare	1	0	1	0	1
Vilvoorde	1	0	1	0	0
Oostende	1	0	1	0	0
Lier	1	0	1	0	1
Schoten	0	0	1	0	1
Aalst	1	0	1	0	0

Brasschaat	1	0	1	0	1
Kortrijk	0	0	1	0	0
Molenbeek-Saint-Jean	1	0	1	0	0
Shaerbeek	0	0	1	0	0
Elsene	1	0	1	0	0
Results	42	3	42	8	17

City	Languages	Hyperlinks to social networks	Symbols as metaphors	Image as background	Color background
Halle	EN DE	0	1	1	white
Charleroi	EN NL	0	1	1	white
Tournai	EN NL	0	1	0	white
Braine-l'Alleud	FR	1	1	1	white
Châtelet	FR	0	1	0	white
La Louvière	FR	1	1	1	white
Verviers	FR	0	1	0	white
Herstal	FR	0	1	0	white
Mons	FR	0	1	0	white
Mouscron	FR	1	0	0	white
Namur	FR EN NL DE	1	1	0	white
Liège	FR EN NL DE	1	1	0	white
Leuven	FR EN NL DE	1	1	0	white
Hasselt	FR EN NL DE	1	0	0	white
Knokke-Heist	FR EN NL DE	0	1	1	white
Mechelen	FR EN NL DE	0	1	0	white
Gent	FR EN NL DE	1	1	0	white
Antwerpen	FR EN NL DE	0	1	0	white
Anderlecht	NL FR	0	0	0	white
Ieper	FR NL EN	1	1	0	white
Seraing	FR NL EN	1	1	1	white
Brussels	FR NL EN	1	1	0	white
Waregem	FR NL EN	0	1	0	white
Geel	NL	1	1	0	white
Brugge	NL	1	1	1	grey
Beveren	NL	1	1	0	white
Dendermonde	NL	1	1	0	white
Dilbeek	NL	0	0	0	white
Grimbergen	NL	0	1	0	white
Heist-op-den-Berg	NL	0	1	0	white
Maasmechelen	NL	1	1	0	white
Mol	NL	0	1	0	white
Sint-Niklaas	NL	0	1	0	white
Sint-Truiden	NL	0	1	0	white
Turnhout	NL	1	1	0	white
Beringen	NL	0	1	0	white
Genk	NL	0	1	0	white
Lokeren	NL	0	1	0	white
Ninove	NL	0	1	0	white
Roeselare	NL	0	1	0	white
Vilvoorde	NL	1	1	0	white
Oostende	NL	0	1	0	white
Lier	NL	1	1	0	white
Schoten	NL	0	1	0	white
Aalst	NL	1	0	1	white

Brasschaat	NL	0	1	0	white
Kortrijk	NL	0	1	0	white
Molenbeek-Saint-Jean	NL FR	1	1	1	white
Shaerbeek	NL FR	0	1	1	white
Elsene	NL FR	0	1	0	white
Results	1 EN DE	21	45	10	1 grey
	2 EN NL				49 white
	7 FR				
	8 FR NL EN DE				
	5 NL FR				
	5 FR NL EN				
	24 NL				

City	Secondary color	Infographics	Drawings	Photos	Fixed width	Menu top	Menu left
Halle	red	0	0	1	1	1	0
Charleroi	blue	0	0	1	1	1	0
Tournai	blue	0	1	1	1	1	1
Braine-l'Alleud	blue	0	0	1	0	1	0
Châtelet	blue	0	0	1	1	1	0
La Louvière	blue	0	1	1	1	1	1
Verviers	blue	0	1	1	1	1	0
Herstal	grey	1	0	1	0	1	1
Mons	red	0	1	1	1	1	0
Mouscron	red	0	1	1	1	1	0
Namur	blue	0	0	1	1	1	0
Liège	pink	0	1	1	1	1	1
Leuven	red	0	1	1	1	1	0
Hasselt	red	1	0	1	1	1	1
Knokke-Heist	blue	1	1	0	1	1	0
Mechelen	blue	0	1	1	1	1	0
Gent	green	1	1	1	1	1	0
Antwerpen	red	0	0	1	1	1	0
Anderlecht	blue	0	0	1	1	1	1
Ieper	blue	0	1	1	0	1	1
Seraing	green	0	1	1	1	1	1
Brussels	red	1	0	1	1	1	0
Waregem	red	0	1	1	1	1	1
Geel	orange	0	0	1	1	1	1
Brugge	blue	0	0	1	1	1	1
Beveren	yellow	0	1	0	0	1	0
Dendermonde	blue	1	0	1	0	1	1
Dilbeek	blue	0	1	1	1	1	0
Grimbergen	blue	0	0	1	1	1	0
Heist-op-den-Berg	blue	0	1	1	1	1	1
Maasmechelen	blue	0	0	1	1	1	1
Mol	blue	0	0	1	1	1	0
Sint-Niklaas	blue	0	0	1	1	1	1
Sint-Truiden	blue	1	1	1	1	1	0
Turnhout	blue	0	1	1	0	1	1
Beringen	green	0	1	1	1	1	1
Genk	green	0	0	1	1	1	0
Lokeren	green	0	1	1	0	1	0
Ninove	green	0	0	1	1	1	1
Roeselare	green	0	1	1	1	1	1
Vilvoorde	green	0	1	1	1	1	0
Oostende	grey	0	1	1	1	1	0
Lier	orange	0	0	1	1	1	0
Schoten	orange	0	1	1	1	1	1
Aalst	red	0	0	1	0	0	1

Brasschaat	red	1	0	1	1	1	1
Kortrijk	red	0	0	1	1	1	1
Molenbeek-Saint-Jean	blue	0	0	1	0	1	0
Shaerbeek	blue	0	1	1	1	1	0
Elsene	green	0	0	1	1	1	0
Results	1 yellow	8	25	48	41	49	23
	24 blue						
	9 green						
	2 grey						
	3 orange						
	1 pink						
	13 red						

City	Menu right	Menu bottom	Number of menus	Horizontal menu	Vertical menu	Illustrated menu	Login digital loket
Halle	0	0	2	1	0	0	0
Charleroi	1	0	3	1	1	0	0
Tournai	0	0	3	1	1	0	0
Braine-l'Alleud	0	0	2	1	0	1	0
Châtelet	0	0	2	1	0	0	0
La Louvière	1	0	3	1	1	1	0
Verviers	1	0	3	1	1	1	0
Herstal	0	0	3	1	1	0	0
Mons	0	0	3	1	0	0	0
Mouscron	1	0	2	1	1	0	0
Namur	0	0	1	1	0	0	0
Liège	0	0	3	1	1	0	0
Leuven	1	0	2	1	1	0	1
Hasselt	1	0	3	1	1	0	1
Knokke-Heist	0	1	3	1	0	0	1
Mechelen	0	0	2	1	1	0	1
Gent	0	0	2	1	0	0	0
Antwerpen	0	0	2	1	0	0	0
Anderlecht	0	0	2	1	1	0	0
leper	1	0	3	1	1	0	1
Seraing	0	0	2	1	1	0	0
Brussels	0	0	2	1	0	0	0
Waregem	0	0	2	1	1	0	1
Geel	0	0	2	1	1	0	1
Brugge	0	1	3	1	1	0	1
Beveren	0	0	3	1	0	0	0
Dendermonde	1	0	3	1	1	0	0
Dilbeek	0	0	2	1	0	0	0
Grimbergen	0	1	3	1	0	0	1
Heist-op-den-Berg	1	0	4	1	1	0	1
Maasmechelen	0	0	3	1	1	0	0
Mol	0	0	2	1	0	0	1
Sint-Niklaas	0	0	3	1	1	0	1
Sint-Truiden	0	0	1	1	0	0	1
Turnhout	0	0	3	1	1	0	0
Beringen	0	0	2	1	1	0	0
Genk	1	0	2	1	1	0	1
Lokeren	0	0	1	1	0	0	1
Ninove	0	0	2	1	1	0	1
Roeselare	0	0	3	1	1	1	1
Vilvoorde	1	0	3	1	1	1	1
Oostende	0	0	3	1	0	1	1
Lier	0	0	2	1	0	0	0
Schoten	0	0	3	1	1	0	0
Aalst	0	0	1	0	1	0	0

Brasschaat	0	0	3	1	1	0	0
Kortrijk	0	0	3	1	1	0	1
Molenbeek-Saint-Jean	0	0	1	1	0	0	0
Shaerbeek	0	0	2	1	0	1	0
Elsene	0	0	1	1	0	0	0
Results	11	3	119	49	30	7	20

	Slideshow	Tiles	Columns	Agenda or News	Drop-down Menus	Photos of people	Photos of Groups of People	Pictures of Art, Leisure and Sport
Aalst	1	0	1	n	0	1	1	1
Anderlecht	0	0	2	na	0	1	1	1
Antwerpen	1	1	0	a	1	1	1	1
Beringen	0	1	2	n	1	1	0	1
Beveren	1	1	1	n	0	1	1	1
Braine-l'Alleu	1	1	2	na	0	1	1	1
Brasschaat	0	1	3	n	0	0	0	0
Brugge	1	1	3	na	0	1	0	1
Brussels	1	1	3	na	0	1	1	1
Charleroi	1	1	3	na	1	1	1	1
Châtelet	1	0	3	a	0	1	0	1
Dendermonde	0	0	2	na	0	0	0	1
Dilbeek	0	1	2	na	1	1	1	0
Elsene	1	0	3	na	1	0	0	0
Geel	0	1	3	a	1	1	1	1
Genk	1	0	3	n	1	1	1	1
Gent	0	1	3	n	0	1	1	1
Grimbergen	0	1	1	n	0	0	0	0
Halle	0	0	2	na	1	0	0	1
Hasselt	1	0	1	n	0	1	1	1
Heist-op-den-	0	0	2	n	0	1	1	1
Herstal	0	0	2	na	0	0	0	0
Ieper	0	0	2	n	0	1	1	0
Knokke-Heist	1	1	3	n	1	1	1	1
Kortrijk	0	1	0	a	0	1	1	1
La Louvière	0	0	3	a	0	0	0	0
Leuven	0	1	0	a	1	1	0	0
Liège	0	0	3	0	1	1	0	0
Lier	1	1	4	n	0	1	1	1
Lokeren	0	1	4	n	0	1	1	1
Maasmechelen	0	0	3	n	1	1	1	1
Mechelen	1	1	3	na	1	1	1	1
Mol	1	1	3	na	1	1	1	1
Molenbeek-Sa	0	1	3	n	1	1	1	1
Mons	1	0	3	na	0	1	1	1
Mouscron	1	1	3	a	0	0	0	0
Namur	0	1	2	n	0	1	0	1
Ninove	0	1	2	n	0	1	1	1
Oostende	0	1	0	n	0	1	0	0
Roeselare	1	1	3	na	1	1	1	1
Schoten	0	1	3	na	0	0	0	0
Seraing	0	1	2	na	0	1	1	0
Shaerbeek	1	1	4	na	1	1	1	1
Sint-Niklaas	0	0	3	n	0	1	1	1

Sint-Truiden	0	0	2	n	0	1	1	0
Tournai	1	1	3	na	1	1	1	1
Turnhout	0	1	3	na	1	1	1	1
Verviers	0	1	2	na	0	0	0	1
Vilvoorde	1	0	2	n	1	1	1	1
Waregem	1	1	3	n	0	1	1	1
	22	32			20	40	33	36

	Smiling Faces	Landscape	Photo of a mayor	Adapted for mobile	Amount of words on the page
Aalst	1	0	0	1	42
Anderlecht	0	1	0	1	372
Antwerpen	1	1	0	0	406
Beringen	1	1	0	0	280
Beveren	1	0	0	1	645
Braine-l'Alleu	0	1	0	1	532
Brasschaat	0	1	0	1	1106
Brugge	0	1	0	1	1168
Brussels	1	1	0	1	283
Charleroi	0	1	0	0	657
Châtelet	0	1	0	0	344
Dendermonde	0	1	0	0	308
Dilbeek	0	1	0	0	726
Elsene	0	1	0	0	176
Geel	1	1	0	1	243
Genk	1	1	0	0	1430
Gent	0	1	0	1	707
Grimbergen	0	1	0	0	105
Halle	0	1	0	0	1612
Hasselt	0	1	0	0	300
Heist-op-den-	0	0	0	0	150
Herstal	0	1	0	0	1562
Ieper	0	1	0	0	458
Knokke-Heist	1	1	0	0	487
Kortrijk	1	1	0	1	133
La Louvière	0	1	0	0	269
Leuven	0	0	0	0	475
Liège	1	1	0	0	309
Lier	1	1	0	0	343
Lokeren	1	0	0	1	319
Maasmechelen	1	1	0	0	424
Mechelen	1	1	0	0	605
Mol	1	1	0	1	279
Molenbeek-Sa	1	1	0	1	215
Mons	1	1	0	0	818
Mouscron	0	1	0	0	171
Namur	0	1	0	0	154
Ninove	1	1	0	0	287
Oostende	0	1	0	1	250
Roeselare	1	1	0	1	744
Schoten	0	1	0	0	490
Seraing	0	1	0	0	508
Shaerbeek	1	1	0	0	324
Sint-Niklaas	1	1	0	0	529

Sint-Truiden	0	1	0	0	566
Tournai	1	1	0	1	497
Turnhout	1	0	0	1	320
Verviers	0	1	0	0	717
Vilvoorde	0	1	0	0	360
Waregem	1	1	0	0	818
	24	44	0	17	25023
					500,46

City	Image logo	Coat of arms	Administrative	Touristic	Formality
Arkhangel'sk	0	1	1	0	1
Barnaul	0	1	1	0	1
Belgorod	0	1	1	0	1
Bryansk	0	1	1	0	1
Cheboksary	0	1	1	0	0
Chelyabinsk	0	1	1	0	1
Irkutsk	0	1	1	0	1
Ivanovo	0	1	1	0	1
Kaliningrad	0	1	1	0	1
Kirov	0	1	1	0	0
Kursk	0	1	1	0	1
Lipetsk	0	1	1	0	1
Makhachkala	0	1	1	0	1
Nizhniy Tagil	0	1	1	0	1
Novokuznetsk	0	1	1	0	1
Orenburg	0	1	1	0	0
Penza	0	1	1	0	0
Ryazan'	1	0	1	0	0
Saratov	1	0	0	1	0
Stavropol'	0	1	1	0	1
Tomsk	0	1	1	0	0
Tula	0	1	1	0	0
Tyumen	0	1	1	0	1
Ulan-Ude	0	1	1	0	0
Vladivostok	1	0	1	0	0
Volgograd	0	1	1	0	1
Yaroslavl	1	0	0	1	0
Astrakhan'	0	1	1	0	1
Kemerovo	0	1	1	0	0
Khabarovsk	0	1	1	0	1
Krasnodar	0	1	1	0	1
Moscow	0	1	1	0	1
Rostov-na-Donu	0	1	1	0	0
Saint Petersburg	0	1	1	0	1
Samara	0	1	1	0	0
Tol'yatti	0	1	1	0	0
Tver	0	1	1	0	0
Voronezh	0	1	1	0	1
Yekaterinburg	0	1	1	0	1
Ufa	1	1	1	0	0
Perm	0	1	1	0	1
Krasnoyarsk	0	1	1	0	0
Magnitogorsk	0	1	1	0	1

Novosibirsk	0	1	1	0	1
Ulyanovsk	0	1	0	1	0
Omsk	0	1	1	0	1
Kazan	0	1	1	0	0
Nizhniy Novgorod	0	1	1	0	1
Izhevsk	1	0	1	0	1
Naberezhnyye Chelny	1	0	1	0	0
	7	38	47	3	24

City	Languages	Hyperlinks to social networks	Symbols as metaphors	Image as background	Color background
Arkhangel'sk	RU	0	1	0	white
Barnaul	RU	0	1	0	white
Belgorod	RU	0	1	0	white
Bryansk	RU	0	1	0	white
Cheboksary	RU	0	1	0	white
Chelyabinsk	RU	0	1	0	white
Irkutsk	RU	0	1	0	white
Ivanovo	RU	0	1	0	white
Kaliningrad	RU	0	1	0	white
Kirov	RU	0	1	0	white
Kursk	RU	0	1	0	white
Lipetsk	RU	1	1	1	white
Makhachkala	RU	0	1	0	white
Nizhniy Tagil	RU	0	1	0	white
Novokuznetsk	RU	0	1	0	grey
Orenburg	RU	1	1	1	white
Penza	RU	0	1	1	white
Ryazan'	RU	0	1	0	white
Saratov	RU	1	1	1	white
Stavropol'	RU	0	0	0	white
Tomsk	RU	0	1	1	white
Tula	RU	0	1	1	white
Tyumen	RU	0	1	0	white
Ulan-Ude	RU	0	1	1	varies in differ
Vladivostok	RU	0	1	0	white
Volgograd	RU	0	1	0	white
Yaroslavl	RU	0	1	1	white
Astrakhan'	RU EN	0	1	0	grey
Kemerovo	RU EN	0	1	0	white
Khabarovsk	RU EN	0	1	0	white
Krasnodar	RU EN	1	1	0	white
Moscow	RU EN	0	1	0	white
Rostov-na-Donu	RU EN	0	1	0	white
Saint Petersburg	RU EN	1	1	0	white
Samara	RU EN	1	1	0	white
Tol'yatti	RU EN	0	1	0	white
Tver	RU EN	0	1	1	varies in differ
Voronezh	RU EN	0	1	0	white
Yekaterinburg	RU EN	0	1	0	white
Ufa	RU EN BASH	1	1	0	white
Perm	RU EN CH	0	1	0	white
Krasnoyarsk	RU EN DE	0	1	1	white
Magnitogorsk	RU EN DE	1	1	0	white

Novosibirsk	RU EN DE	0	0	0	white
Ulyanovsk	RU EN DE	0	1	1	white
Omsk	RU EN DE CHINESE	0	1	0	white
Kazan	RU EN TAT	0	0	1	white
Nizhniy Novgorod	RU EN TAT DE FR	0	1	0	white
Izhevsk	RU EN UDM	0	1	0	white
Naberezhnyye Chelny	RU TAT	1	0	0	white
27 only RU		9	40	12	2 grey
12 RU NE					2 varieble
4 RU EN DE					46 white
RU EN BASH					
RU EN DE CHINESE					
RU EN TAT					
RU EN TAT DE FR					
RU EN UDM					

City	Secondary color	Infographics	Drawings	Photos	Fixed width	Menu top	Menu left
Arkhangel'sk	0	1	1	0	1	0	1
Barnaul	1	0	1	0	1	0	0
Belgorod	1	1	1	0	0	0	1
Bryansk	0	1	1	1	0	1	0
Cheboksary	0	1	0	0	1	1	1
Chelyabinsk	0	0	1	1	1	0	1
Irkutsk	1	1	1	0	1	0	0
Ivanovo	1	1	1	0	1	1	1
Kaliningrad	0	1	1	0	1	1	1
Kirov	1	0	1	1	1	1	0
Kursk	0	0	1	0	1	1	0
Lipetsk	0	0	1	1	1	0	0
Makhachkala	0	1	1	0	1	1	0
Nizhniy Tagil	0	0	1	1	1	1	1
Novokuznetsk	0	0	1	0	1	0	0
Orenburg	1	0	1	1	1	1	1
Penza	0	1	1	1	0	1	0
Ryazan'	1	1	1	1	1	0	0
Saratov	1	1	1	1	1	0	0
Stavropol'	0	0	1	0	1	0	0
Tomsk	0	1	1	1	1	0	0
Tula	1	1	1	1	1	0	0
Tyumen	0	1	1	0	1	0	1
Ulan-Ude	0	1	1	1	1	0	0
Vladivostok	1	0	1	0	0	1	0
Volgograd	0	1	1	0	1	0	0
Yaroslavl	0	0	1	0	1	0	0
Astrakhan'	1	0	1	1	1	0	0
Kemerovo	0	1	1	1	1	0	1
Khabarovsk	0	0	1	0	1	0	1
Krasnodar	0	0	1	1	1	0	0
Moscow	1	0	1	0	1	0	0
Rostov-na-Donu	0	0	1	1	1	0	0
Saint Petersburg	1	0	1	1	1	0	0
Samara	1	0	1	0	1	0	0
Tol'yatti	0	1	0	0	1	0	0
Tver	0	1	1	0	1	1	0
Voronezh	0	0	1	0	1	0	0
Yekaterinburg	1	0	0	1	1	1	1
Ufa	0	1	1	1	1	0	0
Perm	0	1	1	1	1	0	0
Krasnoyarsk	0	1	0	0	0	1	1
Magnitogorsk	1	1	1	1	1	1	0

Novosibirsk	0	0	1	1	1	0	1
Ulyanovsk	1	1	1	0	1	1	0
Omsk	0	1	1	0	1	0	1
Kazan	0	1	1	1	1	0	0
Nizhniy Novgorod	0	0	1	0	1	0	0
Izhevsk	0	1	1	0	1	0	1
Naberezhnyye Chelny	0	1	1	1	1	0	0
	15	24	41	22	41	14	12

City	Menu right	Menu bottom	Number of menus	Horisontal menu	Vertical menu	Illustrated menu
Arkhangel'sk	0	2	1	1	0	blue
Barnaul	0	2	1	0	0	grey
Belgorod	1	2	0	1	0	blue
Bryansk	0	1	0	1	0	blue
Cheboksary	0	3	1	1	1	blue
Chelyabinsk	0	2	1	1	1	green
Irkutsk	0	1	1	0	0	blue
Ivanovo	0	3	1	1	0	blue
Kaliningrad	0	3	1	1	1	blue
Kirov	0	2	1	1	0	red
Kursk	0	2	1	1	1	blue
Lipetsk	1	2	1	0	0	grey
Makhachkala	0	4	1	1	0	grey
Nizhniy Tagil	0	4	1	1	1	grey
Novokuznetsk	0	1	1	0	0	green
Orenburg	0	3	1	1	1	blue
Penza	1	2	1	1	1	green
Ryazan'	0	1	1	0	0	orange
Saratov	0	1	1	0	0	orange
Stavropol'	0	1	1	0	0	blue
Tomsk	0	2	1	0	0	green
Tula	0	1	1	0	0	red
Tyumen	0	2	1	1	0	blue
Ulan-Ude	1	4	1	0	2	blue
Vladivostok	0	1	0	1	1	blue
Volgograd	1	3	1	0	1	grey
Yaroslavl	1	2	1	1	1	pink
Astrakhan'	0	1	1	0	0	blue
Kemerovo	1	4	1	1	1	red
Khabarovsk	0	4	1	1	0	blue
Krasnodar	1	3	1	0	1	grey
Moscow	0	3	1	0	0	red
Rostov-na-Donu	0	2	1	1	1	blue
Saint Petersburg	0	2	1	0	0	blue
Samara	0	2	1	0	0	blue
Tol'yatti	0	2	1	0	0	grey
Tver	0	2	1	1	0	grey
Voronezh	0	2	1	0	0	blue
Yekaterinburg	0	4	1	1	1	green
Ufa	1	3	1	0	0	green
Perm	1	2	1	1	1	grey
Krasnoyarsk	0	2	0	1	0	blue
Magnitogorsk	0	3	2	2	2	blue

Novosibirsk	0	2	1	1	0	blue
Ulyanovsk	1	4	1	1	1	blue
Omsk	0	3	1	1	1	red
Kazan	0	1	1	0	0	blue
Nizhniy Novgorod	0	2	1	0	0	red
Izhevsk	0	3	1	1	1	grey
Naberezhnyye Chelny	0	1	1	0	0	blue
	10	102	43	24	20	25 blue
						6 green
						2 orange
						1 pink
						10 grey
						6 red

City	Login digital loket
Arkhangel'sk	0
Barnaul	0
Belgorod	0
Bryansk	0
Cheboksary	0
Chelyabinsk	0
Irkutsk	1
Ivanovo	0
Kaliningrad	0
Kirov	0
Kursk	0
Lipetsk	0
Makhachkala	0
Nizhniy Tagil	0
Novokuznetsk	1
Orenburg	1
Penza	0
Ryazan'	1
Saratov	1
Stavropol'	1
Tomsk	0
Tula	0
Tyumen	0
Ulan-Ude	0
Vladivostok	0
Volgograd	0
Yaroslavl	0
Astrakhan'	0
Kemerovo	0
Khabarovsk	0
Krasnodar	0
Moscow	0
Rostov-na-Donu	1
Saint Petersburg	0
Samara	0
Tol'yatti	0
Tver	0
Voronezh	0
Yekaterinburg	0
Ufa	1
Perm	0
Krasnoyarsk	1
Magnitogorsk	1

Novosibirsk	0
Ulyanovsk	0
Omsk	0
Kazan	0
Nizhniy Novgorod	1
Izhevsk	0
Naberezhnyye Chelny	1
	12

	Slideshow	Tiles	Columns	Agenda or News	Drop-down Menus	Photos of people	Photos of Groups of People	Pictures of Art, Leisure and Sport
Arkhangel'sk	0	0	3	n	1	1	1	0
Barnaul	1	0	3	n	1	1	0	0
Belgorod	0	0	2	n	0	1	0	0
Bryansk	1	0	1	n	0	1	1	1
Chelyabinsk	0	1	0	n	1	0	0	0
Irkutsk	0	1	2	na	1	1	1	1
Ivanovo	1	0	3	n	0	1	1	1
Kaliningrad	0	1	3	n	1	1	1	1
Kirov	1	1	3	na	0	1	1	1
Kursk	1	1	2	n	1	1	1	0
Lipetsk	1	1	0	n	1	1	1	1
Makhachkala	1	0	3	n	0	1	1	0
Nizhniy Tagil	1	0	3	n	1	1	1	1
Novokuznetsk	0	1	3	na	1	1	0	0
Orenburg	1	1	3	n	1	1	1	1
Penza	1	0	3	na	1	1	1	0
Ryazan'	1	1	2	n	0	1	1	1
Saratov	1	1	2	na	1	1	1	1
Stavropol'	1	0	3	n	1	1	1	1
Tomsk	1	1	2	n	1	1	1	1
Tula	1	1	2	n	1	1	1	0
Tyumen	0	0	2	n	1	1	1	1
Ulan-Ude	0	1	0	n	1	1	1	1
Vladivostok	1	0	2	na	1	1	1	1
Cheboksary	0	0	1	n	0	1	1	0
Volgograd	0	1	3	n	0	1	1	1
Yaroslavl	1	0	1	n	0	0	0	0
Astrakhan'	0	0	3	n	1	1	1	0
Kemerovo	0	1	1		1	0	0	0
Khabarovsk	0	0	1	n	1	0	0	0
Krasnodar	0	1	0	n	1	1	1	1
Moscow	1	1	0	n	1	1	1	0
Rostov-na-Donu	1	1	0	n	1	1	1	1
Saint Petersburg	1	0	2	n	1	1	1	1
Samara	1	1	0	n	0	1	1	1
Tol'yatti	0	1	0	n	1	1	1	1
Tver	0	1	3	n	0	1	0	0
Voronezh	0	1	0	na	1	1	1	1
Yekaterinburg	1	0	3	n	0	1	1	1
Ufa	1	1	0	na	1	1	1	0
Perm	1	1	0	na	1	1	1	1
Krasnoyarsk	0	0	3	na	0	0	0	0
Magnitogorsk	0	0	3	n	1	1	0	0
Novosibirsk	0	0	2	n	0	1	1	1

Ulyanovsk	1	0	3	n	0	1	0	0
Omsk	1	1	2	n	1	1	1	1
Kazan	1	1	2	n	1	1	1	1
Nizhniy Novgorod	1	1	3	n	1	1	1	1
Izhevsk	0	1	2	a	0	1	1	0
Naberezhnyye Che	1	1	2	n	0	1	1	1
	29	29			33	45	39	29

	Smiling Faces	Landscape	Photo of a mayor	Adapted for mobile	Amount of words on the page
Arkhangel'sk	1	1	1	0	1102
Barnaul	0	1	0	0	685
Belgorod	1	1	1	0	365
Bryansk	1	1	1	0	345
Chelyabinsk	0	1	0	0	1635
Irkutsk	1	1	0	0	674
Ivanovo	1	1	0	0	588
Kaliningrad	1	1	1	0	842
Kirov	0	1	1	0	1787
Kursk	0	1	1	0	240
Lipetsk	1	1	1	0	246
Makhachkala	0	1	1	0	1166
Nizhniy Tagil	0	1	0	1	379
Novokuznetsk	0	0	1	0	723
Orenburg	0	1	1	0	623
Penza	1	1	1	0	560
Ryazan'	1	1	0	1	1532
Saratov	0	1	0	0	538
Stavropol'	0	1	0	1	410
Tomsk	1	1	1	0	165
Tula	0	1	0	0	482
Tyumen	0	1	0	0	1337
Ulan-Ude	0	1	1	0	518
Vladivostok	1	0	0	1	518
Cheboksary	0	1	0	1	3411
Volgograd	0	1	0	0	903
Yaroslavl	0	1	0	0	815
Astrakhan'	0	1	0	0	712
Kemerovo	0	1	0	0	817
Khabarovsk	0	1	0	0	894
Krasnodar	0	1	1	1	539
Moscow	1	1	1	0	575
Rostov-na-Donu	0	1	1	0	520
Saint Petersburg	1	1	0	1	520
Samara	0	1	1	1	770
Tol'yatti	1	0	1	0	711
Tver	0	1	1	0	1296
Voronezh	0	1	1	0	368
Yekaterinburg	0	0	1	0	419
Ufa	1	1	0	1	499
Perm	0	1	0	0	397
Krasnoyarsk	0	1	0	1	638
Magnitogorsk	0	0	1	1	834
Novosibirsk	0	0	0	0	983

Ulyanovsk	0	1	1	0	1069
Omsk	0	1	0	0	1111
Kazan	0	1	1	0	527
Nizhniy Novgorod	0	1	1	0	616
Izhevsk	1	1	1	0	408
Naberezhnyye Che	0	1	0	0	406
	16	44	26	11	38218
					764,36