

Maryna Gudź<sup>1</sup> (ORCID 0000-0002-1454-4987), Piotr Gudź<sup>2</sup> (ORCID 0000-0001-7604-549X)

<sup>1</sup> National University "Zaporizhzhia Polytechnik" (Zaporizhzhia), Ukraine, Institute of Management and Law, Faculty of International Tourism and Economics, Department of Economics and Customs  
64 Zhukovsky Street, Zaporizhzhia, 69063, Ukraine, e-mail: gydzmariya@yahoo.com

<sup>2</sup> Kujawy and Pomorze University in Bydgoszcz, Poland, Institute of Economic Sciences,  
Department of Law, Administration and Economics  
55-57 Toruńska Street, Bydgoszcz 85-023, Poland, e-mail: pitgudz@gmail.com

# Rebranding of industrial region: Theory and provision instruments

## Rebranding regionu przemysłowego: Teoria i instrumenty rezerwowe

### SUMMARY

The formation and use of industrial region rebranding is considered in the context of the theory of institutionalism and practical tools of institutional influence on the administration of the modern region, in particular the concept of rational bureaucracy by Max Weber. Research methods include structural and logical analysis, comparative analysis, branding theories in the system of marketing management. The author's interpretation of the essence and content of rebranding as a tool of territory marketing is based on the analysis of literary sources. The study of the practice of foreign regions and cities rebranding. The results of the study: according to the criteria and characteristics of the image profile of Zaporizhzhia region, its components are determined: business image (economic), status image (political), socio-image (social), geo-image (geographical), cultural-historical image, media image (information), tourism image (tourist and recreational image). The necessity of intensifying the use of the institute of big data (digital data), digital technologies as a tool for the implementation of rebranding measures in order to effectively administer the sphere of social, transport, and environmental safety of the residents is substantiated. Measures for the rebranding of the industrial city of Zaporizhzhia have been proposed for the target group of tourists.

**Keywords:** institutionalism, regional economy, administration, industrial region, rebranding, image profile, digital technologies profiles, digital technologies.

### STRESZCZENIE

Powstanie i wykorzystanie rebrandingu regionów przemysłowych jest rozpatrywane w kontekście teorii instytucjonalizmu i praktycznych narzędzi instytucjonalnego oddziaływania na administrację nowoczesnego regionu, w szczególności koncepcji racjonalnej biurokracji Maxa Webera. Metody badawcze obejmowały analizę strukturalną i logiczną, analizę porównawczą oraz teorie brandingu w systemie zarządzania marketingowego. Autorską interpretację istoty i treści rebrandingu jako narzędzia marketingu terytorialnego podano na podstawie analizy źródeł literackich. Przeprowadzono badanie praktyki rebrandingu zagranicznych regionów i miast. W rezultacie zgodnie z kryteriami i charakterystyką profilu wizerunkowego regionu zaporoskiego określono jego składowe: wizerunek biznesowy (ekonomiczny), wizerunek statusowy (polityczny), społeczny, geograficzny, kulturalno-historyczny, medialny (informacja), turystyczny (turystyczno-rekreacyjny). Konieczność intensyfikacji wykorzystania instytucji big data (danych cyfrowych), zastosowanie technologii cyfrowych jako narzędzia realizacji działań rebrandingowych i efektywne zarządzanie sferą bezpieczeństwa społecznego, komunikacyjnego i środowiskowego mieszkańców są uzasadnione. Dla docelowej grupy turystów zaproponowano działania na rzecz rebrandingu przemysłowych miast regionu zaporoskiego.

**Słowa kluczowe:** instytucjonalizm, gospodarka regionalna, administracja, region przemysłowy, rebranding, profil wizerunkowy, technologie cyfrowe, profile, digital technologies.

## 1. MODERN VECTOR OF INSTITUTIONAL RESEARCH

In fact, economics has built its concepts around ideal models of market equilibrium from the 21st century, as it is indicated in the studies of numerous Nobel Prize winners. The active use of digital technologies, revolutionary technological changes in the field of transmission and storage of information, telecommunication breakthroughs of communications stimulate scientists to discover the theoretical constructions of the new, post-information economy. It is based on the most of J. A. Schumpeter's theories of innovative economics, according to which "creative destruction" is determined by the driving force of change and progress.

Modern theory of economic growth focuses mainly on two channels of stimulating growth through the costs of research and development on the main component of knowledge innovation. The first channel is the action on available goods and services, and the second is the action on overcoming the resistance of the knowledge economy. V.V. Bilotserkivets is loyal to a new post-industrial economy, the defining feature of which is avant-garde in nature with a concentration of efforts, primarily on avant-garde process innovations and development on their basis of a wide range of diversified new economic benefits, the use of information and communication technologies (ICT), abrupt reduction of the life cycle of new economic goods with its completion to the loss of their consumer properties (Bilotserkivets, 2015, p. 15).

### 1.1. Development as a process of organizational change

Karla Goff and Joseph Stiglitz believe that in modern conditions, even investment in industry or production cannot have a significant impact on economic growth. As well as eliminating government distortions is desirable, but it is neither necessary nor a sufficient factor for sustainable growth. Instead, different production functions are becoming more organized in different ways. That is, development is no longer seen as a process of capital accumulation, but, above all, as a process of organizational change. Therefore, research should focus on information economics, theory of coordination problems and institutional economics (Hoff, & Stiglitz, 2016).

It seems that the modern economic ideology of institutionalism can be effectively implemented at the level of regional and local economy as a platform for reducing the share of material production and increasing the value of new economic activities such as environmental protection, resource efficiency, research, culture, care services (Maxton & Randers, 2017, p.150). Such a mechanism lays the preconditions for expanding the boundaries of inclusion, diversifying the forms of involvement of various social groups in active social and economic activities through the realization of their economic interests through economic behavior.

### 1.2. Weber's concept of human development

M. Weber, the representative classic of German historical school, in particular, explained the development of social and

economic processes and phenomena by the influence of personal motives of economic behavior. According to Weber, the emergence of rational economic behavior based on entrepreneurship, thrift, moderation, modesty, decency, the pursuit of success on the basis of rational use of capital was made possible by Protestantism (especially Calvinism), which proclaimed the virtuous ascetic way of life. He concluded that at a certain stage of development of social relations, the combination of features of spiritual life and material interest of the "economic man" led to the emergence of a new motivation for economic behavior, based on the principles of rationalism:

- positive moral sanctioning of savings and accumulation of capital;
- ascetic lifestyle;
- the desire to obtain legal income as a manifestation of high professionalism;
- specific traits of human character (diligence, thrift, diligence, reliability, punctuality, honesty, decency, etc.) (Weber, 2016; 2018).

## 2. SCIENTIFIC BASES OF RESEARCH OF REBRANDING OF THE TERRITORY

Institutionally, the region is a complex socio-economic and organizational-managerial object, determined by its structure, goals of formation and development, mediated by the system of ties and relations that form the mechanism of its development. The capacity of large cities for regional and global development is growing in the region's economy. For example, New York is 17 times richer than the whole of Ukraine, having 1.5 trillion dollars of gross regional product against a paltry of \$ 90 billion of GDP of Ukraine (Zhmerenetskyi, 2017). In the theory and practice of territorial governance as a direction of regional economy there is increasingly common approach, according to which the region is seen as a specific type of product that requires professional solutions for production (production), distribution (services, places, investment sites), exchange (experience, successful practice, trade) and sales (favorable living and recreation environment). That is, it is possible to make a generalization that forms a public demand for the development of spatial development policy, which should be aimed at strengthening the "competitive advantage" of the territory.

Such tools as information policy, increase of degree of identification of citizens with the territory of the residence are successfully used by foreign practice of regional and municipal management for its realization; rethinking and popularizing urban symbols, branding and rebranding of the city, etc. This is extremely important for old industrial cities, which are losing their industrial face in the system of global economy and competition, and need for new rebranding solutions.

### 2.1. From brand rebranding to territory rebranding: a research hypothesis

On the other hand, it is important to focus on the methodology and the choice of tools to ensure the rebranding of the

territory. In industrial cities, such tools are the modernization of industrial enterprises, increasing their competitiveness, rebranding of manufactured brands. Therefore, the substantiation of mutual influence is important and relevant, and interaction of means of management and administration of territorial development taking into account the branch component.

Scientific and theoretical study of research issues is based on the methods of structural and logical analysis, comparative analysis, branding theory in the system of marketing management methods. The analysis of the essence of the brand of the region and the city is reflected in the scientific works of domestic and foreign scientists: *I. M. Budnikovich (2012)*, *D. Vizghalov (2009)*, *I. S. Vazhenina (2006)*, *M. V. Gudz (2020)*, *P. V. Gudz (2019)*, *O. V. Zherdeva (2006)*, *Ch. Lendri (2005)*, *A. P. Pankrukhin (2012)*, *O. I. Soskin (2011)*. The authors from the standpoint of marketing territories cover technological, methodological tools for rebranding English, Russian and Ukrainian cities. At the same time, scientists emphasize that the content, forms and methods of rebranding are a new sub-branch of marketing science and regional economy, which requires constant scientific substantiation of the conceptual apparatus, methods, applied recommendations for managers of municipal authorities.

The hypothesis of the study is that the definition of theoretical approaches to the development and implementation of rebranding of an industrial city is a factor in the competitiveness of the city, allowing to attract investment, human capital, and digital innovation and to improve the quality of life.

### 3. ANALYTICAL STUDY OF THE PRECONDITIONS FOR REBRANDING THE TERRITORY

The development of the methodology of spatial administration is reflected in the concepts of the life cycle of industrial cities, factories as areas for a favorable environment for business and residence of residents. It is possible to enter the era of fierce competition between regions and cities for budget and business investments, information flows and digital technologies, professional competencies of human capital: talented teachers, doctors, managers and consumers-tourists. There will be a growing demand for the quality of promotion of territorial and product brands that identify regional and local producers, a specific locality with its unique properties.

The theoretical foundations of urban development stem from the theory of competitive advantages, factors of production by M. Porter, P. Krugman and other scientists. In particular, Nobel Laureate in Economics Paul Krugman systematized the competitive advantages of territories, identifying two groups of factors:

a) the factors of "first nature" include the provision of natural resources that are in demand by the market (mineral, land, etc.), as well as the geographical location of the territories, including the border position on global trade routes, which reduces transport costs and facilitates the transmis-

sion of innovations. These benefits exist outside of human activity;

b) the factors of "second nature" include the benefits created by the activities of people and society: the agglomeration effect (high population density in cities, which gives economies of scale); human capital (education, health, work motivation, mobility and adaptability of the population); institutional capital, which contributes to the improvement of the investment climate, mobility of the population, the spread of innovation, etc., and also a factor is the development of infrastructure that reduces economic distances (Krugman, Obstfeld, & Melitz, 2014).

Based on the study of literature on marketing and regional economy, it is established that the brand of the city is the sum of all tangible and intangible characteristics of the city, the emotions caused by this city, as well as the reputation and the way of advertising the city. The problem of defining a brand is that, for comparison: unlike a product, a corporate brand interacts with more than 10 different target groups, which put forward completely different evaluation criteria for this brand (Shevchyk, 2013). Typically, the city's brand should focus on at least 5-7 leading stakeholders in the city, and it significantly expands the target audience to the perception of the integrated brand as their own. Rebranding in the marketing concept of the product life cycle is considered by scientists as another, higher, stage of development of the city brand, a kind of "second breath" of the development of its image, face. In its content, it is a marketing tool for changing the idea, the uniqueness of the brand, restyling the visual identifiers of the brand: restyling the logo, corporate style, symbols and other attributes of the brand, changing the target audience of the city.

At the same time, the restyling is a slight change in the external and internal image of the city.

The practice of using rebranding, as the experience of European industrial cities shows, can be successful and become the development strategy that gives the city as an organization a new stage of the life cycle instead of the prospect of decline. Therefore, many cities, especially industrial, had to literally reinvent themselves. The example of the British city of Birmingham, which has evolved from a depressed industrial center to a financial and entertainment center with a predominantly service sector over the past 30 years, is one of many testimonies to successful rebranding practices.

Rebranding helps to solve the following tasks:

- to break the established stereotypes of identification of the city at the mention;
- to offer new destinations, which allows to stand out from the total number of equally typical cities;
- to recreate in the minds of consumers an attractive image that inspires confidence;
- to focus on positive emotions associated with the city;
- to form a new group of regular consumers (tourists, investors) who associate their way of life with the new brand (brand supporters).

The successful rebranding of the old industrial city of Zaporizhia requires the following set of actions: rethinking and popularizing urban symbols, involving the local community to generate branding ideas, partnering with local advertising and design firms to promote urban cultural brands and much more.

### 3.1. Foreign practice of rebranding cities

The concept of areas of work should also include “state assistance in promoting the brands of Ukrainian cities and regions.” This primarily means the promotion of regional goods and services, but recently marketing experts are inclined to believe that it is Ukrainian cities with a renewed face – utilities (roads, utilities), service (hospitality industry), recreational (sports, health), information (telecommunications, free mobile communication areas) infrastructure, and not their products are the best brands in the country. There are several arguments in favor of this belief:

1. The brand of the city is always diverse, and this is its advantage. The city is its outstanding citizens and unique history, architectural appearance and local goods.
2. The city is the most stable of all types of brands; it is not prone to political and economic risks. The country's brand is associated with the government's brand, so it is subject to change due to the political situation. Corporate brands, as a rule, age faster, are more expensive and, most importantly, with great difficulty gain the status of national.
3. Branding and rebranding of cities is a nationwide project that guarantees strong grassroots support. It will be positively perceived by local and regional authorities. Will it be supported by local businesses, as any corporate brand has a place of production? The broadest segments of the population will be involved in promoting the idea within the right organization, which will ensure its civic legitimacy.
4. The development of the idea of “cities – national brands” will solve several important tasks for the state. In particular, it will confirm that Ukraine is not only the city of Kyiv, debunking the stereotype established in the world.

The city's brand is difficult to create, but also difficult to destroy. For example, the brand of Los Angeles, New York and Las Vegas in the world is brighter and more positive than the image of the United States as a whole. France is not without Paris. In Ukraine, there are brands of cities that work for the benefit of the whole country. Alushta in the Crimea, which is famous climatic resort, has 4 wineries that produce more than 20 popular brands of wines; Bukovel in the Ivano-Frankivsk region, ski resort of Ukraine, which due to the developed infrastructure, good condition of the slopes, is corresponded to the best ski resorts in Europe and many others.

Stockholm, Seoul and Tokyo are the cities that have become synonymous with the development of the territory as a complex social and economic, cultural and technological

progress, which is reflected in a favorable environment for living and working, with high living standards, unique architecture and modern design. All of this becomes possible on the basis of extensive use of modern technologies, creative solutions, and they are the result of attracting creative individuals in the young spheres of the economy – information, communication, service and more. In this context, it is exciting to build in Dubai the world's first office building based on industrial printing technologies and parts of the house in 3D format.

Moreover, we can't but appreciate the technological and creative side of the rebranding of the modern city, because rebranding is a consequence of the introduction of positioning, and this, as experts say, is a long-term project based on a strategic approach.

### 3.2. Human potential in the implementation of the rebranding policy strategy

The strategy is based on effective personnel, realization of human potential. The economic life, which we witness and participate in, indicates deep metastases in the management of economic development of the regions and the consequences of management. Statistical trends show the deformation of the structure of the economy and the decline in the volume and quality of economic development: Gross Value Added in 1991 was 36% of GDP, and in 2001 it was 27.1%, in 2018 it was 24.8% (Ukrstat, 2019).

In 1991 mechanical engineering and metalworking in the total volume of sold industrial products was 26.4. In 2011 it was 11.6%. In 2017 it was 15.7 and in light industry, respectively, it was 12.3%, 0.7 %, 1.0%. The share of high-tech products is (5 and 6 technological modes) 4.1% (Ukrstat, 2012). The situation is especially threatening in the old industrial regions of Donbass and Dnieper, where the depreciation of fixed assets in the real sector is a threatening limit, beyond which there is an economic collapse.

In these circumstances, the economic strategy of the state and regions for at least the next 10–15 years is relevant, which should be based on an understanding of world trends, namely structural changes in total capital in the economies of leading countries to join within the free Ukraine aspires to the EU market (Table 1).

Modern research indicates the dynamic processes of social reproduction: the growing tendency of the weight of human capital in relation to physical capital in the overall structure of total capital. The analysis of the data in Table 1 represents the preconditions for the creation of a new model of economic development, which should be formed

Table 1. Structural change in total capital in Western countries, % of the total

| Elements of total capital | 1800 p. | 1860 p. | 1913 p. | 1950 p. | 1973 p. | 1990 p. | 2020* |
|---------------------------|---------|---------|---------|---------|---------|---------|-------|
| Physical capital          | 78–80   | 77–79   | 67–69   | 52–53   | 43–44   | 31–33   | 19–20 |
| Human capital             | 20–22   | 21–23   | 31–33   | 47–48   | 56–57   | 67–69   | 80–81 |

\* own calculations based on sources (Lapidus, 2018; Drucker, 2004; Shchetynyn, 2001, p. 42).

on ethical norms and environmental standards by investing in renewable natural capital, including man and reducing the amount of non-renewable resource flow. The main task of the ecological theory of greening is to develop economic tools such as a waterline, which would not allow the cargo of the economy to flood our ship – the ecosystem.

If we continue to explain these trends in the growing role of human resources and services, Peter Drucker, one of the world's management gurus, rightly believes that the leading fixed capital today is the knowledge of each individual worker, because mental workers have their means of production,

i.e. knowledge as absolutely portable and extremely capacious type of fixed capital. That is, increasing investment in the student and the working person means investments that not only contribute to the accumulation of this "fixed capital", but they also form the strategic potential of the region's economy, the country. Of course, investment processes should be in the nature of permanent investment on an expanded basis, reflecting the expanded type of social reproduction.

The change of worldview in the use of human potential, including for the reconstruction of the urban environment, rebranding of cities, etc. is figuratively presented in the National Strategy of the Republic of

South Korea to create a creative class for 2015–2020: "Every engineer must become an artist!"

The team of Moscow and Kyiv professors points out the peculiarity of the creation of such personnel with new qualities in a joint monograph, namely: a) the duration of reproductive turnover in 12–20 years, which is five times longer than the duration of physical capital turnover; b) a higher level of risk and uncertainty; c) integrated socio-economic effect; d) the dependence of investment return on human life expectancy; also due to the volume and forms of investment, on the one hand, the historical, mental, national and cultural traditions of the people to which they belong, and on the other hand, the individual interests of man, his worldview, responsibilities and general level of culture (Lukianenko, 2013, p. 119).

#### 4. SUBSTANTIATION OF THE MAIN IMAGE PROFILES OF ZAPORIZHIA REGION

According to the results of the study, the main image profiles of Zaporizhia region were identified: business image (economic), status image (political), socio-image (social), geo-image (geographical), cultural-historical image, media image (information), and tourism image: tourist and recreational image, namely (Table 2). Considering data of Table 2, it follows that the consolidated work of the territorial community of the region on the implementa-

Table 2. Characteristics of the main image profiles of the Zaporizhzhia

| Image of profile              | Image profile criteria  | Characteristics of the image profile   |
|-------------------------------|---|--|
| 1                             | 2   | 3  |
| Business image (economic)     | Economic potential<br>Investment climate<br>Business activity                       | Established, require modernization. The old industrial and agricultural region with the predominant development of metallurgy, mechanical engineering, energy, has great potential for the growth of the tourism and recreation industry.<br>With the lost image of the region as a territory with competitive metallurgy and automotive, the city is economically positioned as a center of engine building for civil and military aircraft, a powerful center for the production of special steels for various purposes. |
| Status image (political)      | Official status<br>Efficiency of regional management                                | Unappreciated. Low level of use of regional attributes.<br>The coat of arms of the Zaporozhye region is depicted on a raspberry cloth, which testifies to the historical roots of the Cossacks, free-thinking and tourist attractiveness of the region.<br>Berdyansk is the first city in Ukraine to implement an ISO quality management system for municipal management, administrative and organizational services.  |
| Socio-image (social)          | Regional social structure and social processes                                      | Low social activity of society, slow social processes. Integration of the multinational regional society (the stage of the Cossacks, the stage of development of the Wild Field by European industrialists, the stage of socialist constructions – architectural accounting of the socialist cities of Zaporizhia). The image of the proletarian city.   |
| Geoimage (geographical)       | Development of spatial potential  | It is restrained by low activity of the European integration of the country and development of infrastructure of air transport, sea passenger transport.<br>Region with high transit potential (north-south: Moscow – Simferopol, west-east: Reni – Rostov). Border and sea region. Territories that have a variety of landscapes and natural resources: lakes, reservoirs, the Dnieper and small rivers, which are home to many species of fish, reserves of medicinal natural resources.                                 |
| Cultural and historical image | Cultural and historical potential   | They are under development and activation. Center of the Ukrainian Cossacks. Rich cultural, ethnic and historical heritage (more than two thousand monuments of national cultures of Bulgarians, Mennonite Germans, Czechs, Greeks, Jews, Ukrainians, Russians, Armenians, Poles, Tatars, Nogai nomads)  |
| Media image (information)     | The level of development of information technologies and informatization of society | Lack of information of urban space. There is an intellectual potential for the development of information centers (engineering, laboratories, industrial clusters, telecommunications). Prospects for positioning the regional center as an exhibition and fair center for military-industrial development.  |
| Tourimage (tourist)           | Tourist potential   | Unrealized tourist (island of Khortytsia, Cossacks) and recreational potential of tourism (more than 100 km of the coast of the Sea of Azov are undeveloped recreational lands). Great opportunities for the development of various types of tourism (excursion, resort (year-round), industrial, archaeological, rural)   |

tion of image profiles becomes the most important factor in the effective development of the territory. The tourist infrastructure of Zaporizhia region in terms of image is extremely fragmented and not connected by a common brand, which can be overcome by the introduction of permanent elements in the diversity of urban communications.

Information technologies and means of information processing can become tools of administration in the process of realization of the rebranding program in the conditions of digital economy. The most common in this context is the Smart-City platform, which considers the city as a complex system of interacting subsystems (urban development planning (urban planning), transport, security, health care, etc.), the interaction of which is based on widespread use of IT and management municipal services in the on-line mode (Kapitsa, 2016). In some studies, it is also called the concept of a smart city (Sergeeva, 2012).

### 5. DIGITAL TECHNOLOGIES AS A TOOL FOR IMPLEMENTING REBRANDING OF THE TERRITORY

At the stage of introduction of rebranding and other technologies of regional management the role of public administration and administrative influences grows. The ideal mechanism is the organization of rational bureaucracy in the system of regional management, which is characterized by:

- efficiency, which is achieved through a clear division of responsibilities between members of the organization, which allows the use of highly qualified professionals in management positions;
- strict hierarchy of power, which allows senior officials to monitor the performance of tasks by subordinates;
- formally established and clearly fixed system of rules that ensure uniformity of management activities and the application of general instructions to individual cases in the shortest possible time;
- impersonality of administrative activity and emotional neutrality of relations arising between the functionaries of the organization, where everyone should act not as an individual but as a bearer of social power, the personification of a certain position (Weber, 2018). The concept of rational bureaucracy fits perfectly into the ideology of public administration on the basis of big data, as they contribute to objectivity, transparency, and cost-effectiveness of decision-making.

At the same time, no technology can exclude the factor of influencing the personal economic interests of officials responsible for making decisions of a systemic nature.

According to the research company ABI Research, in 2016, the world's cities will spend a total of \$ 39.5 billion on smart technology (Umnyiy gorod buduschego, 2015). For example, during the construction of the Korean city of Songdo, Cisco connected to the network every square inch, introducing sensors in city roads, streets and buildings. Each sensor sends a continuous stream of data to the central control unit. This

node will collect and analyze data on the condition of buildings, roads and road situations, temperature outside and inside, energy needs. The infrastructure of the Korean city of Songdo is based on network technologies that unite all operating systems into a single whole. A unique waste disposal system has been developed for Songdo: pneumatic waste pipes are installed in the houses, which "suck out" household waste and sort it. In the future, it is planned that the waste will be delivered directly to the methane plant, which produces fuel for engines.

A number of innovative solutions are also being implemented in the city to solve the transport problem. For example, underground parking (95% of parking in Songdo is underground) or electronic road signs, automatically change depending on the density of traffic and passenger traffic (Umnyiy gorod buduschego – Songdo, 2015). In addition, electric cars and cars with hydrogen engines will be connected to the single city network.

- IT – online – for city management (current mode) is:
- adequate response to uncritically out-of-synchronization of urban subsystems, or load on any of them;
- operational emergency management;
- controlling the "adequacy" of city services;
- the possibility of effective integration of initiatives is affected simultaneously by different subsystems of the urban environment;

connectivity support (Internet of Things – IoT) – interaction and coordination of objects, people, systems on the scale of the entire city infrastructure.

The IT tool – online – for city management is an information technology management platform based on data – "data-driven city" (DDC). This is largely due to the constant change in the technological landscape, the transformation of cities, the avalanche of volumes and diversity of data that can be used within the DDC concept. The approach to urban space architecture management based on data can be represented as follows (Fig. 1).

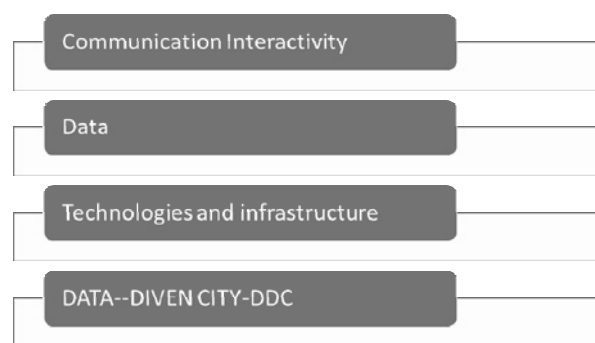


Fig. 1 Elements of the concept of administration of urban development architecture based on data (Upravlenie prostranstvenno-ekonomicheskim razvitiem, 2016)

For example, the city's environmental management is implemented through the control of air pollution in Sydney by the National ICT Center of Australia (NICTA) in conjunction



with the New South Wales Department of the Environment (NSW EPA). Together, they launched a pilot project that uses environmental information collected from installed sensors in the Hunter Valley area. A total of 14 special sensors were installed to collect data on the state of the atmosphere.

The use of big data analysis to determine inspection schedules can be used in various areas of urban life, from health to utilities and security, and has great potential for development given the growth of cities and the amount of data they generate. The best horizontal information platforms are located in Barcelona in Sentilo, City OS. City OS is an open data system that combines and processes all information collected from municipal sources (population register, permits, etc.), public administration systems (mobility, energy, noise level), business environment, and other government institutions (schools, hospitals, cultural institutions), as well as from various sensors and cameras.

The integrated Sentilo system, which translates from Esperanto as «sensor», is also a data source for City OS. Sentilo is an open city platform, that combines all sensors installed in the city. Data is collected from them (Table 3).

Table 3. The best practices in the use of spatial management technologies in the world's leading cities in accordance with the DDC concept

| Technologies  | Forms  |
|---|--|
| Planning of districts, streets, city infrastructure | Collection of information on relocation of residents for urban infrastructure planning |
| Crowdsourcing platforms                             | Involvement of residents in solving city issues  |
| Definition of control priorities                    | Inspection planning of municipal facilities, based on big data analysis                |
| Verification of beneficiaries                       | Analysis of large data for verification of beneficiaries                               |

As part of the transition to city management in the form of the DDC concept, it is planned to expand the city's Wi-Fi network: currently 590 points have been installed, including 220 parks. By the end of 2020, it is planned to provide Wi-Fi network to all buses and subways and eventually bring the number of new points of the city Wi-Fi network to 1,520.

In Zaporizhzhia, the city authorities presented the "Comfortable City" strategy during the third All-Ukrainian IT Conference "IT Forum". The strategy includes a number of major projects related to various spheres of urban life. Among them are the projects "Safe City", "Municipal Transport", "Electronic Document Management" (Ot elektronnoho bileta..., 2016). Currently, more than 6,000 cameras and video surveillance systems worth UAH 600 million are equipped with monitoring facilities. As world practice shows, the installation of cameras on the streets leads to a reduction in crime and accidents by 25–30% (Kulkova, n.d.). The project uses an interactive map of the city – display the scheme of the

controlled area with the location of the cameras. It is an ability to move from one observation site to another quickly.

Moreover, it is the convenience of using several monitors at one observation post. The second monitor can display an enlarged image of the selected camera, alarm cameras (mode of operation of the motion detector), an interactive map. When receiving information from stationary cameras, the operator can almost instantly direct the rotating camera to the site or display the image on a separate monitor, without losing control of the situation as a whole.

Thus, digital technologies are implemented not for the sake of technology, but for the purpose of effective data management in the field of social, transport, environmental, etc., in spatial strategy to improve the quality of planning, control, operational business processes, increase the comfort of urban living environment and the activities of community residents and guests.

### 5.1. Communicative technologies for the implementation of rebranding of the territory

At the same time, Zaporizhzhia is experiencing a number of problems associated with the weak development and use of modern communication technologies. In Ukraine, the most effective is the policy of rebranding the cities of Lviv and Kharkiv. From the point of view of tourist branding, Zaporizhzhia is the city with everything: developed infrastructure, sights, rich history, and architecture. The city enjoys a stable interest of both foreign and domestic tourists.

It should be noted that the Zaporizhzhia brand, like other Ukrainian brands, is rent-oriented, i.e. focused on a kind of historical "rent", regularly obtained from existing monuments and history, which does not require special creative work. Tourist buses, excursion programs and routes, taxis, hotels, uniforms of guides and more stuff should be solved if not in a single style, then united by a common brand solution (for example, in France, the brand "Cote d'Azur" represents a single product style in tourist services). Currently in Zaporizhzhia, all these elements are scattered, chaotic, accidental and devoid of recognition.

The tourist brand of Zaporizhzhia can be significantly strengthened, made more holistic and recognizable. To do this, you need to solve the problem of brand communications. The next direction of the rebranding policy of Zaporizhzhia should be a comprehensive work with navigation and information systems of the city, which should also be addressed in a single brand style. An example is the transport system of London, which is based on the traditional symbol of the London Underground and unifies all transport networks into a single visual system, with the possibility of its further expansion. This is a valid example of the practical implementation of comprehensive strategies for creating new global communications, through which you can better develop municipal structures.

The reformation of social dormitories and industrial facilities located there with their architecture is carried out with

the help of modern art and cultural projects, when old and dilapidated factory buildings are given over to centers and museums of modern art. This practice has long been widespread in Europe and is bearing fruit: the factory neighborhood is becoming a place where cultural life is concentrated, international events and events are held that interest people.

## 6. CONCLUSIONS AND RECOMMENDATIONS

It is generalized, that Max Weber's concept of rational bureaucracy perfectly fits to the ideology of public administration on the basis of big data, as they contribute to objectivity, transparency, cost-effectiveness of decision-making. The rebranding of the region is defined as the process of creating a new brand mission, due to the need to change the attitude of target audiences or perception of cultural, economic, social, tourist attractiveness of the territory.

Research methods include structural and logical analysis, comparative analysis, branding theories in the system of marketing management, and the tool for implementing rebranding policy such as information technology management platform based on data – “data-driven city” (DDC). According to the results of the study, the main image profiles of Zaporizhzhia region were identified: business image (economic), status image (political), socio-image (social), geo-image (geographical), cultural-historical image, media image (information), tourism image (tourist and recreational image).

Recommendations for regional management

According to the results of the study, practical recommendations for the introduction of rebranding of the industrial region were identified:

- transition from rent-forming brands to creative ones, which are based on artistic, culturological, creative approaches; positioning of the territory in need of reproduction and restoration, resocialization of dormitory and production (factory) areas of the regional center;
- development of branding of the island of Khortytsia as a tourist and recreational center of national and international importance.

The direction of further research should be the organizational, economic and feasibility study of projects to create an updated brand of the city on the basis of these areas of branding.

## REFERENCES

- Bilotserkivets, V. (2015). Nova ekonomika: vyklyky ta zasady funktsionuvannya v umovakh industrialnoho suspilstva. *Akademichnyi ohiad*, 1 (42), 11–16.
- Budnikavych, I. (2012). Formuvannya stratehii munitsypalnoho rozvytku: marketynhovyi pidkhyd *Naukovyi visnyk Chernivetskoho universytetu: Zb-k. nauk. prats.* (Ekonomika). 592. 21–29. Chernivtsi: ChNU.
- Druker, P. (2004). *Zadachi menedzhmenta v XXI veke*. Moskva: Izd. dom Vilyams.
- Gudz, P. & Dawydenko, I. ets. (2019). Support system of solutions for planning sales activities in the tourism industry. *Internacional Journal of Engineering and Advanced Technology (IJEAT)*, 8, 6, 3979–3983. DOI: 10.35940/ijeat.F9082.088619 Retrieved April 17, 2020 from: <https://www.ijeat.org/wp-content/uploads/papers/v8i6/F9082088619.pdf>.
- Gudz, P. & Gudz, M. ets. (2020) *Scientific approaches for planning the architecture for urban economic space*. (Onyshchenko V., Mammadova G., Sivitska S., Gasimov A.). *Proceedings of the 2nd International Conference on Building Innovations. ICBi 2019. Lecture Notes in Civil Engineering*, 73. Springer, Cham. Retrieved June 10, 2020 from: [https://link.springer.com/chapter/10.1007%2F978-3-030-42939-3\\_57](https://link.springer.com/chapter/10.1007%2F978-3-030-42939-3_57).
- Hoff, K. (2016). Behavioral Economics and Social Exclusion: Can Interventions Overcome Prejudice? In book: *Inequality and Growth: Patterns and Policy* (pp.172–200). Retrieved June 20, 2020 from: [https://www.researchgate.net/publication/310572536\\_Behavioral\\_Economics\\_and\\_Social\\_Exclusion\\_Can\\_Interventions\\_Overcome\\_Prejudice](https://www.researchgate.net/publication/310572536_Behavioral_Economics_and_Social_Exclusion_Can_Interventions_Overcome_Prejudice)
- Hoff, K. & Stiglitz, J. (2016). Striving for balance in economics: Theoretical perspectives on the social determinants of behavior. *Journal of Economic Behavior and Organization*, 126, Part B, 25–57.
- Kapitsa, S. Istoriya desyati milliardov. Retrieved May 03, 2020 from: <http://spb.media/text/sergey-kapica-istoriya-desyati-milliardov>.
- Krugman, P. (2014). *Obstfeld Maurice International Economics: Theory and Policy*. Global Edition (Inglese) Copertina flessibile. 3 february.
- Kulkova, A. V Zaporozhe uspesno vnedryatsya sistema Smart City. Retrieved Maj 29, 2020 from: <http://iz.com.ua/zaporoje/v-zaporozh-e-na-mezhdunarodnom-forume-rasskazali-o-osobennostyah-smart-city>.
- Lapidus, L. (2018). *Tsifrovaya ekonomika: upravlenie elektronnyim biznesom i elektronnoy kommersiyey: monografiya*. Moskva: INFRA.
- Lendri, Ch. (2005). *Kreativnyi gorod*. Per. s angl. Moskva: Izdatelskiy dom «Klassika-XXI».
- Lukianenko, D. & Poruchnik, A. & Kolesov, V. *Globalnoe ekonomicheskoe razvitiye: tendentsii, assimetrii, regulirovaniye: monografiya*. (2013). Kiev: Vydavnicтво Ekonomichnyj universitet im. Hetmana V. Makston, H., & Randers, Y. (2017). *U poshukakh dobrobutu. Keruvannia ekonomichnym rozvytkom dlia zmenshennia bezrobittia, nerivnosti ta zmin klimatu*. Kiev: Pabulum.
- Ot elektronnoho bileta do elektronnoho zayavleniya: v Zaporozhe prezentovali strategiyu «Komfortnyi gorod». Retrieved Maj 29, 2020 from: <http://panoptikon.org/articles/85137-ot-elektronnoho-bileta-do-elektronnoho-zajavleniya-v.html>.
- Pankruhin, A. (2016). *Munitsipalnoye upravleniye: marketing territoriy*. 3 izd. Moskva: Logos.
- Schetinin, V. (2001). *Chelovecheskiy kapital i neodnorodnost ego traktovki. Mezhdunarodnaya ekonomika i mezhdunarodnyye otnosheniya*, 12, 40–46.
- Sergeeva, T. (2012). *Umnyi gorod kak tendentsiya. Upravleniye gorodom: teoriya i praktika*. 1 (4). 46–51.
- Shevchik, T. (2013). Arthesia: Moskve nuzhno poumnet, a ne pribavlyat kvadratnyye kilometry. *Gazeta*, June 07. Retrieved May 30, 2020 from <http://rbcdaily.ru/world/562949987267481>.
- Soskin, O. (2011). *Brendynh mist: dosvid krain Vyshehradskoi hrupy dlia Ukrainy*. Kiev: Vydavnicтво Instytut transformatsii suspilstva.
- Ukrstat. *Sotsialno-ekonomichnyi rozvytok Ukrainy za sichen-kviten 2019 r.* (2019). Kiev: Derzhavna sluzhba statystyky Ukrainy. Retrieved Maj 29, 2020 from: [http://www.ukrstat.gov.ua/operativ/infografika/2019/soes/soes\\_04\\_2019.pdf](http://www.ukrstat.gov.ua/operativ/infografika/2019/soes/soes_04_2019.pdf).
- Ukrstat. *Statystychnyi shchorichnyk Ukrainy za 2011 rik.* (2012). Stat. zbiryk. Kiev: Avhust Treid.
- Umnyi gorod buduschego – Songdo. (2015). Retrieved Maj 29, 2020 from: <http://www.biowatt.com.ua/trends/umnyi-gorod-budush-hego-songdo-yuzhnaya-koreya>.
- Upravleniye prostranstvenno-ekonomicheskimi razvitiem: skrytiye resursy goroda (2016). Moskva: Tsentr gorodskih issledovaniy biznes-shkolyi «Skolkovo-2016». Skolkovo.
- Vazhenina, I. & Vazhenin, S. (2006). *Imidzh kak konkurentnyi resurs regiona. Region: ekonomika i sotsiologiya*, 4, 72–84.
- Vizghalov, D. (2009). *Glavnyi resurs Moskvy – kultura. Nezavisimaya gazeta*, 15, 12–15.
- Veber, M. (2016). *Hozyaystvo i obschestvo*. Per. s nem. L.Ionin, V. Bruptsehovoy, I. Sudarikov. Moskva: Vysshaya shkola ekonomiki.
- Veber, M. (2018). *Protestantska etyka i dukh kapitalizmu*. Kiev: Nash Format.
- Zherdeva, O. (2006). *Metody i priemy marketingovogo analiza territorii. Marketing i marketingovyie issledovaniya*, (62), 110–119.
- Zherdeva, O. (2006). *Rol marketinga v identifikatsii territoriy. Marketing v Rossii i za rubezhom*. 2(52). 120–126.
- Zhmerenskiy, O. (2017). *Hlobalni ekonomichni trendy ta Ukraina bez maibutnoho. Ukrainska Pravda*, 17, 5–8.