Analecta Technica Szegedinensia
Vol. 14, No. 1 ISSN 2064-7964 2020

HISTORICAL LANDMARKS OF THE MANAGEMENT OF MAJOR URBAN LOGISTICS PROJECTS IN IMPERIAL TIMISOARA

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ABSTRACT

This article follows a holistic-complete approach[1] to the management of the major urban logistics projects of Imperial Timisoara. The research and studies conducted so far have been based on unilateral approaches: either exclusively historical or engineering. Research of such projects requires multi-scientific and multidisciplinary treatment angles. Our investigative optics is a managerial-holistic-complete one, which aims to integrate, besides the historical, technical / technological aspects, the architectural aspects, along with the multicultural, socio-human, ethnic, anthropological. In this sense, the strategic references of urban essence are related to the potential of Timisoara city and its ability to carry out such projects, in the contexts specific to the different periods of its logistic development. The multitude of researched data sources, information and documents enables us to innovate the analytical approach of major urban logistics projects, using the logic of public management, in a holistic-complete, integrative vision. This research is part of a comprehensive study on general urban public management. We are convinced that such research, in such a way, will contribute substantially to a deeper understanding of Timisoara's contribution to its own Europeanization and the region it was part of, the Imperial Historical Banat.

Keywords: urban logistics, urban public management, holistic approach, historical logistics projects, historical Timisoara

1. INTRODUCTION

Generally speaking, people certainly have been influencing and will influence the process of change, transformation and innovation in a society and implicitly in its various fields. However, we can distinguish different levels of involvement in these processes, so we highlight the important role of some society members whose contribution is significantly more to the development of their society and, implicitly, of the physical space, the city or town, in which the society exists. Thus, we described the indissoluble link between physics and metaphysics in the process of urban development, namely between humans and resources and their relationship. We believe that people, through attitudes, levels of involvement and specific administration-management modalities, can create a difference between the level of development of two societies and the urban space in which they live.

2. MATERIALS AND METHODS

This research aims at creating a record or collection of the main historical events in the area of urban logistics projects management. The research methodology used in this study is a combination between the historical and managerial research methodology. Among the research objectives is also the comparison of Timisoara's urban public management performance in relation to the public management carried out in different areas of the Empire or in Europe in order to bring to the world information about the primacy of the research result. The difficulties of the research were due to the large sum of data existing in the national archives and the relatively short time. Thus, only the most important projects (important from the perspective of the Imperial or European primacy) were surprised in the creation of an eloquent image of Timisoara's urban development between 1716 and 1914.
In the particular case, we selected for research some facts, historical events as historical landmarks of Timisoara city management, from the most dense periods in terms of technological progress, in order to

DOI: 10.14232/analecta.2020.1.1-8

prove that it had personalities from the field of administrative-public management, who through specific attitudes, implications and processes (strategic approach) managed to positively and constructively influence Timisoara in the development process of the Imperial period.

3. RESULTS AND DISCUSSION

The administrative change in 1716 meant for the city of Timisoara a new beginning, a whole new approach in terms of public administration. The period under review reflects a new start and in terms of progress and development potential and is characterized by an abundance of urban management premiere and not only at local, regional and European level owing to a new way of original management of the territories annexed to the Empire. The Banat region and the Timisoara town were administered by Imperial structures such as the Crown and the Imperial Chamber, through the Aulic Forces in Vienna[2] (the Aulic Chamber and the Aulic War Council) under the institutional structure of the Provincial Imperial Administration[3] of the Banat region. At the regional level, the direct, administrative lead of the Provincial Administration was the General Command. At the level of Timisoara city, the German Magistrate[4][5] and then the Serbian Magistrate represented major local administrative institutions subordinated to the Provincial Administration[6]. Division of territory by administrative units called districts[7] run by an administrator. In each village there was a sub-administrator, as the head of each village was a principal or mayor. The administrators were subordinate to the General Command.

The Provincial Administration has contributed to the development of the region by developing general reorganization framework plans[8], providing already functional institutional structures at the level of the Empire and implementable in the region and implicitly in the city of Timisoara. The General Command and the Magistrates in the city benefited from the flexibility and financial support of the Provincial Administration for the planned and developed urban projects at the local level.

In addition to the central and local administrative institutions, leaders, who initiated urban managerial projects, have maintained institutional relations which contributed to the successful implementation and finalization of these projects.

The first person who initiated, planned and implemented the Timisoara strategic Reconstruction Plan was Claudius Florimund Mercy, he was the Governor of Banat after the administrative change from Ottoman to Imperial. Mercy has initiated many, not only large and successful logistics projects by applying urban management similar to what we call today modern public management. This also reflects a premiere for urban management, for the analyzed period of time.

Mercy addressed the issue of administration, being governed by the idea of participative urban democracy[9]. Perceived by the inhabitants as their friend and acknowledged among them for his knowledge and experience. Thus, we can categorize the governor's behaviour into the category of leader that involves and invites the population to make decisions about the reorganization of the city. This attitude can be assimilated to a public managerial behaviour characterized by a participative leadership style and constituting an innovation in the field of governance, administration, urban management for that period, through the constitution of the first elements of participatory urban democracy. Rigorousness[10] and structuring played an important role in the whole process of reorganization of Timisoara, consisting of a set of priorities embodied in urban plans and projects.

Mercy's priorities, reorganization strategies, strategic intentions, and the order of their planning highlight a profound process of analyzing, anticipating and assessing needs, public needs, and prioritizing their satisfaction in generating the most benefits and optimizing losses, costs associated with the proposed changes. From the point of view of urban management, logistics projects are part of it due to the fact that the whole reorganization process can be assimilated to the urban planning process, which is composed of cadastral, hydrological, emergency, calamity, public construction projects and private, construction standards, internal and external transport, urban aesthetics, utilities, green areas and parks, households, recreation areas at regional, district or residential level, industrial parks, factories, enterprises, preservation, institutions, continuous development. [11]

The continuous concern of the local urban administration over the dangers has contributed to the urban logistics development of the city of Timisoara. For example, the drinking water piping system [12] together with the hydraulic pump is a first-ever, and is among the first such systems in Europe. This system is an important element of the development of urban logistics and is an exceptional result that has the ability to distinguish the city of Timisoara from other known, developed cities of the world, at least in terms of the drinking water distribution system. However, this result derives not only from the existence at a given point in time of an urban logistics project for water distribution but is due to the constant concern to eliminate or reduce the impact of a fire, regardless of the nature of its source. Ever since the Ottoman administration, the Timisoara fortress had a water tower. This tower was rebuilt in another location (to ensure good visibility on the surroundings - so the tower was the physical observation, monitoring and control tool) and gradually assigned multiple uses. Due to the fact that the fortress was built in the marshland it was protected from possible enemies found difficult or almost impossible to access.

This geological feature and the ability to control the flow of the Timis and Bega rivers to flood the territory outside the city contributed to the formation of a unique defense capability that became a strong competitive advantage throughout the fortress's history (the city being conquered only by 2 times). This advantage was also a risk due to the fact that it influenced the air quality in the city and its surroundings, allowing the disease to spread more rapidly. Thus, the first preventive measures consisted in the process of draining the area, improving the quality of the drinking water and its accessibility through the development of the hydraulic machine. The administrative project for the drainage of the marshland marked the beginning of the development of the internal and external logistics of the city. Dry land maintenance has allowed the construction of bridges, roads, railways, urban rail transport, tramway infrastructure, road infrastructures, Bega sewerage and short- and long-distance river transport. Many of the above examples are at local, regional, European level. Important aspects will be presented in detail below and also represent the urban logistics complexity achieved through the major urban logistics projects.

The separate development process of the old town area of the suburban area has acted as a catalyst for the development of terrestrial logistics[13], especially the infrastructure of the rivers and bridges system that ensured the connection between the two areas. This distance between the town and suburban areas was important due to the geo-strategic location of the city. The defense system was based on the marshland, increasing the safety[14] of the inhabitants and activities of the city. The vision for the development of logistics in the future puts in the market the maintenance of safety based on geological features or the renunciation of this advantage in order to initiate and develop new projects. So, a decision was taken on initiating administrative project draining swamps and marshlands and opening the town. Once the old town walls where opened the local administration had initiated many projects of urban logistics resulting in the construction of bridges connecting dry land by roads, reducing the distance between the city and suburbs, forming the nucleus of local urban terrestrial logistic system and resulting logistically interconnected city having already common governing structure, both the old town and the suburban areas as well.

(1) Building new bridges requires ministerial approvals, being considered important from the point of view of the security of the region and the empire. The difficulty and temporal inefficiency of the process of obtaining opinions has determined the degree of similarity between bridges, and the same plans are used to build more bridges and superstructures. Originality in this area was concretized through a local premiere, the first road bridge in the region built from cast steel - the Golden Anchor Bridge. Important events that influenced urban re-development / construction of bridges in the city: the transformation of the Bega canal waterway across the territory of the city, 1898 establishment Tramvaie- Society S.A., hydropower plant construction, the opening of new streets. The interference of these events and the beneficial, developer-like effect on the construction of bridges actually reflect the systematic and sustained[15] development of the entire infrastructure of urban logistics.

(2) Exploitation, storage and capitalization of natural resources can be regarded as another urban logistic development imbold. Several natural resources, such as wood, an important resource for construction and a certain period without substitutes, were found in the territory of Banat. The geological features and an underdeveloped road network did not allow it to be capitalized. The existence of the urban public administration's concern for forest management is due to the existence of regulatory documents

regarding the price, the quality of these resources[16]. Thus, in order to capitalize natural resources, it was necessary to develop access routes which were materialized by the construction of river or terrestrial infrastructure. The discovery of the opportunities and the necessary action to obtain the benefits from them as well as the cost-benefit analysis are basic activities in private enterprises, so we can state that some urban projects have an oeconomic and not only administrative orientation[17]. The channeling of the Bega River, as a project for external river logistics of the city, provided the most economic way through which the wood/timber was transported[18] to Timisoara. The personalization of the logistics projects and the sequential construction of these projects has enabled the results to be as efficient as possible and did not jeopardize the integrity or functionality of the project as a whole. In terms of strategic management, we can name these ways of streamlining by personalizing logistics projects and urban logistics customization strategies. The fact that the Bega Channel was built in the most straight lines is the goal of streamlining river logistics, and the construction of multiple small sewers with locks, wood/timber storehouses right next to the Fabric suburb is the desideratum of customizing logistics to make wood transport more efficient. The desideratum of the development of the infrastructure needed for foreign trade to Central Europe has been shaped by the development of local agriculture and crafts. Thus, in terms of strategic management, we wanted to capitalize on the craft and trade potential. This priority was achieved in the first phase by channeling the Bega River, thus obtaining a connection through Tisa to the Danube and the Danube to central Europe. This channel was to be called Mercy Navigable Canal. And from this project can be inferred both a commercial and relational orientation (transport of persons) to the markets, the European cities. This ambitious project constituted the beginning of domestic and foreign urban logistics through the transport of goods and passengers both in the city and gradually over longer distances between cities. Among the works adjacent to the sewerage can be mentioned: the first channel to begged on Bega (Timişul Mic), between Faget and Timisoara is made in 1718, and until 1732 by Zrenjanin to reach Pancevo by fluvial vessel. The second major work is represented regular river transport of passengers and cargo on the Bega Canal, a regional premiere, turned out to be the first in the region of Banat. From the description of a historical document[19] on the regulation of trade[20] in food made by foreigners on foreign commercial vessels that stop in the so-called Mercy Navigable Canal, public management is revealed, the public use of the canal under the supervision of a police committee (Policey Comißsion) to generate public benefits and to maintain the quality of the goods transported. It is possible to detach from this description the orientation to what we call today quality management in urban and interurban river transport and another orientation towards the rigorous organization of urban and interurban river transport, in fact, an efficient urban and interurban public management of river logistics focused on supporting the quality of these public services and creating public benefits. The continuous development of river transport and the need to develop it can also be linked to the existence of a register of minutes of the German City Magistrate, Sessio in Publicis et Oeconomicis, 1764[21] and 1768[22]) containing, information on the development and maintenance of relations trade with different countries, problems related to the supply of the city, the purchase and export of gold and silver, import of various special commodities (coffee and sugar surrogates).

(3) Elements of anticipation and forecasting. The second personality that made a significant contribution to the development of urban logistics was Baron Iosif de Brigodo, the governor of Banat. Compared with the visionary Mercy, Brigodo was a more pragmatic ruler. Prior to reaching the Banat region, Brigodo hired Francesco Griselini to conduct research on the natural and historical potential of Banat. Among its priorities for urban logistics was the formal institutionalization of the urban or interurban logistics infrastructure development processes, based on a plan submitted to the Vienna Court (administrative structure with strategic interest and control power) of a structural entity under the form of a Caesar-Royale Construction Office. The area of competence of this office was a complex and complete one for urban and interurban logistics projects. Concern for financial management of costs by financing the Office's annual operation was provided by central tax administration. The desideratum of the operation of the institution was the creation of a scientific propagation environment, led by professional people.

The fact that Brigodo requested the research and analyzed it, and then developed plans and implemented them, means in terms of contemporary management that Brigodo has non-deliberately exercised multiple

management functions (Planning– the plan advanced to the court at Vienna, based on forecasting in the form of research, Organization– Establishment of the Caesar-Kingdom Office, Implementation– Coordination of Logistics Projects, Control– Regulations on Urban Logistics). Thus, we can say that Brigodo had, as a governor, the qualities of an urban public leader.

(4) Public utilities, street lighting. The existence of efficient and effective cooperation relations between the representatives of the public environment, the public administration through the developed urban projects and the private environment or the inhabitants of the fortress, in order to generate a common benefit. This common good has materialized in the development of the public lighting network. In this area the city of Timisoara starts with a premiere at Imperial level, being in 1760, the best illuminated city of the Empire. The maintenance and maintenance costs of this network had no costs due to the 100 street lanterns donated by the city's inhabitants. The evolution of this network continues with the onset of the gas plant that began its activity in 1857. The gas was used for street lighting (through 200 lamps). The system becomes difficult and expensive to maintain. Another first in continental Europe marks the technological progress of street lighting utilities, namely Timisoara becomes in 1884 the first city with a public street lighting network.

(5) Terrestrial urban transport carries the most pronounced and consistent results of technological progress in logistics due to good management of the logistics organization of the city. After the introduction of public transport along a 949-meter route, the Omnibus with horses in 1856, the city's first off-road tramline in South-East Europe developed in 1869. In 1896 it was transformed from animal traction into electrical traction of trams from the city and in 1901 new lines or considerable extensions of existing ones were created.

(6) The development of network structures announces the development of the city at the level of European cities. In 1854, the Vienna-Timisoara-Sibiu telegraph line is inaugurated, creating a first high-speed connection with both Central Europe and Transylvania. In close connection with the telegraphic line, we also mention the historical event that marks the obtaining of the license for the installation of the first urban telephone station, even from Thomas Edison in 1879. In 1881 we mark the introduction of the telephone network and the first telephone exchange in Timisoara.

Although not entirely part of the exclusively urban logistics, we considered it absolutely necessary to review the elements of interurban logistics, these relations[23] between the cities contributing to the completion of their logistic infrastructure. The railways, both the commercial and passenger transport network has been developed following two major directions[24]. On the one hand there were short-distance railways linking Timisoara to nearby towns, on the other hand there was a preoccupation of the city and administration of Vienna for the development and maintenance of relations with the outside of the region, or of the empire. The location of the city at the crossroads of many important commercial roads was a determining factor for the volume of investment in terrestrial infrastructure, both rail and ground. Here is the factual exposure of the double detectable orientation to multiple logistics projects. One of the factors inhibiting the development of interurban land logistics was the status and physical shape of the fortress, well protected by multiple rows of walls. The positioning of the gates and bridges has led to the direction of the construction of terrestrial roads, so from Timisoara the roads have developed pointing to all major cardinal points. The first main road was built to Szeged. In total, in 1848, 8 postal roads and 9 commercial roads started from Timisoara. Progress in this area has been provided by both local[25] and central funding. Good management and rigorous planning at the level of local government allowed for a construction and maintenance offer for 75 new roads in 1894. Many of these works have been entrusted to companies outside the region[26].

Among the main categories of urban logistics and significant premieres of the city of Timisoara we can list urban mobility logistics projects (1732- Bega Canal, 1869- First Horse pulled Trams of South-Europe [27]), Logistics and Public Utilities (1723- Hydraulic system and pipeline drinking water distribution system, are among the first such systems in Europe[28], 1884- the first city with a public street lighting network in Continental Europe[29]), telecommunication logistics and terrestrial transport infrastructure (railways[30] and urban[31] and commercial roads).

4. CONCLUSIONS

From the enumeration we can deduce the rigorous logic of the hierarchy, the prioritization of the urban logistic projects, in correlation with both the nearby and the distant surroundings. The pioneering state of urban logistics has been supported by the multitude of urban logistics projects that, through good planning, organization and implementation, have managed to become outstanding at local, regional, Imperial or European level.

The multitude of significantly important projects reveals clear signs of the establishment of urban public management structures, which have supported good management and control of public institutions that have been set up and have proved to be performing. Some of the major projects benefited from an assured and supervised financial management from Vienna but others were financed from local budgets. The existence of a reorganization framework plan developed by the Central Authorities had been acting as a support and basis for the projects developed at the local level. Due to the fact that some large projects required a long time to complete, it is not natural to assign them the mandate of a single governor or leader. Regardless of the leading personality, the important projects have been completed, most of which resulted from them. The importance of progress has not been influenced by personal behaviours and goals but by capitalizing on opportunities and creating public benefits.

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[4] CDNA, Fund 2: Town Hall of Timisoara, inventory no. 141, document no. 1/1718, tabs 1-6: Provisions issued by the Imperial Commission for the organization of the city of Timisoara from an administrative, economic, political, religious, and legal point of view.

[5] CNDA, Fund 2: Town Hall of Timisoara, inventory no. 141, document no. 6 / 1772- The President of the Count P. Brigodo Administration tells the Serbian Magistrate that Mehala suburb is removed from his administration and moves to one of the newly created perceptions (Rentämter). Innovating the structures of local administrative institutions by adding suburban ones.

[6] CNDA, Fund 2: Town Hall of Timisoara, inventory no.141, document no2 / 1758, tabs 1-2: Copies-Provincial Administration communicates to the Serbian Magistrate the empress's approval regarding the construction of a town hall, the conditions. or CNDA, Fund 2: Town Hall of Timisoara, inventory no 141, document no.2 / 1759, tabs 1-2: The Administration communicates to the Serbian Magistrate the approval of the following points: re-conferring jurisdiction, approving the name Magistrate, building or buying a building for the Magistrate.

[7] Between 1716-1776, during Banat training, it was divided into 13 districts, all of which had the same administrative regulations of operation. (K. Vicze, Az vég Temesvárban…,Marineasa, Timișoara, 2006, pp.202-203)

[8] CNDA, Fund 2: Town Hall of Timisoara, inventory no. 141, document no. 1/1718, tabs 1-6: Provisions issued by the Imperial Commission for the organization of the city of Timisoara from an administrative, economic, political, religious, and legal point of view. Turkish bath transformed into City Hall.)

[9] Mercy's vision of the future of Timisoara confirms its orientation towards progress, development and well-being, which can be inferred from Griselini's description (1984, p. 128) in which Mercy declares that he wants to achieve results not only to satisfy the public needs but also to create *well-being and luxury*. In terms of strategic management, we can make an analogy between the ones outlined above as elements of the strategy (mission, vision) with a transformative effect on the city.

[10]CNDA, Fund 2: Town Hall of Timisoara, inventory no. 141, document no. 3/1718, tabs 1-2: Report of the Timisoara magistrate to the Landes Administration regarding the use of false loads and measures by Serbian merchants and the necessity of unification of weights and measurements.

[11] CNDA, Fund 2: Town Hall of Timisoara, inventory no. 141, document no. 3/1770, file1-8: The list of the orders of the Administration given by the Serbian Magistrate in 1770. In total 210 orders for one year. Another document attesting to the frequency and rigurosity of organization is the German Magistrates' Sessions record (approximately 72 sessions per year) derives continuity and administrative rigor. CNDA, Fund 2: Town Hall of Timisoara, inventory no. 141, document no.4 / 1764, tabs 1-427: Registry of minutes of the meetings of the German Magistrate of Timisoara with the following issues: economic, administrative, judicial, criminal. Dated from the beginning of 1764 to 27 Aug. 1768.

[12] The existence of the document, which includes a situation of the assets and liabilities of the city of Timisoara for 1770 and in 1774 the hydraulic machine, is an important part of the drinking water distribution system. This change is a premiere for the city and has the capacity to serve the entire population. CNDA, Fund 2: Town Hall of Timisoara, inventory no. 141, document no. 4/1770, tabs 1-28: The active and passive Satan of the privileged royal city of St. Mary 1770-1776.

[13] Á. Jancsó, Istoricul podurilor din Timișoara, Mirton, Timișoara, 2010, pp.24-25.- The existence since 1552 of a long bridge of approx. 948 meters.

[14] Fortress security and public administration control function. CNDA, Fund 2: Town Hall of Timisoara, inventory no. 141, document no 3/1728, tabs 1-2: Nominal specification of the German Jews in Timisoara - a list of Spanish Jews appears in the list. On the reverse, the resolution of the Administration regarding the punishment of arresting offenders who would sneak into the city - The first sentence of punishment.

[15] The reciprocal development of projects and logistical projects also derives from its description (Jancsó, 2001, pp.63-65) regarding the financial contributions of the Tram Company to the creation of the infrastructure needed to carry out its activity. The amount of the contribution of 25% of the costs of 4 bridges.

[16] CNDA, Fund 2: Town Hall of Timisoara, inventory no. 141, document no.5 / 1755, tabs 1-4: Provisions of the Administration given to the German Magistrate on the price of fuel wood. Price regulation. Forest management elements

[17] F. Griselni, Attempt of Political and Natural History of Banat Timisoara, Ed. Facla, Timișoara, 1984, pp.130-131. These statements are also confirmed by Griselini describing the process of wood harvesting in forests near Timisoara, claiming that forests could supply wood for factories, construction but also for economic purposes.

[18] The legacy of the construction of this channel was attested by Griselini (1984, p.131), considering the canal as *comparable to a masterpiece of ancient Rome!*

[19] I. Haţegan, M. Pîrşe, Premierele şi priorităţile Timişorene, Volumul 1, 100 de premiere şi priorităţi până la 1900, Banatul şi Artpress, Timișoara, 2009, pp.5-10

[20] CNDA, Fund 2: Town Hall of Timisoara, inventory no. 141, document no. 2/1756, Filings 1-8: Provisions of the Administration to the Magistrate, and a Magistrate's Report on the regulation of food trade made by foreigners on foreign commercial vessels that stop in the so-called "Navigable Mercy Canal."

[21] CNDA, Fund 2: Town Hall of Timisoara, inventory no. 141, document No. 2/1756, tabs 1-8: Administration's provisions to the magistrate and a report of the magistrate on the regulation of food trade made by foreigners on foreign commercial vessels stopping in the so-called "Navigable Canal Mercy".

[22] CNDA, Fund 2: Town Hall of Timisoara, inventory no. 141, document no. 4/1764, tabs 1-427 Registry of minutes of the sessions of the German Magistrate of the city of Timisoara (*Sessiones in Publicis, Politicis et Oeconomicis*), containing the following issues: supplying the city with food, links with Arabia, etc.
[23] CNDA, Fund 2: Town Hall of Timisoara, inventory no. 141, document no. 13/1768, tabs 1-40 The word CONTROLOR first appears. Registry of minutes of meetings of the German Magistrate of the city of Timisoara (*Sessio in publicis et oeconomicis)*, comprising the following: economic: acquisition and export of gold and silver, import of coffee and sugar surrogates, rents (butchering, wine flow, etc.), craftsmen (reception as craftsmen and citizens, school litigation against lice, litigation, calf litigation, etc.), measures related to the heredity of the monetary subject, etc., introduction of the lottery in Banat.
[24] CNDA, Fund 2: Town Hall of Timisoara, inventory no. 141, document no. 22/1895: Acts relating to the construction of the Timisoara-Serbia railway line.
[25] Compared to other cities on the same map, for example Cluj-Napoca in 1848, which did not have, at the same time as Timisoara, developed roads to only three cardinal points and significantly less secondary terrestrial roads.
[26] CNDA, Fund 2: Town Hall of Timisoara, inventory no. 141, document no.10 / 1768, sheets 1-6: receipts for salaries of employees of the Serbian Magistrate; receipts related to paved streets spending in the Fabric Advanced Ward and paid for 10 years.
[27] CNDA, Fund 2: Town Hall of Timisoara, inventory no. 141, document no.6 / 1890: Hungarian company for asphalting roads.
[28] I. Haţegan, M. Pîrşe, 2009, pp.15-23
[29] CNDA, Fund 2: Town Hall of Timisoara, inventory no. 141, document no. 22/1782 tabs 1-2: Inventory of hydraulic machine requisites with takeover clause from Magistrate
[30] CNDA, Fund 2: Town Hall of Timisoara, inventory no. 141, document no 8/1884: Contract between Timisoara City Administration and Abgb-Austrian Brush Electrical Limited Company for the introduction of electric lighting on the streets of the city.
[31] CNDA, Fund 2: Town Hall of Timisoara, inventory no. 141, document No 22/1895: Documents relating to the construction of the Timisoara-Szerbia railway line.
[32] CNDA, Fund 2: Town Hall of Timisoara, inventory no. 141, document no. 9/1768, tab 1: Statement of expenditure for repairing the main street of Fabric zone.