

Entrepreneurs, Enterprises and Innovation in Pécs (1850–1914)

Abstract

The purpose of the study. To examine how the 19th century economic modernisation (Western type of industrialisation, technological transformation and the birth of the manufacturing industry) unfolded in Central Europe; and more importantly in Hungary, at Pécs, and what technological innovations were created by local entrepreneurs.

Applied methods. Literature review including the history of the manufacturing industry. We involved sources from monographies, employment and census records, reminiscences and our own data from researches of archives. The research framework is the history of distinct businesses. We introduced five businesses whose economic effects influenced the operations of Pécs in the long run. We made a structural analysis examining the entrepreneur and its business together.

Outcomes. The Austrian First-Danube-Steamboat-Shipping Company (DDSG) became the largest works in the city by starting intensive coal mining and creating modern technological background since 1852. It employed four thousand souls at the beginning of the 20th century and the city profited a lot from its developments (railway construction and electric power plant). The Zsolnay Porcelain Manufactory quickly became the synonym of Pécs. Vilmos Zsolnay ended up being a world famous entrepreneur because of his technological innovations (eosin, pyrogranite, etc...) and products. The term “Glove of Pécs” came alive in the ages of the dual monarchy. János Hamerli founded the first glove manufacturing plant in the country. The Angster Organs have played for hundred and fifty years. The company founded by József Angster emerged at the end of the 19th century and represented state of art technology.

Keywords: Pécs, city, entrepreneur, company, innovation, development

1. Economic Development and Innovations in Western Europe in the 18-19th Century

The international Economic History literature considers the long 19th century as the age of modernisation. Its most important feature was that old, traditional economic and social boundaries were dissolved and they were replaced with new, mostly market-based relations. This happened in England first, but market relations quickly appeared in other European areas too. The cause of the changes has been debated for one and a half century, namely which were those economic and social contexts that made the birth of the new economic model possible. Univocal answer can hardly be given since there were special phenomena in all countries that could have made the changes locally unique.¹

Those innovations which were present in almost all industries played a key role in the Western European economic transformation. We can consider technological innovations, new manufacturing processes, expansion of manufacturing industry, integration of the extra-European markets, those raw material sources that enabled the creation of new industries as such innovations.² Innovation is nothing else than creative destruction, which aims to cause imbalance and initiate a sensitive and comprehensive economic selection process.³ In the centre of changes there stands the risk-taker, calculating entrepreneur who also considers investments with only long-term profitability and whose role was decisive in the spread of a rational, market- and profit-oriented worldview.

¹ Ránki, Gy. (1983): 206-208.

² Cameron, R. (1994); 208-219.; Landes, D. (1969): 69-70.

³ See Schumpeter, J. A. (1980).

The question is in which industries the innovations can be seen the most. Without doubt there were many areas of the transformation and we shall highlight a few (non-exhaustive).

Since the 1720s the English and Dutch agriculture transformed quickly. In order to meet the growing populations' demand, mass production was necessary, which resulted in the restructuring of the traditional agricultural production. Since the 1730s the enclosures created the basis of large-scale manufacturing, hence the linked large estates were adequate for investments.⁴ The first steam tractor appeared in England in 1835 which made deep ploughing and better soil-turning possible. After this, steam powered threshers, steel harrows, seeders and reapers heavily increased the productivity of agriculture.⁵ The development of chemistry and biology provided more available knowledge about plants and animals. Operational knowledge of farming gained significance too.

Development resting on scientific research can mostly be recognised in the industrial sector. People had long been trying to replace charcoal necessary to smoke iron ore with another fuel. In 1709 Darby invented the coke-fired furnace solution. Henry Cort founded the basis of steel production in the 1780s. In the middle of the 19th century contemporary iron-smelting processes were perfected and in the second part of the century the heavy industry poured raw material which was increasingly utilised by the machinery industry, transportation and agriculture. As a result of development in almost all countries, heavy industrial areas came to life which concentrated an enormous workforce; some areas in Germany stood out.⁶

Steel production made it possible to create high pressure steam engines, which were used in many industries. The explosion-like spread of steam engines started at the beginning of the 19th century. Machinery industry, transportation, textile industry and agriculture provided great demand. Through many technological improvements piston steam engines became the major innovation of the 19th century and it ruled the market until the spread of internal combustion engines; they achieved their greatest impact through steam locomotives.⁷

The textile industry's technological and operational innovations had been present since the 1730-40s. The mechanisation of weaving and spinning at first with water and later with steam overshadowed the traditional artisan industry. Demand grew more and more for textiles made of cotton coming from overseas (India and USA); therefore, mechanical improvements mostly aimed towards that direction. The textile industry mobilised masses of people; factories employing thousands of workers mostly utilising the cheap labour of women and children spawned in England; which resulted in the birth of numerous new regional industrial centres.⁸

The increased product volumes generated demand for transportation which brought a new challenge to the transportation sector. The renewal of public roads happened in parallel with the construction of river canals; until 1840s the European 10,000 km canal system provided enough transportation capacity. Maritime transportation developed too: the age of steam started as a result of the spread of steamships. The most important part of the transformation was the railway. In the second part of the 19th century railroads grew in number very fast; before 1914 there were 330,000 km of railroads in Europe. Railway became the most important means of transportation: it was faster than shipping on road or on water. Railway provided huge orders for other industries and other sectors; we could say that most of the economy turned towards railways.⁹

⁴ Turner, M. E. (1989): 489-510.

⁵ Overton, M. (1996): 9-23.

⁶ Kaposi, Z. (1996): 27.

⁷ Landes, D. (1986): 69-178.; Cameron, R. (1994): 219-228.

⁸ Berend, T. I. - Ránki, Gy. (1987): 110-113.

⁹ Berend, T. I. - Ránki, Gy. (1987): 45.

2. Adaptation and Convergence: Opportunities of Central Europe

The question is which of the previously presented modernisation processes happened in Central Europe? The Habsburg Empire including Hungary was the second largest country by area and the fourth largest country by population at the beginning of the twentieth century. Economic development was quick in the empire in the 19th century. Its area was barely affected by wars after 1850; therefore, production per capita significantly rose during economic booms and there was also meaningful improvement in quality of life.¹⁰ As a result, the Monarchy became a moderately developed country by the turn of the twentieth century. However, regional differences were significant: compared to the developed Austrian and Czech provinces the Bukovinian, Dalmatian, etc. ... regions did not achieve one third or one fourth of the above mentioned regions' economic standard of living.¹¹

In order to have economic development there was need for a conscientious, Western Europe oriented economic policy system, which in principle was the import of modern technologies, enhancing railway constructions and establishing free trade among the borders of the empire. The theory's important element was isolationism: high tariffs protected the market of the empire from developed and competitive Western European countries.¹² In the middle of the 19th century the customs frontier separating the two countries was abolished, which enabled the freedom of goods traded between Austria and Hungary. The Austrian tax system, land register and industrial freedom was established too.¹³

In the dual monarchy era Austria-Hungary was more than a simple customs union: it functioned as a common market with full monetary integration and as a partial tax union. Spread of shared Austrian-Hungarian enterprises had great significance, which mostly occurred in the large-scale industry.¹⁴ Economic development of the Monarchy compared to the previous eras was rather quick in the second half of the 19th century, which is proven by growth and quality of life measurements too (Good 1986). Growth varied regionally but differences inside the empire were decreasing. The income of Hungary was around the mean of the whole empire.¹⁵

3. Economy of Pécs in the Middle of the 19th Century

Let's examine the economic and social structure of Pécs in this quickly changing environment in the middle of the 19th century. Pécs was the most populous city of the Southern Transdanubian region in the above-mentioned era. Its population grew fast: around 1828 it had 11,300 souls, while in 1850 there were 15,300 people living in the city.¹⁶ Population growth was especially high between 1850–1870 when the number of people living in the city rose to 24,000. This dynamics was not unique in the region.¹⁷

The situation of Pécs was special because it was a regional centre. South of the Mecsek hills there were agricultural areas: most of the trade coming from Slavonia, Bácska and the Ottoman Empire did reach Pécs. The size of the city together with its accommodations made it an important station of transit traffic. The size of the market area of Pécs was already the second largest in Hungary in 1828 behind Pest-Buda.¹⁸ The blossoming of trade was largely aided by

¹⁰ See Bairoch (1976); Komlos, J. (1990); Good, D. (1986).

¹¹ Berend, T. I. - Ránki, Gy. (1987): 417-418.

¹² Kövér, Gy. (1982): 23.; Kaposi, Z. (2002): 206.

¹³ Kaposi, Z. (2002): 168-175.

¹⁴ Katus, L. (1989): 832-845.

¹⁵ Berend, T. I. - Ránki, Gy. (1987): 417.

¹⁶ Based on Nagy, L. (1828) 1.; Fényes, E. (1851).

¹⁷ Katus, L. (1995): 41.

¹⁸ Bácskai, V. (1988): 198.

the fact that three busy roads intersected in the city. The number of merchants was growing steadily: the city could hold four countrywide fairs per year; meanwhile the number of retail stores supplying locals increased.¹⁹

One of the most important aspects of the economy of Pécs can be traced to its grape and wine industry. 15% of the land was planted with vine: in the 1850s 1093 hectares of vine was cultivated.²⁰ Based on our calculations in case of 7000-8000 adults out of the population of 15,000 seven to eight hectolitres of wine for each person were produced; which was way over the consumed amount of wine per capita. Grape and wine were more than an easy to consume goods or income in the life of the people of Pécs. Grape and viticulture were the symbol of middle-class lifestyle in most of the contemporary cities.²¹

The industry of Pécs depicts an interesting picture in the middle of the 19th century. Artisanal handicraft was the dominant industry for a long time. However, the development of the industry could only be achieved with technological innovations or investments due to the quickly growing population's demand. Individual craftsmanship could survive for some time but progress only came from increase in size and mass production. We can date the renewal of the industry of Pécs since the 1840s; that is when the first factories started to operate. Amongst them there was a brewery, a liquor factory, a cigar factory, a machine factory and a paper factory.²² The first sugar factory of Pécs was founded in 1844 by Gyula Linberger Gottlieb, an entrepreneur from Pozsony. The factory used up 1900 tonnes of sugar beet while produced 80 tonnes of sugar in its first year.²³ In 1844 the first iron factory started to operate which used two steam engines for production. Iron ore was transported from Gömör County in Northern Hungary while coal was mined in the Mecsek Hills. The business was founded as a corporation in which Concordia Association and András Madarász ironmaster from Gömör played a key role.²⁴

Coal mining played a more and more important role in the city's economy. There were significant coal sources in the Mecsek Hills lying on the northern side of the city, which proved crucial in the latter development. Citizens had the right to freely dispose of coal found on their own private property. At first, mostly bellfounders, coppersmiths, etc. ... used coal for industrial purposes. More and more people started to dig up coal on their own property for sale. The earliest private mines were started in the 1780s.²⁵ The value of those lands where coal was found rose sharply and citizens tried to acquire such lands. Even bigger coalfields lay east of the city in the villages Mecsekszabolcs and Somogy which belonged to the Diocese of Pécs.²⁶

4. Innovations and Enterprises (1850-1914)

Compared to the previous eras we can sense a significant economic development in Pécs in the 1850-60s. This is shown by many signs. There was an increase in the number of merchants at the time of the Austro-Hungarian Compromise (1867); one hundred and sixty of them lived in the city, which strongly links up with the economic boom observed in this era. Businesses grew in number; many new factories were founded and small-scale industry flourished. These, and many other signs show that the previously started transformation accelerated, which could have laid the foundations for the dynamic development under the dual monarchy era. Next, we are going to review the era till WWI (1914) focusing on the most typical cases and types of business in

¹⁹ Antalffy, Gy. (1982): 73-94.

²⁰ Kovács, A. (1973): 279.

²¹ Kaposi, Z. (2017): 11.

²² Kaposi, Z. (2017): 13-14.

²³ Kopasz, Gy. (1968): 47.

²⁴ Rempert, Z. (1996): 105-118.

²⁵ Babics, A. (1952): 7-17.

²⁶ Pálffy, A. (2002): 258.

Pécs, which enabled the owners to create significant innovations which in turn generated long term economic successes. We are going to introduce four innovative businesses which had their results written into the golden book of Pécs' Economic History.

4.1. Effect of Large-Scale Industry coming from abroad: the Erste Donau-Dampfschiffahrts-Gesellschaft (1st Danubian Steam Navigation Corporation)

The Erste Donau-Dampfschiffahrts-Gesellschaft (from now on DDSG) had one of the largest effects on the economic development of Pécs. The Austrian owned corporation continuously expanded its Danubian transporting fleet. It had 48 steamships in 1850 and 120 in 1860, which was crucial to export crops to Austria.²⁷ The corporation's need for coal was continuously growing: it became obvious that it was worthwhile to build a coal mining logistics rather than buying coal from the market. Therefore, the DDSG bought up the lands lying on the northeaster side of the city (later known as Pécs-bányatelep) and established its first mine (András-akna). The mine was expanded after 1853 through continuous acquisitions and leases. As a result, many mines owned by citizens of Pécs were purchased by the corporation. In 1855 the Karolina mine was bought from Antal Riegel, in 1864 the Istenáldás mine was purchased from Ferenc Czvetkovits and in 1867 Lőrinc Littke's mine along with the Feketehegy mine association was bought up. The corporation also leased and later purchased coalfields from the city.²⁸

DDSG had to solve the problem of transportation of coal. High transportation costs were contemporary issues. At first, transportation of coal to Mohács, a port city alongside the Danube happened by wagons on miserable public roads. In 1852 the coal mining company started to construct the railway among Pécs, Villány and Mohács, which was one-and-a-half-time longer in distance than on public roads. The six-kilometre phase between Pécs-bányatelep and Üszögpuszta was constructed in two years' time, financed directly by the Austrian government, since strengthening the Austrian owned DDSG fitted well with the intensions of the Crown. The end of the railroad at Üszögpuszta was directly adjacent to Pécs on its south-eastern side, and the large estate was owned by two members of the Vienna based banker and wholesaler Biedermann family. However, the Austrian government's concept changed in the middle of the decade and the DDSG had to finish the remaining phases between Üszög and Mohács from its own money. The construction was finished in 1857 after great difficulties and the fifty-six kilometres of railway between Mohács and Pécs was opened. The first "coal train" arrived to Mohács on 2nd May 1857. The DDSG was provided with cheap, high quality, easy to access and safe-to-transport coal. The corporation originally planned to use the line only for freight transport and had no intension of running passenger trains or transporting other goods. Without doubt the opening of the railway made the haulers lose their incomes; however, the railway construction, its operation and the Pécs and Mohács stations' demand for labour aided the employment situation.²⁹

What was Pécs given by the DDSG apart from its first railway? The corporation expanded even further in the 1860-70s: it bought and leased more and more land. At the beginning of the 20th century, it owned 436 hectares of land.³⁰ It increased employment in the city and in the neighbouring villages.³¹ At the end of the century Pécsbánya-telep had a population of 4,300 and it ended up being the fifth district of the city.³² The land that the DDSG leased in 1868 for fifty years from the Diocese was significant too. As a result, the Church institution had

²⁷ Huszár, Z. (2013): 80.

²⁸ Babics, A. (1952): 26-30.

²⁹ Erdősi, F. (1986): 388-389.

³⁰ Pécs ezer éve (1996): 191.

³¹ DGT (1894): 4-5.

³² Pécs ezer éve (1996): 181.

a humongous rental income, which enabled it to finance the rebuilding of the basilica; and after the renewal of the contract the construction of the Pius church and the boarding school too. It is a fact too that the headquarters of the corporation was built under 5 Mária Street while most of the mines were located outside of the city. We cannot forget either that approximately 3,500 miners (among them about 900-1000 from Pécs) were earning above the mean income rate, which gave a huge opportunity to manufacturers and merchants of Pécs to increase their incomes. And finally, let's mention that the large-scale company was sticking out of the line: it was a rationally structured, profit-oriented corporation mostly employing foreigners for a long time, whose technological developments and innovations were integrated into the public life of Pécs. For instance, Pécs was supplied with electricity by the DDSG's power plant since 1918.³³

4.2. From Merchandise to Industrial Innovation: the Zsolnay

Through time, the term "Zsolnay" became a special symbol in the industry of Pécs. It embodies the capitalist entrepreneur's prototype, the puritan, always innovation seeking successful businessman who subjected his entire life to the success of his company and artistic self-expression. The man who did not hesitate to show his creative, artistic side while merged a large-scale company and high level of business professionalism.³⁴

The father of Vilmos Zsolnay was a merchant from Pécs belonging to the top tier of the middle class. His store on the Main Square and its wide variety of goods and its profitability enabled him to provide for his family and have his sons taught. His marriage produced six children. Vilmos Zsolnay, the famous entrepreneur was the second born son in 1828. After elementary school he was an apprentice in his father's small wares wholesale business, finished his apprenticeship at the age of 15 and went on to learn commerce at Polytechnisches Institut in Vienna. He found a job in Vienna at a leather goods store but during the revolution of 1848 he was working in his father's business in Pécs again. He issued a son (Miklós) and two daughters (Júlia and Teréz).³⁵

Vilmos Zsolnay did not deal with ceramics manufacturing at first. His father passed on his Main Square store to him in 1853.³⁶ Being a merchant at that time meant that he had to deal with great many things. After gaining his independence from his father he was active in many different industries between 1854-65. He expanded his Main Square store and continuously expanded supply. The "Bazaar" provided him secure living and also development resources for his latter factory.³⁷ In the 1850s he transported wine to Austrian territories and to Croatian cities too. Zsolnay tried to benefit from the railway construction too: he partnered up with a company for constructing the Úszög-Pécs railroad. He almost came into contact with the industrial sector by accident: his older brother, Ignác's small-scale pottery works at Lukafa was indebted and it was only saved by the loan granted by Vilmos; and later in 1865 Ignác had to sell his works to his younger brother. After remaking the works, Vilmos Zsolnay established the "Első Pécsi Cement Chamotte és Tűzbiztos Agyagárúk gyára" (i.e. "First Pécs Cement Chamotte and Fireproof Earthenware Factory") business in 1868.³⁸

Vilmos Zsolnay subjected his different business activities to the development of his ceramic works. At that time the market was growing. It was important for Zsolnay to exceed the traditional experience and practice-based operations. The regular examination of raw materials, the continuous renewal of firing methods and safe harmonisation of masses and glazes enabled

³³ Kaposi, Z. (2006): 120.

³⁴ Jávorka, K. (2004): 245-246.

³⁵ Rúzsás, L. (1954): 46.

³⁶ Zsolnay, T. (1974): 17.

³⁷ Mattyasovszky-Zsolnay, T. (1999): 203-204.

³⁸ Rúzsás, L. (1954): 49.

him to target wider range of customers. In order to step forward he had to study the European manufacturing technologies and since he had no chemical knowledge, he tried to compensate his inherent deficiencies with employing great professionals in the early years.³⁹ The constant researches and experiments became more and more his life.

The raw material found at Pécs and its neighbourhood areas was favourable for Zsolnay. It allowed him to create his faience, being less sophisticated than porcelain but also a very durable material. He was always searching for a new and new clay pits; and those lands which meant secure raw material sources were usually bought up by him.⁴⁰ Zsolnay applied the Italian technology where the wares were shaped on potter's wheel, then they were fired on low temperatures, then tin-glazed them and finally, they were painted and fired on high temperatures. Since porcelain ruled the market in the second half of the 19th century, Zsolnay had to refine the technology of faience all the time, while the end product had to be similar to porcelain. He reached his peak in 1877 when he managed to make tiles named after him which he called porcelain-faience.⁴¹ This was a porous material which withstood physical impacts and unlike porcelain it contained no hairline cracks. These wares were painted, glazed and fired. This process was called by Zsolnay as "high-fired enamel technic".⁴² He achieved success with this technology at the Paris World's Fair of 1878.

Later Zsolnay got even further with glazing. He created the so called "shrinking glazing" in 1883, he developed the oily glazing in 1885, but the real advancement was the eosin (metallic glaze, lustre) which he managed to finalise in 1893. During the eosin making process the already fired tiles are painted with metal oxide compounds and then heated until glowing red, which resulted that oxygen was released from metal oxides, and a metallic glaze remained on the workpieces.⁴³ These processes were mostly used for everyday and decorative dish production.

The researching large-scale manufacturer was able to conquer other markets too. The economy had increasing demand for ceramics used for industrial purposes. First, Zsolnay produced insulations made of faience which were to replace insulations made of porcelain; however, a decade later he switched to porcelain insulations too.⁴⁴ The factory was capable of producing new products for the construction industry too. The pipeline factory became an autonomous department in 1884. In the 1880s stove production started too. Since 1891 wall tiles and floor tiles were produced in separate departments. In 1895 they started the production of pyrogranite (ornamental building ceramics) which brought a huge success to the entrepreneur.⁴⁵ It is well known that the continental climate of the Carpathian Basin has deteriorating effects on most construction materials. However, the pyrogranite resists against frost, acid and it is easy to form.⁴⁶

Zsolnay had big plans. The Monarchy as a customs union was a market given but he was able to expand even farther. For that, he needed to enhance his factory. A very interesting business model came to life. Although local and national banking system was already in function, Zsolnay sought no bank loans and he tried to self-finance his developments. If he needed outside funds, he mostly borrowed from his friends, in whom he could trust unconditionally.⁴⁷ In his case we can observe an entrepreneur who tried to reinvest his profit into his company. As a result, the development of the factory was progressing more languidly than it could have been with bank loans; but it significantly decreased the business risk for Zsolnay. Zsolnay's lifestyle was

³⁹ Ibid. 29, 62-66.

⁴⁰ Zsolnay, T. (1974): 30.

⁴¹ Rúzsás, L. (1954): 75.

⁴² Zsolnay, T. (1974): 66.

⁴³ Ibid. 176-177.

⁴⁴ Rúzsás, L. (1954): 79.

⁴⁵ Rúzsás, L. (1954): 60.

⁴⁶ Pécs Lexikon (2010): Vol.2. 157.

⁴⁷ Rúzsás, L. (1954): 90.

also moderate, despite the fact that he stood out massively from his class, he stayed away from representative expenses.⁴⁸

For the entrepreneur, competitive challenges were more important, and for that great fairs provided the best grounds. First, he appeared in Vienna Exhibition in 1873 where the genuineness of his fancy goods caught the attention of foreign professionals and he got so many orders that he had to increase production capacities of his factory.⁴⁹ Among others, he received orders from England, France, Russia and even from the United States. Zsolnay became a well-known manufacturer by participating in the Paris World's Fair in 1878.⁵⁰ For Zsolnay, the time for domestic fair and exhibition challenge came in 1885. This was the moment when he could show his products on home grounds. The exhibition convinced the professionals that faience was superior in the modern art industry and Vilmos Zsolnay stood out among his competitors.

The once merchant Vilmos Zsolnay, who became a large-scale manufacturer, died in 1900. His life was full of public recognition along financial successes. His death caused no significant disruption in his factory since he previously involved his son Miklós into the business operations. In the 1890s Miklós took over the most important leadership positions, and since 1897 he appeared as partner and business decisions could only be made with his agreement.

Miklós Zsolnay differed in personality from his father. Reminiscence showed that he lacked the artistic vein his father and his older sister had. However, he excelled in business.⁵¹ He was raised up in a changed world. If we consider his father as great founder, then Miklós has to be considered as a real manager type. He started as a salesman and since 1880 he managed foreign sales. He toured the world and sought for markets where products of the factory at Pécs could be sold. After the death of his father, the Zsolnay factory became a really successful large-scale enterprise in his hands. He rose high in public esteem and received vast amounts of awards just like his father; he became the member of the Upper Chamber too.⁵²

Under Miklós Zsolnay's reign dynamic expansion started at the turn of the century. The new owner had visionary plans: he wanted to achieve monopolistic position in the Monarchy and on the Balkans too. A growing number of smaller and larger porcelain and pottery businesses came under the influence of Miklós Zsolnay.⁵³ Miklós Zsolnay had his profit invested in many institutions but he also had interests in large insurance companies and also possessed many industrial companies' shares in and out of Pécs. The factory's increasing efficiency and the other businesses' increasing profitability is shown by the fact that in 1915 Miklós Zsolnay had a wealth of 7,356,000 Kronas while his shares were worth another 2 million Kronas.⁵⁴ The aggregate production of the factory skyrocketed particularly before the war which is implied by the fact that while in 1900 the overall production was worth 1.1 million Kronas it reached 3.1 million Kronas in 1911-12.⁵⁵

Development is expressed through changes in employment too. In 1872 only 30-35 people worked for the Zsolnay factory. Some data suggest that the number of employed increased after the Paris World's Fair in 1878: 460 people worked for the enterprise in 1882. In the pre-war years approximately 800 people were employed by the company.⁵⁶ The Zsolnay factory was unique not only in Hungary, but in the Monarchy too, since the three ceramic factories outside of Hungary employed 327 workers together in 1907.

⁴⁸ Zsolnay, T. (1974): 113.

⁴⁹ Rúzsás, L. (1954): 83.

⁵⁰ Várady, F. (1896): 612.

⁵¹ Zsolnay, T. (1974): 178.

⁵² Vargha, D. (1999): 223-226.

⁵³ *Ibid.* 222.

⁵⁴ Rúzsás, L. (1954): 149.; Vargha, D. (1999): 224.

⁵⁵ Based on Rúzsás, L. (1954): 245.

⁵⁶ T. Mérey, K. (1999): 21.

4.3. Renewal of Traditional Professional Knowledge: The Case of Hamerli Gloves Factory

We shall deal with János Hamerli, creator of “Gloves of Pécs”, and founder of the first gloves factory of Hungary as the third case of our innovative enterprises series. Hamerli’s career typically characterises those entrepreneurs’ opportunities whom had limited funds but great craftsmanship. Hamerli’s father ended up in Baranya County in the 1830s and served as a wrangler for the bishop in Püspöknádasd (today’s Mecseknádasd). He married in 1834 and his third son, János was born in Pécs in 1840.⁵⁷ János Hamerli learnt to be a tanner, then he started his journeyman years when he examined the profession in Temesvár, Arad, Pest, Graz and Vienna. He came home in 1861 and had clear business plans, thus requested a permit from the city council to start his own gloves business. His request was denied on the grounds that he was a minor; nevertheless, Hamerli solved the problem: he became an emancipated minor, thus the council agreed on giving him the license necessary for his business operations.⁵⁸

Hamerli set up his small workshop in his father’s house at 8 Kis Flórián Street, but soon he moved to 5 Fő Street which he rented in the beginning.⁵⁹ Hamerli was considered to be a glove maker in the city records at this time. Let us point out that the building on the end of the street meant a busy workshop and apartment. We do not know what funds Hamerli had when he started his business, but he most likely had some accumulated money (maybe inheritance or some savings from early and student years), since the rent could not be cheap; in addition, we also know that he bought machines for his workshop in the end of the 1860s.⁶⁰ His business must have run well, which is shown by the fact that he requested a permit in the capital of the empire, Vienna to open a glove making workshop and a residence permit too. During his journeyman years he assessed the market of Vienna and realised that there was a stable demand for quality gloves in the capital of the empire. The Pécs born entrepreneur operated his business in Vienna until 1874.⁶¹

Market growth forced Hamerli to continue the expansion of his workshop. He kept a shop in the City Hall building on Fő Street until 1888. One sign of expansion was the increasing number of sites. He had to face with the fact that maintaining a smelling and polluting tannery in the middle of city where the middle class was growing was not an option; in addition, he ran into trouble expanding his works. Thus, Hamerli had to buy new houses and lands again and again. In 1877 he bought the lot in Alsó-Puturla Street where he moved his raw skin warehouse and later his tannery workshop.

The other real estate acquisitions served different purposes. He purchased many bigger or smaller lands and lots which he tried to sell for profit.⁶² In the second half of the 1870s he bought the building and the yard under 21 Mária Street not far from his works. In 1883 he purchased a house with garden and yard in Szigeti outskirts, the western part of the city; and later he acquired the Three Crows inn. He invested some of his capital in passenger transportation enterprise, he bought lands for horses in Postavölgy.⁶³ Just like Zsolnay, he tried to find secure investments (real estate purchases) to increase his wealth.

From early on Hamerli tried to push both foreign and domestic sales. The common market of the Monarchy with its almost 40 million people provided a secure demand at the turn of the century; however, the great step forward was the government orders. The common military force of the Monarchy (KuK) was a secure and enormous market. Hamerli supplied 45,000 pairs of

⁵⁷ Déri, J. - Gál, É. - Márfi, A. (2016): 48.

⁵⁸ Déri, J. (1977): 22-23.

⁵⁹ Ibid. 23.

⁶⁰ Sey (2005): 114.

⁶¹ Déri, J. - Gál, É. - Márfi, A. (2016): 49.

⁶² Ibid. 52.

⁶³ Sey, G. (2005): 114.

gloves every year for the military in the early 1880s. In addition, we cannot forget that the Pécs born entrepreneur was influential in the country regarding fashion: more and more domestic merchants bought his products. After successes in the Monarchy his gloves were bought in Western European cities too at the turn of the century. The annual production in the middle of the 1890s was about 80,000-100,000 pairs of gloves.⁶⁴

In the ages of the Dual Monarchy the term quality “Gloves of Pécs” was formed. The essence of good gloves is good raw material. In his works Hamerli used no skin bought from others, but only those skins which he prepared himself.⁶⁵ Quality of his products were shown by trade fair awards and product display awards. The 1873 Vienna World’s Fair resulted in a medal for him, the 1875 industrial exhibition in Neusalz brought him a gold medal, while the Centennial International Exhibition of 1876 in Philadelphia made him receive a certificate of appreciation. But he was also present at national exhibitions where he received numerous awards.⁶⁶ Hamerli became publicly known as a successful entrepreneur of Pécs famous for his quality gloves. At this time there was no other gloves factory than the one at Pécs, the competition in the Monarchy was represented by the works in Czechlands.

Apart from quality raw materials there was a need for technology too. Glove manufacturing was solely handmade according to traditions. Since the 1830s substantive experiments were conducted in Western Europe to make different patterns in order to increase productivity. The real breakthrough happened in 1867 when gloves sewing machine was invented. The new technology quickly appeared in Hamerli’s quality focused works in Pécs. In 1868 he bought a compactor from Western Europe, also a calliper and the number of sewing machines kept growing until there were 50 pieces of them in the late 1870s.⁶⁷

Properly trained workforce was a crucial step ahead for business progress. Just like in ceramic manufacturing most phases of leather production required specially trained workforce. Leathers made for industrial application had to go through various processes like preservation, soaking, liming, unhairing, fleshing, frizzing, splitting, deliming, pickling, depickling, shaving, softening etc... At first, he had to invite craftsmen from areas known for their high quality leathers. In 1878 seventy-seven workers were employed in the factory out of whom 50 were needlewomen.⁶⁸ Hamerli had the chance to expand when a new factory building was constructed in the early 1900s. The government subvention contract specified that 200 people had to be employed by 1905 and it was easily fulfilled with the new factory.⁶⁹

4.4. Passing the Western European Technological Standards: The Angster Organ Factory

Metal industry and lumber industry has always been significant in Pécs. Regarding metal industry coppersmith workshops and locksmith workshops occurred in large numbers, but the foundation of the iron factory in the Reform Era was also mentioned previously. The same could be said about the lumber industry including lumberjacks who were represented in large numbers too among industrial workers. The connection of these two industries provided supply to the musical instrument industry, and organ builder József Angster’s Organ and Harmonium Factory from Pécs became known far and wide.

József Angster was born in 1834 in a South-eastern Transdanubian village of Kácsfalu. He was raised up in a thatched mudbrick house in rural environment. It is told that even in his young ages he made musical instruments and played them. Angster had no organ builder

⁶⁴ Várady, F. (1896): 625.

⁶⁵ Lenkei, L. (1922): 209.; Ágh, T. (1894): 251.

⁶⁶ Déri, J. (1977): 49-50.

⁶⁷ Várady, F. (1896): 625.

⁶⁸ Déri, J. (1977): 58.

⁶⁹ Foglalkoztatás (1910): 1242.; T. Mérey, K. (1999): 25.

ancestors; his parents made him an apprentice in Eszék in 1850, where he learned as a joiner and then he started his journeyman years. He studied around Temesvár for two years, then he spent ten years in Western Europe studying the most advanced organ building technologies. He came home with the highest qualifications. He settled in Pécs in 1867 and started his own business. He received relatively large number of orders and his first major organ was played at the newly opened synagogue in Pécs in 1869.⁷⁰

As a result of continued development his enterprise dynamically grew and employed 50-60 workers in the early 1890s, while it had 110-120 employees right before the war.⁷¹ The company always outgrew its works' sites; therefore, it was always on the move, and as a result of the fifth resettling it found its final home. Under 30 József Street on the downtown's northern side a lot was purchased for the organ factory and Angster later bought the real estate under 35 Mária Street too.⁷² As a result, an extensive plant with multi-floor buildings was created. Steam engine powered the saws and lathes. Raw materials were bought partly from domestic merchants, but tin and lead were imported from English territories.⁷³ The factory made its one hundredth organ for the Basilica of Pécs in 1889.⁷⁴

The constant expansion of the factory required technical and technological developments too. In 1909 – using the government subvention too – more than a dozen work engines were planted in the factory powered by diesel engines. The market was given since high quality products were created; therefore, an increasing number of prestigious institutions were supplied with Angster organs. Only a few notable Hungarian examples: Basilicas of Pécs and Kassa, Kálvin Square Church, Saint Stephen Basilica in Budapest, downtown church in Pécs, the church in Győr and Kolozsvár, etc. ...⁷⁵ Export was very important: Angster's organs quickly conquered the Austrian markets too, crowding out the Western manufacturers. The biggest competitor was the Rieger brothers' factory headquartered in Vienna (but also having a plant in Budapest). Angster's factory was awarded with the contract for the Budapest Basilica's organ tender against the Rieger brothers.⁷⁶

The quick market expansion was made possible by the quality of the Angster organs. Angster not only adapted the Western European technology but also improved that and became the best organ builder in the Kingdom of Hungary.⁷⁷ Many of these improvements were considered brilliant in the history of organ building. He constantly developed the technology. At first, he produced organs with only 12-20 registers, later with 40 registers and in case of the Budapest Basilica it was a 65-register organ. The Angster factory was more like a moderate sized factory rather than a large one, but with its up-to-date technology and innovations it wrote its name into the history books of the city. The founder and factory owner Angster died in 1918 and his two sons (Emil and Oszkár) inherited after him.⁷⁸

5. Summary

Pécs was a rather quickly developing city in the second half of the nineteenth century. Its population reached 50,000 before WWI. Industrialisation clearly played the key role in the city's development. Industrialisation in Pécs produced no colossal industrial plants, but played

⁷⁰ Angster, J. (1999): 74-75.

⁷¹ Thirring, G. (1912): 303.

⁷² Pécs Lexikon (2010): Vol.1. 39.

⁷³ Várady, F. (1896): 605.

⁷⁴ Angster, J. (1999): 79.

⁷⁵ Ibid: 78-81.

⁷⁶ Pécsi Közlöny, 07. 04. 1903.

⁷⁷ Szita, L. (1995): 133-134.

⁷⁸ Pécs Lexikon (2010): 1. 40.

a decisive role in employment, income generation, value system and mentality. In the period examined, the quickly expanding manufacturing industry was responsible for the dynamics of the industrial sector. In half a century world famous enterprises and innovations came to life in the city. The industrial capacities created in this era lived through the great difficulties of the 20th century, including wars, crises, and the planned economy. Some of them still operate in smaller size and under different ownership; still influencing the city and the function of the city's society. The enterprises and industrial innovations presented aided Pécs to strengthen its position as a regional centre and made the city more famous.

Bibliography

- Ágh, T. (1894), *Emléklapok Pécs szabad királyi város múltjából és jelenéből*. Pécs: Taizs József
- Angster, J. (1999), *Az Angster-család és az Angster orgonagyár történetéből*, in: Szirtes Gábor – Vargha Dezső (eds.), *Angstertől Zsolnayig*, Pécs: P-BKIK, Pro Pannonia
- Angster, J. (2017), *Életrajzom. Egy XIX. századi orgonaépítő naplója*. Budapest: Rózsavölgyi és Társa
- Antalfy, Gy. (1982), *Reformkori magyar városrajzok*. Budapest: Panoráma
- Babics, A. (1952), *A pécsvidéki kőszénbányászat története*. Budapest: Akadémiai Kiadó
- Bácskai, V. (1988), *Városok és városi társadalom Magyarországon a XIX. század elején*. Budapest: Akadémiai Kiadó
- Bairoch, P. (1976), *Die Landwirtschaft und die Industrielle Revolution 1750–1914*, in: Cipolla, C. M. - Borchardt, K. (Hg.), *Die Industrielle Revolution. Europäische Wirtschaftsgeschichte. Band 3*. Stuttgart: Fischer
- Berend, T. I. - Ránki, Gy. (1987), *Európa gazdasági fejlődése a 19. században*. Budapest: Gondolat
- Bobrovsky, I. (1971), *Zsolnay kerámiák az 1885-ös országos általános kiállításon*, in: Hárs Éva – Mándoki László (eds.), *100 éves a Pécsi Porcelángyár*, Pécs: FIM Pécsi Porcelángyár, JPM
- Cameron, R. (1994), *A világgazdaság rövid története a kőkorszaktól napjainkig*. Budapest: Maecenas Könyvkiadó
- Crafts, N. F. R. (1985), *British Economic Growth during the Industrial Revolution*. Oxford: Clarendon
- Déri, J. (1977), *A pécsi kesztyűipar kialakulása és története a Hamerli kesztyűgyár államosításáig*, in: Déri János (Ed.), *A Pécsi Kesztyűgyár története 1861–1976*. Pécs: Pécsi Kesztyűgyár
- Déri, J. – Gál, É. – Márfi, A. (2016), *Kesztyűkönyv*. Pécs: JPM
- DGT (1894), *Az I. cs. k. szab. Dunagőzhajózási Társulat Pécs melletti kőszénbányái*. Pécs: DGT
- Erdősi, F. (1986), *Baranya közlekedési hálózatának fejlődése a XIX. század második felében*, in: Szita László (Ed.), *Baranyai helytörténetírás 1985–1986*. Pécs: BML
- Fényes, E. (1851), *Magyarország geographiai szótára. I-II. kötet*. Pest: Nyomatott Kozma Vazulnál
- Good, D. (1986), *Der wirtschaftliche Aufstieg des Habsburgerreiches 1750–1914*. Wien-Köln-Graz: Böhlau
- Huszár, Z. (2013), *A Duna vonzásában. Fejezetek a Dunai Gőzhajózási Társaság történetéből*. Pécs: Virágmandula Kft.
- Jávor, K. (2004), *A Zsolnay család. Iparosok és művészek öt nemzedéke*, in: Sebők Marcell (Ed.): *Sokszínű kapitalizmus*. Budapest: HVG Kiadó
- Kaposi, Z. (1996), *A gazdasági folyamatok és a közgazdasági gondolkodás kapcsolata a 18. században*. Pécs: JPTE Kiadó.
- Kaposi, Z. (2006), *Pécs gazdasági fejlődése 1867–2000*, Pécs: P-BKIK
- Kaposi, Z. (2017), *Pécs gazdasági helyzete a 19. század közepén*, *Közép-Európai Közlemények* 10. (2017) No. 37. 2. 7–22.
- Kaposi, Z. (2019), *Uradalmak, földbirtokosok és birtokforgalom a Dél-Dunántúlon a 19. században*, *Mezőgazdaságtörténeti Tanulmányok* 14. Budapest: Magyar Mezőgazdasági Múzeum és Könyvtár

- Katus, L. (1989), *A Monarchia közös piaca*. Magyar Tudomány 34. (1989) 10-11. 808-820.
- Katus, L. (1995): *Pécs népessége 1848–19120 között*, in: Vonyó József (Ed.), *Tanulmányok Pécs történetéből I. Pécs népessége 1543–1990*. Pécs. 37-94.
- Komlos, J. (1990), *Az Osztrák–Magyar Monarchia mint közös piac*. Budapest: Maecenas
- Kopasz, G. (1968), *A répacukorgyártás kezdete a Dél-Dunántúlon (1837–67)*, in: Szinkovich Márta (Ed.), *Baranyai helytörténetírás 1968*. Pécs: BML
- Kovács, A. (1973), *Adatok a pécsi filoxéravész történetéhez*, in: Szita László (Ed.), *Baranyai helytörténetírás 1972*. Pécs: BML
- Kövér, Gy. (1982), *Iparosodás agrárországban*, Budapest: Gondolat
- Landes, D. (1986), *Az elszabadult Prometheus. Technológiai változások és ipari fejlődés Nyugat-Európában 1750-től napjainkig*. Budapest: Gondolat
- Lenkei, L. (1922), *Negyven év Pécs életéből. Egy pécsi újságíró visszaemlékezései*, Pécs: Pécsi Irodalmi és Könyvnyomdai Részvénytársaság
- Mattyasovszky-Zsolnay, T. (1999), *Adatok a pécsi Zsolnay-család történetéhez*, in: Szirtes Gábor – Vargha Dezső (eds.), *Angstertől Zsolnayig*, Pécs: P-BKIK, Pro Pannonia
- Orosz, I. (1989), *A mezőgazdaság modernizálása*, Magyar Tudomány 34. (1989) 10-11. 821-831.
- Overton, M. (1996), *Agricultural Revolution of England. The transformation of the agrarian economy 1500–1850*. Cambridge: University Press
- Pálfy, A. (2002), *A pécsi székesegyház önálló uradalmi szénbányászata (1798–1868)*, in: Szirtes Gábor – Vargha Dezső (eds.), *Iparosok és bányászok a Mecsekalján*. Pécs: P-BKIK, Pro Pannonia
- Ránki, Gy. (1983), *Az angol ipari forradalom történetéhez*, in: Ránki Gy. (Ed.), *Mozgásterek, kényszerpályák. Válogatott tanulmányok*, Budapest: Magvető
- Rempert, Z. (1996), *A reformkor kiemelkedő ipari kísérlete: a Csetnek Pécsi Vasgyár*. Századok 130. (1996) 1. 105-118.
- Romváry, F. (2011), *Zsolnay*. Debrecen: Tóth Könyvkereskedés és Kiadó Kft
- Rúzsás, L. (1954), *A pécsi Zsolnay-gyár története*. Budapest: Akadémiai Kiadó
- Schumpeter, J. A. (1980), *A gazdasági fejlődés elmélete*, Budapest: KJK
- Sey, G. (2005), *A pécsi Hamerli–Hunor kesztyűgyár. Emlékezés a cég alapításának 142., a gyár megnyitásának 100. évfordulójára*, in: Szirtes Gábor – Vargha Dezső (eds.), *Mozaikok Pécs és Baranya gazdaságtörténetéből*. Pécs: P-BKIK, Pro Pannonia
- Szirtes, G. (1998), *Pécsi Panteon. Portrék a millenium korából*, Pécs: Pro Pannonia
- Szita, L. (1995), *A pécsi vállalkozó polgárság és a helyi hatalom a 19. században*, in: Fodor Zsuzsa (Ed.), *Vállalkozó polgárok a Dunántúlon a dualizmus korában*. Veszprém: Laczkó Dezső Múzeum
- Thaer, A. (1810), *Grundsätze der rationellen Landwirtschaft*, Berlin: Universität Berlin
- T. Mérey, K. (1999), *Baranya megye ipara (1850–1914)*, in: Szirtes Gábor – Vargha Dezső (eds.), *Angstertől Zsolnayig*, Pécs: P-BKIK, Pro Pannonia
- Turner, M. E. (1989), *Parliamentary Enclosures: Gains and Costs*, in: Digby, A. – Feinstein Ch. (eds.), *New Directions in Economic and Social History*. London: Macmillan
- Várady, F. (1896), *Baranya multja és jelenje*, 1-2 kötet. Pécs: Telegdi Ármin Könyvnyomda
- Vargha, D. (1999), *Zsolnay Miklós életútja (1857–1922)*, in: Szirtes Gábor – Vargha Dezső (eds.), *Angstertől Zsolnayig*. Pécs: P-BKIK, Pro Pannonia
- Vörös, A. (1999), *Jánosi Engel Adolf (1820–1903)*, in: Font Márta – Vonyó József (eds.), *Tanulmányok Pécs történetéből 5-6*. Pécs: Pécs Története Alapítvány
- Zsolnay, T. (1974), *Zsolnay. A gyár és a család története 1863–1948*, Budapest: Corvina

Sourcebooks and Statistics Cited

Foglalkoztatás (1900), *A magyar korona országainak 1900. évi népszámlálása. 5. A népesség foglalkozásának némely részletei és a vállalati statisztika*, Budapest: KSH, 1906.

Foglalkoztatás (1910), *A magyar szent korona országainak 1910. évi népszámlálása. 3. A népesség foglalkozása részletesen és a vállalati statisztika*, Budapest: KSH, 1914.

Nagy, L. (1828), *Notitae politico-geographico statisticae inclyti regni Hungariae partimque eidem adnexarum. I-II.*, Buda: Landerer

Pécs ezer éve (1996), Márfi A. (Ed.), *Pécs ezer éve 1009-1962*. Pécs: Pécs Története Alapítvány

Pécs Lexikon (2010), Romváry Ferenc (Ed.), *Pécs Lexikon I-II*. Pécs

Thirring, G. (1912), *A magyar városok statisztikai évkönyve. 1-2*. Budapest