

population, and socio-political factors, these countries are very attractive for medical companies, but significant impediments are the cultural differences, infrastructure, and even climate.

## **2. Analysis of the healthcare market in the region of South and East Asia**

Products and items of hospital equipment belong to the healthcare market in a broad sense, which is considered as one of the biggest in terms of the value areas of business in the world.

Global expenses on healthcare in 2015 amounted to around 7 billion USD, and in 2020 they are expected to reach an impressive amount of 8.7 billion USD, which will consist of around 10.5% of the gross world product (Deloitte, 2018). The main factor which contributes to this increase is longer life expectancy, 72 years on average for all countries in the world, previously just 67 in 2010. It is estimated that in 2020 over 604,000,000 people in the world, that is around 8% of the population, will be over 65 years old (OECD, 2018). These figures make the healthcare market, and manufacture of the hospital equipment (which constitutes the healthcare market segment) along with it, rise dynamically and create chances for companies to achieve high revenue, especially due to the fact that such a fast growth in demand for medical care among people in the world requires many changes that increase the efficiency of the healthcare.

Manufacture of equipment for operating rooms is strongly diversified geographically. According to the report Operating Room Equipment Market Analysis and Segment Forecasts (2017), the biggest area in terms of value in 2019 was North America, with a share in the market of around 37.28%, which is mainly the result of the program for the modernisation of operating rooms, a rise of outpatient medical care units, and an increase in the number of surgeries. However, it is worthwhile to focus on South and East Asia, which took second place in terms of market share in 2016, and whose estimated average compound annual growth rate CAGR is 7.8%, which makes it the fastest growing market in the world. It is one of the reasons why in the next part of the paper the expansion of the Polish company Alvo LLC to the selected countries in those particular regions will be analysed.

The most important growth factors in the countries of South and East Asia are the improvement of health care infrastructure, an ageing society, and

growing investments of government bodies and institutions for health care (Grand View Research, 2017). An important factor is also so-called medical tourism, and countries of South and East Asia are ones of the most often chosen destinations.

## **2.1. Structural analysis of equipment for the operating theatres segment**

In one of the models used for the measuring of competitive intensity in a given market segment, it is the result of the economic structure of the segment. According to this model, the condition of competition is the product of five basic elements, i.e. the threat of new entrants, the bargaining power of suppliers, the bargaining power of buyers, the threat of substitutes, and industry rivalry.

The first element is the threat of new entrants. In principle, a new entrant brings a new production capacity, new resources and an intent to gain a share of the market. In effect, prices on the market often fall, which causes a decrease in the profitability of other firms. The threat of new entrants to a given market segment depends on barriers to entry, which can include among others economy of scale, access to distribution channels, high initial costs, government policy, capital needs, or the diversification of products. In the case of the manufacture and sales of the equipment for operating rooms, the threat of new entrants is small due to the very cost-intensive character of this segment. Strict regulations regarding acceptance and certification of products effectively discourage new players from entering. Also a formation of an effective and developed distribution channel poses a significant challenge for new entrants, as the segment of operating equipment is relatively closed, and getting contacts takes a lot of time, work and patience, especially in countries with a strong relation culture (to which the group of countries South and East Asia belong), characterized by considerable reluctance and mistrust for doing business with new, foreign partners.

The second factor is the bargaining power of suppliers. Suppliers can use their bargaining power over buyers by increasing prices or decreasing the quality of sold products and services. In the case of the segment of equipment for operating rooms, the bargaining power of suppliers is moderate. They provide resources such as rubber, steel, metals, and aluminium as well as medical polymers. What is characteristic for this market segment is a high

number of suppliers of the resources, which decreases their bargaining power. Yet another set of entities should be differentiated from the group of suppliers, which provide specialist devices, resources or software essential for patient monitoring equipment or operating robots. Suppliers of such highly specialized products have a much higher bargaining power from the other group, this is why the final assessment of this power is moderate.

Another analysed factor is the bargaining power of buyers. High bargaining power of buyers' manifests in pressure for a decrease of prices, an increase of quality and better service. A group of buyers is especially strong when it is concentrated or when it purchases very large amounts of products in comparison to the volume offered for sale. In the case of the segment of operating rooms equipment, this factor can be assessed as moderate. This is mainly a result of the fact that the number of companies which offer specialist products is relatively small. On the other hand, the number of distributors who can find successive markets for their firms is relatively big. A factor which increases the bargaining power of buyers is the possibility of the lease and easy resale of once purchased equipment to others.

The fourth element of the model is the threat of a substitute. Substitute products limit potential markets in a sector, e.g. by determining the threshold for prices, limiting at the same time a possibility of raising the prices by players in a given segment. The more attractive the substitutes in terms of quality, efficiency, and prices are, the more limited markets become. Identification of substitutes relies on finding other products, which have the same function as products of a given market. The segment of operating room equipment is characterized by a small threat of such products. In principle, the threat of substitutes from outside does not exist, and the only threat comes from within the sector itself—e.g. the possibility of using one endoscope in many different endoscopic procedures (Grand View Research, 2017).

The last element of the model is industry rivalry from within a sector. Competition between entities in a given market segment relies on the readiness to gain the best position, by an advertising war, price competition, or enlarged range of customer service, launching of new products, broadening of warranty or servicing etc. Rivalry appears when one or more competitors succumb to the pressure of a situation or perceive an occasion to increase their own competitive position. In principle, the competitive actions of one company from a sector affect other companies. They can be stimulated to commence actions which neutralize the activity of the rival or to retaliation. In each of these cases it means that companies from a given segment are

dependent on / independent from one another and such a pattern of activities can lead to a situation when the initiating company and the whole sector find themselves in a better position, or worsen it. Rivalry within the sector with its equipment of operating rooms can be assessed as high, and that is why it will be described in more detail. This segment is relatively highly fragmented with a few strong, international corporations which offer their products, such as Koninklijke Philips N.V., Medtronic, Getinge AB, Stryker, Siemens Healthineers, KARL STORZ GmbH, GE Healthcare, Dräger, Hill-Rom. Manufacturers work hard to increase their market shares through strategies such as the development and improvement of existing products, or price competition which deepens the rivalry between present players.

## **2.2. Factors of surroundings which determine activities in the segment of operating room equipment**

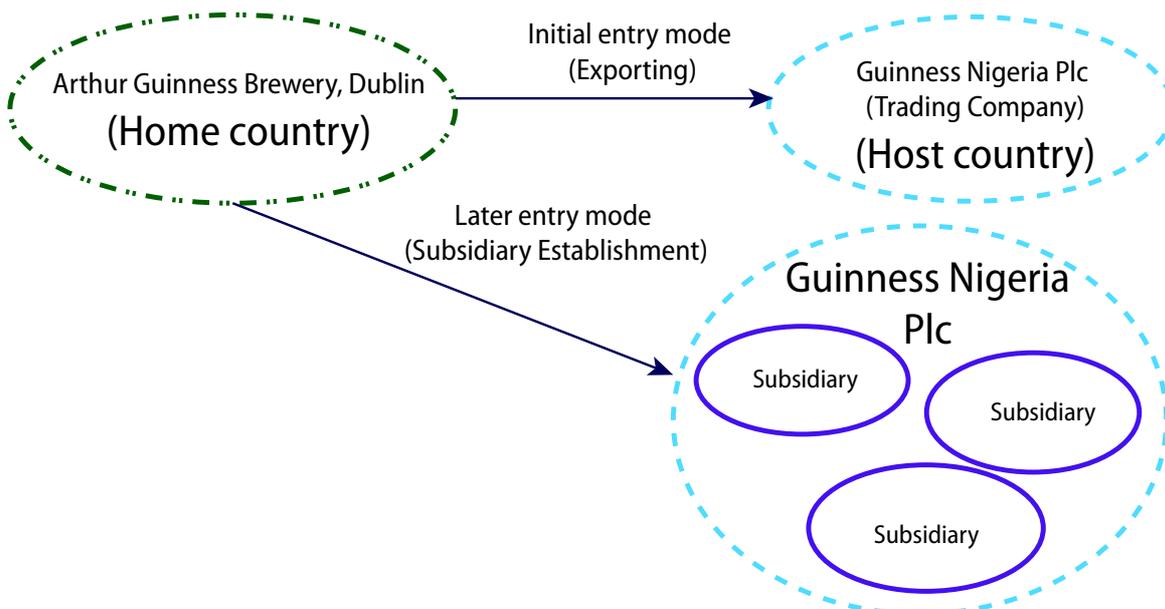
In order to prepare a strategic analysis which aims to take specific decisions concerning the activities of companies, a series of factors (elements of the surroundings) which can determine these activities is considered.

In the context of the segment of hospital rooms' equipment in the South-East Asia region (attention will focus mainly on India, Indonesia, and China), one of the first groups of factors are political factors, which relate to the political situation and legal regulations in the region. Undoubtedly, the strong point of the analysed market segment is the initiatives undertaken by governments of selected countries, which purpose is to improve the accessibility and quality of medical services. For example, a program National Health Mission has been realised in India since 2013, which is overseen by the Ministry of Health and Family Welfare. The main aim of this project is to improve the health situation of the citizens of India, and the actions which lead to it include among others an increase of medical units and improvement of services by the purchase of modern equipment. Also, since February 2018 the National Deworming program has been realised, which purpose is to ensure the high quality of children's health protection. The India Brand Equity Foundation (2018) estimates that over 322 million children make use of the program. Similar initiatives are implemented by the Chinese government—since the second decade of the 21st century, the health sector has undergone reforms based on the 'Four Beams' model, which refers to four key elements: providing equal access to the healthcare for citizens of towns and villages, ensuring high quality of

brand major markets include Great Britain, Ireland, Nigeria, the United States, and Cameroon ([www.diageo.com/en/our-brands/brand-profiles/guinness](http://www.diageo.com/en/our-brands/brand-profiles/guinness)).

Guinness Nigeria’s Lagos brewery plant became the first Guinness brewery outside the British Isles on the 30th of November 1963. Before this time, in the 19th century, Guinness Stout was imported into Nigeria from Dublin (Guinness Nigeria, 2018). The distribution of this brand within Nigeria was handled by Guinness Nigeria, which acted as a trading company established in 1950 for this purpose. In 1965, Guinness Nigeria became listed on the Nigerian Stock Exchange (NSE), making Nigeria the second largest market for Guinness worldwide ([www.guinness-nigeria.com](http://www.guinness-nigeria.com)).

Due to the recency of Nigeria’s independence in 1960, the country needed reasonable investments in virtually all sectors of its economy in order to grow after the exit of the British colonialists. The establishment of a subsidiary brewery plant in Lagos in 1963 and the subsequent steady growth of the Guinness Stout and Harp Lager spurred Guinness to build more breweries in Nigeria. In 1974 Guinness commissioned the Benin plant where the Harp Lager beer was produced. In 1978 the Benin brewery was expanded to produce the Guinness Stout. In 2004 Guinness Nigeria commissioned the Aba brewery in Abia state. At present, the company operates from the Ogba (Lagos), Benin (Edo) and Aba (Abia) breweries with a combined installed production capacity of 6 million hectolitres and about a 74 percent total utilisation capacity in the financial year ending 2015 (Augusto & Co., 2016) (see Figure 3).



**Figure 3.** Guinness Nigeria entry modes into the Nigerian market

Source: Own study (on the basis of [www.Guinness-nigeria.com](http://www.Guinness-nigeria.com)).

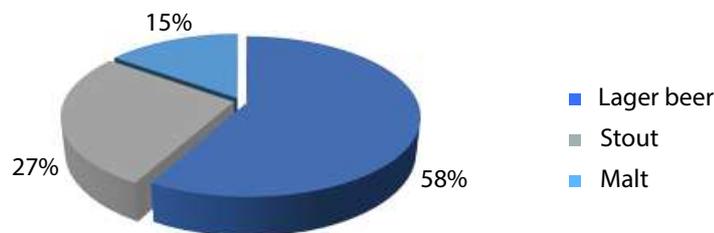
**Table 3.** Guinness Nigeria breweries and their locations

Brewery	Location
Ogba (Lagos State)	Acme road, Industrial Estate, Ogba, Lagos state
Benin (Edo State)	Benin - Asaba road, Oregbeni Industrial Estate, Ikpoba Hill, Benin City, Edo state
Aba (Abia State)	Osisioma Industrial Layout, Aba, Abia state

Source: (Guinness Nigeria, 2018).

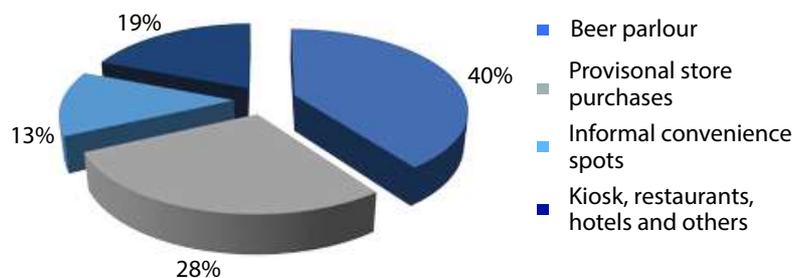
### 3. Guinness Nigeria: Market share, portfolio and brand values

Nigeria has a long history of brewing which dates back to the establishment of the Nigerian Breweries Limited in 1946 as the first brewer in the Nigerian brewery industry. According to Nwankwo and Anyanwu (2015), beer accounts for 96 percent of all local alcohol sales in Nigeria. The scholars further revealed that beer consumption in Nigeria between 2010 and 2015 witnessed an average growth rate of 10%, with a projected compounded annual growth rate (CAGR) of 13% by 2025 (Figure 4 and 5). This makes the brewery sector one of the fastest growing sectors in Nigeria’s economy.



**Figure 4.** Total beverages consumption

Source: (Nwankwo & Anyanwu, 2015).



**Figure 5.** Beverages consumption channels

Source: (Nwankwo & Anyanwu, 2015).

Nigeria is the most populated country in Africa, with a significant sized population of youth. This group of young people forms a great percentage of the alcohol consuming population in Nigeria. According to Nigeria's 2016 population figure, there are 188.2 mln people in Nigeria, of which 108.59 mln, representing 57.70%, fall within the ages 15–64 years to form the largest chunk of the demography (Olanrewaju et al., 2018). This large youthful population accounts for over 80% of alcohol consumers, which provides opportunities for breweries in Nigeria to thrive (Table 5). This means that Nigeria's brewery space still remains largely underexploited, which creates room for further expansion (Nwankwo & Anyanwu, 2015).

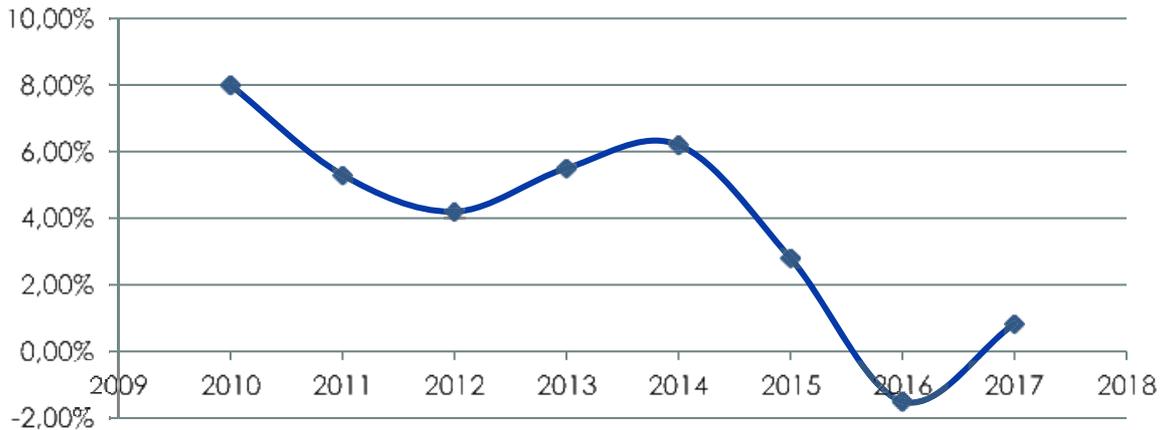
**Table 5.** Nigeria's projected population (2012–2016)

Year	Projected figure
2012	170,157,060
2013	175,690,143
2014	181,403,148
2015	187,301,926
2016	193,392,517

Source: (National Bureau of Statistics, 2017).

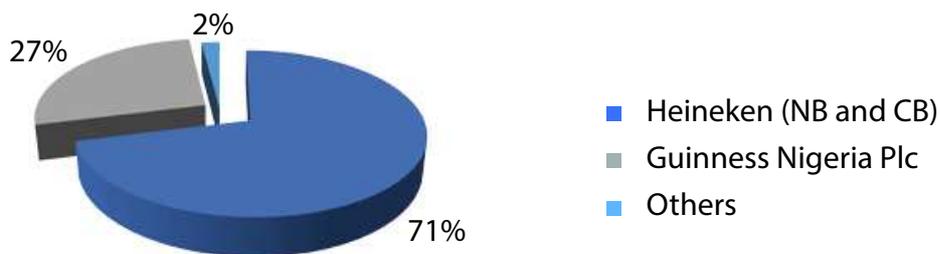
Steady growth in Nigeria's GDP since 2010 has also contributed immensely to the growth of the beverages industry in recent times. Between 2010 and 2014, the average GDP growth rate in Nigeria was 5.84% per annum. This growth indicated a significant increase in the disposable income of Nigerians during this period. During the 2016 economic recession in Nigeria, the GDP contracted by –1.5%, which negatively affected the purchasing power of Nigerians (Figure 7). The recession was as a result of a significant drop in global oil prices, foreign currency shortages, an energy deficit and structural constraints in the nation's economy (Central Bank of Nigeria, 2016). This trend is reversing with a 0.83% growth in the nation's GDP in 2017. This will hopefully translate to significant sectoral improvements in the nation's economy later on.

Guinness Nigeria, a subsidiary of the Diageo Group controls 27% of the brewery market share in Nigeria (Ianree, 2016); second behind Heineken, which has a combined share (Nigerian Breweries and Consolidated Breweries) of 71% of the entire Nigerian beer market. Guinness tops the stout market by its net sales value (Nwankwo & Anyanwu, 2015).



**Figure 7.** Nigeria's GDP growth rate at 2010 Constant Basic Prices (percentage points)

Source: (Central Bank of Nigeria, 2014, 2017).



**Figure 8.** Nigerian beer market share (%)

Source: (Nwankwo & Anyanwu, 2015).

In the last couple of years, Guinness Nigeria has grown from a mere trading company in 1950 to “an iconic African company, renowned across the continent and internationally for our (its) high quality brands” in recent years ([www.guinness-nigeria.com/our-business/](http://www.guinness-nigeria.com/our-business/)). The company prides itself on being in the largest market in Africa. According to a former CEO of the company, Ndegwa Peter, “Nigeria is the largest single market within our Africa business... Guinness Nigeria plays a big part in this” (Business Year, 2017).

The brand portfolio of Guinness Nigeria cuts across both alcoholic and non-alcoholic segments, thereby making the company a unique one within its sector of operations (Table 6). According to Ndegwa Peter, “Guinness Nigeria is the only total beverage business which has spirits, beer, and soft drinks, giving it a bit more opportunity to serve customers” (Salako, 2018).

**Table 6.** Guinness Nigeria brands portfolio

Segment / Category	Brand
Scotch whisky	Johnnie Walker
Vodka	Smirnoff
Liqueur	Baileys
Gin	Gordon's Dry Gin
Local spirit	Mr Dowell's
Beer	Harp, Guinness, Satzenbrau, Orijin
Non-alcoholic	Dubic malt, Malta Guinness
Ready to drink	Orijin non-alcoholic zero

Source: ([www.guinness-nigeria.com/our-brands/brand-explorer/#](http://www.guinness-nigeria.com/our-brands/brand-explorer/#)).

The production and marketing of many beverages across different segments of the beverage sector by Guinness Nigeria gives the company a competitive edge within the Nigerian and African markets. This helps the company to reach many consumers and also a berth in many markets, taking advantage of Nigeria's youthful population and strategic brand position in Africa. This drive by the company is embedded in its core operational brand values.

**Table 7.** Guinness Nigeria brand values

<b>Purpose</b>	celebrating life every day, everywhere
<b>Vision</b>	to be the best performing, most trusted and respected consumer products company in Nigeria
<b>Core values</b>	(i) being passionate about customers and consumers (ii) giving people freedom to succeed (iii) being proud of what we do and how we do it (iv) strive to be the best (v) value each other

Source: ([www.guinness-nigeria.com/our-business/our-values/](http://www.guinness-nigeria.com/our-business/our-values/)).

#### **4. Guinness Nigeria: Survival in Nigeria based on the chosen mode of entry and business sustainability strategy**

As established in Figure 14 above, Guinness Nigeria initially entered the Nigerian market with the export of the Guinness stout brand from Dublin to Nigeria in the 1950s. After Nigeria's independence, Guinness Nigeria commissioned its

## Short introduction

Hugger's brewery in Poznan—a place where beer was brewed in the 19th century—was first a 'centre of ruin, of the homeless and the scrappies', a spot in the city avoided by all, just to become the city's showcase, its business, commercial and cultural centre, a few years later. How did this happen?

Looking at the photos (Figures 2 and 3), one cannot shake the feeling that such a transformation—from ruin into 'SOMETHING'—was almost impossible, or extremely difficult, to say the least. What was the origin of this special place? Where is the key to its undeniable business, financial and image success?

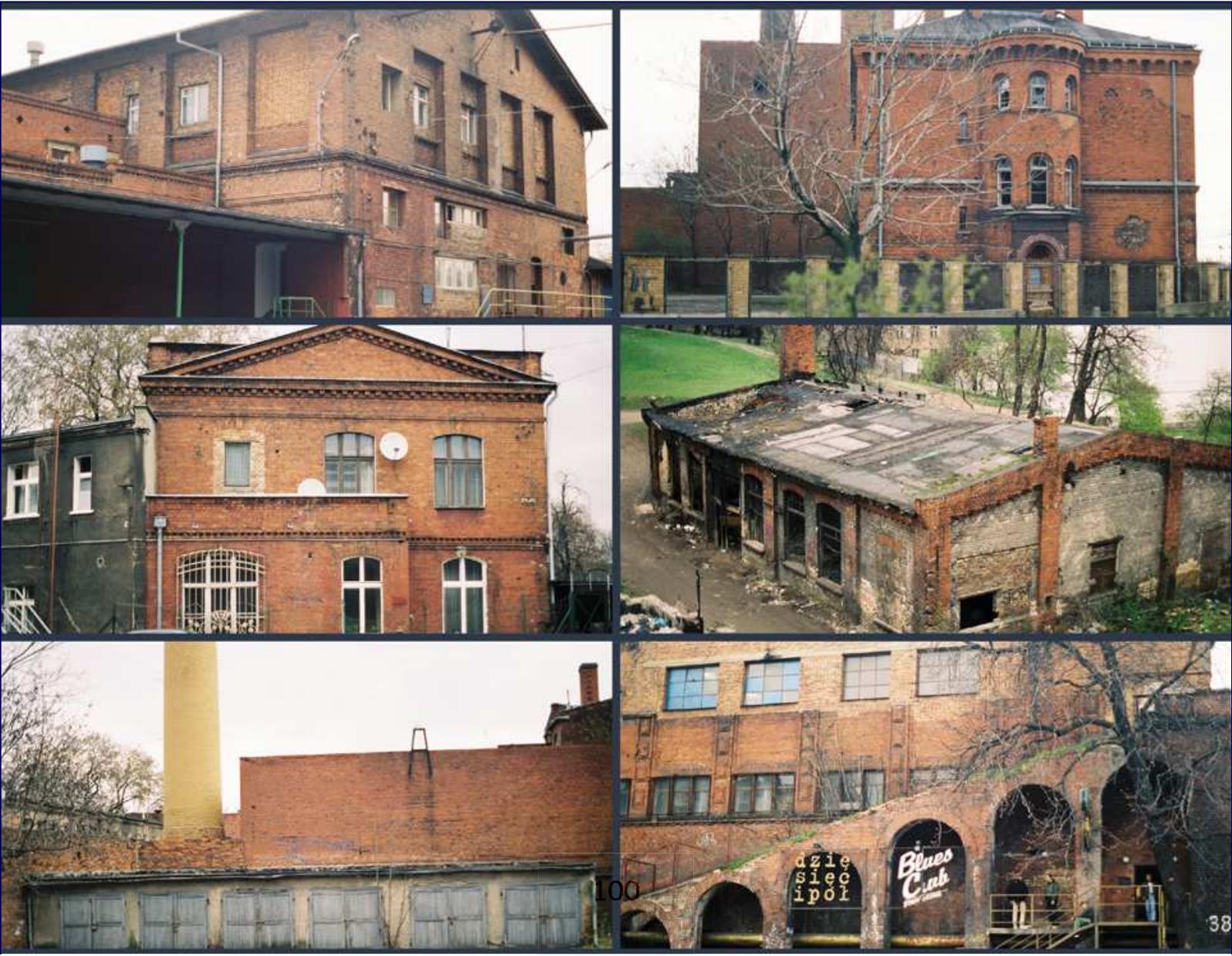
See a film on the [Stary Browar](#), English

See the architecture of the [Stary Browar](#), Polish

See a film on the construction of the [Stary Browar](#), Polish

See a film on the [Stary Browar](#), English

**Figure 2.** Hugger's brewery from outside (1998)





**Figure 3.** Hugger's brewery from inside (1998)

### The origin

In December 1998 Fortis company, which belonged to Grażyna Kulczyk, bought what was left of the old brewery of the Hugger brothers. The original plan included revitalisation and opening up of the place for artists. This is how Grażyna Kulczyk recollects the beginnings of Stary Browar: "In the moment when I was buying the brewery, it was an impulse which I felt momentarily. I was standing in the brewery's courtyard and then I knew I had to do something wonderful with this place because it deserved it. It was an old building, which required exceptional care. The idea of what to install there was complicated. I was aware that this task would be very difficult."<sup>6</sup>

<sup>6</sup> G. Kulczyk, Internal materials: Kulczyk Foundations / Art Stations Foundations.

The first conception concerned only the revitalisation of the Słodownia<sup>7</sup> (the malt house), which was supposed to become an incubator hub for artists. Economic reasons, first and foremost, limited external funds for an insecure and non-standard investment, and made the owner look for alternative solutions. In particular, the investment had to be profitable and had to provide a steady cash flow. Among the possible solutions, three business functions which met the above-mentioned requirement were taken into account:

- residential function,
- office function,
- commercial function.

**Table 1.** Alternative business functions of Stary Browar

<b>Business function</b>	<b>Argument for</b>	<b>Arguments against</b>
Residential function	steady income	<ul style="list-style-type: none"> <li>• unfavourable infrastructural and architectural conditions of the brewery</li> <li>• unstable situation on the real estate market in the moment of decision-making</li> </ul>
Office function		<ul style="list-style-type: none"> <li>• infrastructural and architectural conditions of most of the brewery's elements would be difficult to adapt for office functions</li> <li>• start of the construction of the Business Centre in a direct vicinity of the brewery</li> </ul>
Commercial function		<ul style="list-style-type: none"> <li>• a negative perception of a shopping centre connected with art—based on the experience from the Polish market of the time</li> <li>• an issue of the 'critical mass' which could ensure economic and financial effectiveness of the investment</li> </ul>

Each of the possible business functions which could be used had its faults (see Table 1). However, in the case of the last of them—the commercial function—the faults seemed the easiest to decrease or even eliminate. There was one condition: the building of a shopping centre which would be, to speak plainly and a bit loftily, beautiful, whose climate and atmosphere make the customers feel the same magic which Grażyna Kulczyk felt while deciding on the purchase of the brewery. Therefore, the supposition that the commercial function of the object would connect smoothly with its cultural function (at a first glance, a bit less commercial) was made at the very beginning.

<sup>7</sup> The malt house was one of the Hugger's brewery's buildings, together with a bottling plant, a brewhouse, and a boiler house, with an area of 2000 square metres, allocated on four floors.

## Revitalisation: From the Hugger's brewery to Stary Browar, stage I

The mission of Stary Browar is a great starting point for a discussion on the construction of this enterprise:

**Creating a unique modern commercial centre in terms of offer and image, whose functions will satisfy the needs of big city's residents.**

Looking at Stary Browar today, one can wonder to what degree such a mission influenced the course of events. One can also attempt to break the mission down to its individual pieces, from a solely business point of view. The keywords are first and foremost:



**Figure 4.** Keywords of the mission of building Stary Browar

These keywords (see Figure 4) seem to have a fundamental influence on the contemporary Stary Browar. Let us ask why?

Any project, especially a commercial one, should be preceded by a wide-ranging analysis of the initial situation. Such was conducted for Stary Browar. Four main areas of potential problems were defined:

- social problems: 48 tenants who had been living for years in properties located on the premises of the investment and low standard of living (the solution: construction of an apartment building in Poznan at Średnia Street, which provided better living conditions for tenants who would leave the premises and provide persuasion for the tenants to abandon their flats),
- economic and financial problems: low concentration of ownership titles to areas adjacent to the investment, a very bad condition of objects in direct vicinity to the area of Stary Browar, a gradual decline of the prestige of Półwiejska Street as a shopping promenade (the solution: a necessity to act on many fronts),
- legal problems: compulsory cooperation with the monument conservator, coexistence of historical and modern buildings erected in a later period, limitations imposed by land development plans,
- image problems: identification of the area by locals with social pathology, due to the entirely unexploited space in the centre of a big city (the solu-

tion: transformation of the area in a way which would restore aesthetics of the landscape and reversal of the perception of the space in the centre of Poznan).

During renovation, a few postulates were adopted which were later followed consistently during the whole process.

1. Only the materials which were already used in the old brewery, i.e. wood, brick, cast iron, steel, stone, and glass would be utilised. Therefore, it was decided to use those materials which do not undergo the process of ageing in a way which affects the aesthetics of a building,<sup>8</sup> and at the same time refer to the industrial architecture from the period when the Hugger's brewery were erected.
2. Everything which could be preserved from the old buildings, architecture, and even the interior, would be used during the construction of Stary Browar (see Figures 5 and 6).
3. Art and broadly defined culture would be inseparable elements of the enterprise and would be considered in every place where possible (see Figure 8).

Stage I of the realisation of the Stary Browar enterprise was supposed to be also the last because it was not certain whether it would be possible to purchase the plot which allowed for the expansion of Browar for the Passage. Thus, stage I had to be a unified whole, and this is what happened—Dziedziniec Sztuki (the Art Courtyard) has become the key and characteristic element—a place that was to include commercial function and art cohesively (to this day it has this function and still constitutes an original connecting element between the Atrium and the Passage).

While walking on the Dziedziniec Sztuki which opens towards a beautiful park, one can get an impression of being in the city (a conception of a 'city within the city' has been used). We can find here an original city hall, a villa which acts as a substitute for apartment houses, and a tower with a clock, where the original mechanism from 1912 was installed (made by Friedrich Weule's manufacture in Germany). Dziedziniec itself is 'non-economic' if understood directly, from the commercial point of view. The Atrium should be perceived in a similar way (see Figure 7). The Atrium which is built on an opera plan is the central point of the first part of Stary Browar.

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<sup>8</sup> An interesting fact is that in Stary Browar there are no materials typical for shopping centres built at the time, but also contemporarily now, so there are no plasterboards, granitogres, plexiglass, or light suspended ceilings.



The use of electrical devices depicts the purchasing power of households. It is not surprising that in South-East Asia the use of high-wattage devices is limited. Hence, the most popular ratings are 6A and 10A. In Europe, however, it is a 16A MCB that enjoys the largest demand. I firmly believe that pricing, and that includes list price positioning as well, should illustrate the local specificities. Let us take a closer look at the Nessie-shaped curve. In the middle of the price distribution, the MCBs are relatively cheap comparing to other ratings appearing in both tails of the distribution. Between 6A and 20A the positioning is flat. This is a local-specific positioning, not present in the vast majority of European countries.

Do you still remember the case of the rugby shirt prices? In the circuit protection device market, there is no collective price setting. Large and small companies fight for market share using list price positioning. Market leaders are constantly confronted by market challengers via the list price comparison. Interestingly enough, the major producers do not publish the MCB list prices on their Indonesian websites. In some cases, the list prices are available via official distributors. Hager, perhaps Schneider's toughest competitor in this market segment, employs a different, much flatter, shape of the list price distribution (data: PT Oscar Tunastama website). As a competitor and challenger, Hager sets the price of 6A-10A devices approximately 25% below Schneider Electric. A flat positioning suggests a possible advantage for clients differentiating their orders. Let us assume for a moment that the 6A MCB is the most in demand, but 4A MCB enjoys particular attention as well. By keeping the prices of both devices at the same level, producers offer an additional incentive: a bundle purchase consisting of 4A and 6A devices will be even cheaper than the already mentioned 25%. On the other hand, making the most popular device more affordable is a powerful message, too. What is the floor for any comparison? A price of a device bought in hundreds, or a price of a device bought in tens of thousands? Competition in Emerging Markets makes the life of global leaders very difficult. Challengers offer basic products for less money. This is why the leaders differentiate their offers, targeting selected channels with selected ranges. Whatever you wear, whether your favourite rugby player tackles in a shirt with three stripes or three Kiwi birds, it has probably been sewn in South East Asia. Large plants producing rugby shirts (and more) value circuit protection in an utterly different way than households do. Not only an industrial circuit requires different apparatus, the apparatus needs to be of the best quality. And this is where the big companies are very active.

No matter whether big or smaller, every B2B company faces the challenge of list price revision. Not surprisingly, list price revision is also about information. To mitigate the devastating impact of uncertainty, a new price list is communicated to the distributors in advance. If you wonder why, please recall N. Gregory Mankiw's small menu costs. List price change is costly. It requires printing new catalogues or at least preparing them for download. It requires printing new price tags. In a nutshell, adjustment requires time.

We already know that it happens, but how often does it happen? A standard routine is to revise the prices once a year. I gather this revives the concept of menu costs again. Some macroeconomists claim that prices are rigid. In the quiet words of Ball and Mankiw (1994), 'We believe that sticky prices provide the most natural explanation of monetary non-neutrality since so many prices are, in fact, sticky'. Fair enough, prices are revised on the yearly basis, but which prices? And in which countries? Raising the former, sticky-price theorists are blinded by list prices. Their rigidities mean very little to the business dynamics. Comparing to net prices, they play a different role entirely. Because of this role, because of their informative potential, they do not change that often. Most important of all, their changes are not necessarily driven by changes in demand. That obviously is the perfect case of the sticky price—not only the price remains constant for a certain period of time, it is also inelastic.

Figure 3 depicts a case of the sticky list prices of MCBs in Korea between January 1995 and May 2018. It needs to be pointed out here that the Korean monetary and statistical authorities have delivered a tremendous effort in gathering and presenting price time series of such granularity. I only wish other statistical offices and central banks would follow the Korean example.

The bold burgundy line shows the MCB prices (left vertical axis, 2010 = 100), the black line illustrates the annualised monthly inflation (i.e. percentage change in the same period of the previous year). The time span covers the so-called Great Moderation (mid 1990s until 2007), the financial crisis of 2007/8, and the recovery. The dynamics that the PPI displays is technically called level shift. Since 1996 every price change has shifted the price level up. Level shifts are not exceptional to prices, but this particular set of dynamics is in fact unique. The unconditional price change frequencies are striking. During the Great Moderation MCB prices have changed with a probability equal to 0.066. Since 2008 the probability has dropped to 0.040. It means that prices have been revised every 15 and 25 months, respectively. Graphs like this make theorists extremely sceptical towards the market-clearing price.