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END OF DEGREE DISSERTATION

Growth strategies in emerging countries: How Pentair could increase Valve and Control sales in Kazakhstan.

RESUM

El següent estudi utilitza la metodologia de recerca basada en el raonament analític, on a partir d'uns fets i dades reals s'intenta cercar les diferents solucions possibles i la millor per ser aplicada. Aquest plantejament de recerca també planteja descartar opcions que no resulten favorables a l'hora d'establir una solució adequada.

El projecte es centra en l'anàlisi d'estratègies per a països emergents. Es treballa sobre un cas concret, prenent com a objecte d'estudi l'empresa multinacional Pentair. Entre les seves diferents línies de negoci destaca la producció, distribució i venda de vàlvules i controls per a l'extracció de petroli i gas i el seu transport via oleoductes i gasoductes.

En concret, s'estudia la possibilitat d'entrar en el negoci de vàlvules i controls en un mercat emergent com és el Kazakhstan, productor important de gas i del petroli, i on Pentair encara no hi treballa.

La idea de negoci per poder plantejar aquest estudi ha estat obtinguda degut a una visita a la pròpia fàbrica de vàlvules de Pentair a Breda (Països Baixos) en el transcurs de l'intercanvi Erasmus realitzat al primer semestre de quart curs.

PARAULES CLAU

V&C: Valves & Controls. Valve: device that regulates, directs or controls different fluids. Some examples are: gas, liquids, fluidized solids, or slurries. The study focuses on the oil and gas market.

O&G: Oil and Gas energy market

Upstream: oil exploration and production

Midstream: oil transportation (by pipelines, shipment, by road and other)

Downstream: oil refining and processing or gas purification

NPT: Net Present Value

IRR: Interest Rate of Return

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I. INTRODUCTION

The aim of this report is to examine different growing strategies in the emerging market of Kazakhstan. To be more precise, the study will focus on how to increase Pentair's Valve & Control sales in Kazakhstan. The following analysis is motivated by the hypothesis of different ways as regards how Pentair could expand their current position and increase their valves and controls sales in the Kazakhstan oil and gas market. The company called Pentair Valves & Controls has been chosen because it is a global multinational with a global position in the energy and industrial market. Moreover, the company has a suitable background in which a theoretical study can be carried out.

On the other hand, the emerging country of Kazakhstan is a convenient country to study due to its strategic position and having frontiers with major countries such as China or Russia. Therefore, since the company is very international, one of the targets must be to expand global boundaries and look for new opportunities. A PESTLE analysis will be used in order to determine the current and external position of the country. This study is important in order to understand key global issues, studying the most important characteristics of the country, such as its political, economic, social, technological, legal and environmental ones.

What will also be mentioned is the global overview of the company in order to understand in which environment it is established. By looking at this position, a further step is going to be taken by finding the strengths and weaknesses of Pentair, as well as the opportunities and threats. In addition, this dissertation will analyze the competition in the valve and control market, which is one of the most important factors in order to understand which situation Pentair is involved in. Their current and direct competitors are going to be studied and possible expanding strategies as well.

The second part of the project follows with the analysis of a business plan. The structure will start with an explanation of future investment, followed by a hypothetical situation with different scenarios. In order to study this, some forecasts of the sales target will be mentioned, followed by the concepts taken into consideration. In this section, some financial studies will be performed by using the net present value and the interest rate of return that the hypothetical investment would have. The financial section will be followed by the subject of Corporate Finance at *Universitat de Barcelona*. Although the methodology used is based on studying the real situation, the development and deployment will focus on a hypothetical situation. Besides, the study is going to be performed/carried out by an interrelated order with a logical structure.

II. GLOBAL APPROACH

Why has Pentair Valves and Controls has been chosen?

Pentair Valves & Controls is a globally operating company which offers 'inspired solutions for a changing world'. The company has been in the valve and control market for 150 years and needs to extend its current market position. Pentair has been chosen because it is one of the companies that has a **global leader** position in the sale of valves & controls. Moreover, the company needs to put its strengths in order to find **new market opportunities** worldwide. The **target** has been established in order to expand Pentair's current market so as to create more profit, greater future value and benefits. (Pentair - Our history, s.f.)

Having said that, we have to mention that this multinational has a diversification in its production as a result of offering products and services in several industries, such as energy (mining, Oil and Gas, and Power), food and beverages (like agriculture or food-services), industrial (chemical & petrochemical), infrastructure and telecommunications networks. The company also has the dynamics and abilities to develop in the commercial and residential sectors. (Pentair - Industries, s.f.)

Why has Kazakhstan been chosen?

- ✓ Kazakhstan is one of the largest Oil & Gas producers: according to Kazakhstan's "The oil and gas year" data, the country produced 1.79 million barrels per day in 2013. (Kz production increased compared with 2012, in which it produced 1.4 million barrels per day)
- ✓ It is geographically situated between large markets like China, Russia and Europe.
- ✓ It already has existing Oil and Gas extraction infrastructure, as well as transport pipelines and refining plants that are expected to be reinforced in the future.
- ✓ The existing presence of Tyco in the country, recently merged with Pentair in 2012, has helped/will help to establish a preeminent position to discourage other competitors.
- ✓ Other information: (*Appendix: Table 1*) (The Oil and Gas year, s.f.)

2.1. The Research Objective

The global study objective of the following part of the research project is how to sell more valves in the Kazakhstan market. Expanding the Kazakhstan Valve & Control market is important to Pentair in order to achieve an advanced market position ahead of its current competitors, and also to present to its potential new customers.

With this aim in mind, some key business objectives must be mentioned:

Expanding the business line of valves and controls in Kazakhstan

The study objective of the following part of the research project is how to sell more valves in the Kazakhstan market. By analyzing all the different topics related to the exploration stage, we will define how Pentair could achieve the objective of expanding its current presence in the Kazakhstan market by selling valves for the Oil & Gas market.

Increasing the market share in Kazakhstan

As a large multinational, Pentair needs to study emerging countries in order to expand its market position. Discouraging current competitors and looking for new opportunities is one of the approaches in order to increase the market share.

Improving strategic regional expansion

Kazakhstan is a strategic region. It has borders with major countries, which are large consumers of Oil & Gas resources, like China or Russia. Moreover, Kazakhstan is not only a major upstream producer of Oil&Gas, but is also close to other countries that are a good potential market for valves and pipeline control devices.

The Pentair-Tyco merger leverage

The recent Pentair & Tyco merger, which took place in 2012, provides an initial starting point to help Pentair to move forward faster than the rest of its competitors. The existence of a previous Tyco office in Kazakhstan is a great opportunity to establish a competence center for sales, training, maintenance, quality control and support. (Hackley, 2012)

2.2. Business Opportunities

The current subsidiary named Tyco, already established in Kazakhstan, is one of the most important opportunities in order to expand in this emerging country. In addition, in this part, some potential customers are going to be mentioned.

Also, according to the objectives stated before, there are some key points to consider in this exploration:

- ✓ Geographical strategy issues
- ✓ Business opportunities in neighboring countries, also producing Oil & Gas
- ✓ Country strategy and regulation issues
- ✓ Opportunities leveraged in Kazakhstan by the recent Pentair-Tyco merger (2012)

2.2.1 Former Tyco Valves and Controls in Kazakhstan

Tyco International Ltd signed an agreement on March 28, 2012, to merge Tyco's Flow Control with Pentair. The value of this division of Tyco was around \$4,900 million. Lately, the deal merged both companies involved in water and fluid solutions, valves and controls, and equipment protection products. (Brooks, 2012)

Prior to the merger, the original business of Tyco in Kazakhstan was mainly in thermal controls. At that time, Tyco's valves and controls were sold in the Kazakh market mainly **through local distributors**. (Bloomberg, s.f.)

For instance, Pentair Valves and Controls (former Tyco Flow Controls) is now present in the country, providing safety products **through a distributor** (AZ supplier, specialized in full-service oilfield Supply Company) by offering services for all Tyco products in Kazakhstan territory. (AZ Supplier, s.f.)

As a result, despite the existing Tyco office in Kazakhstan (Atyrau), the business concentrated on **thermal controls**, and the valve and control business unit was present through distributors. Because of this:

- ✓ The Research will focus on the Valve & Control Business Units. Other Pentair business units like Process Technologies, Flow Technologies and Technical Solutions will not be considered.
- ✓ The analysis focuses on how to serve from Pentair V&C the expansion of Kazakhstan's key installations. The merger has to be mentioned because it enabled Pentair to increase manufacturing facilities, service centers and cost savings.
- ✓ Tyco has an engineering service based in the Atyrau office, requesting highly trained technical staff.

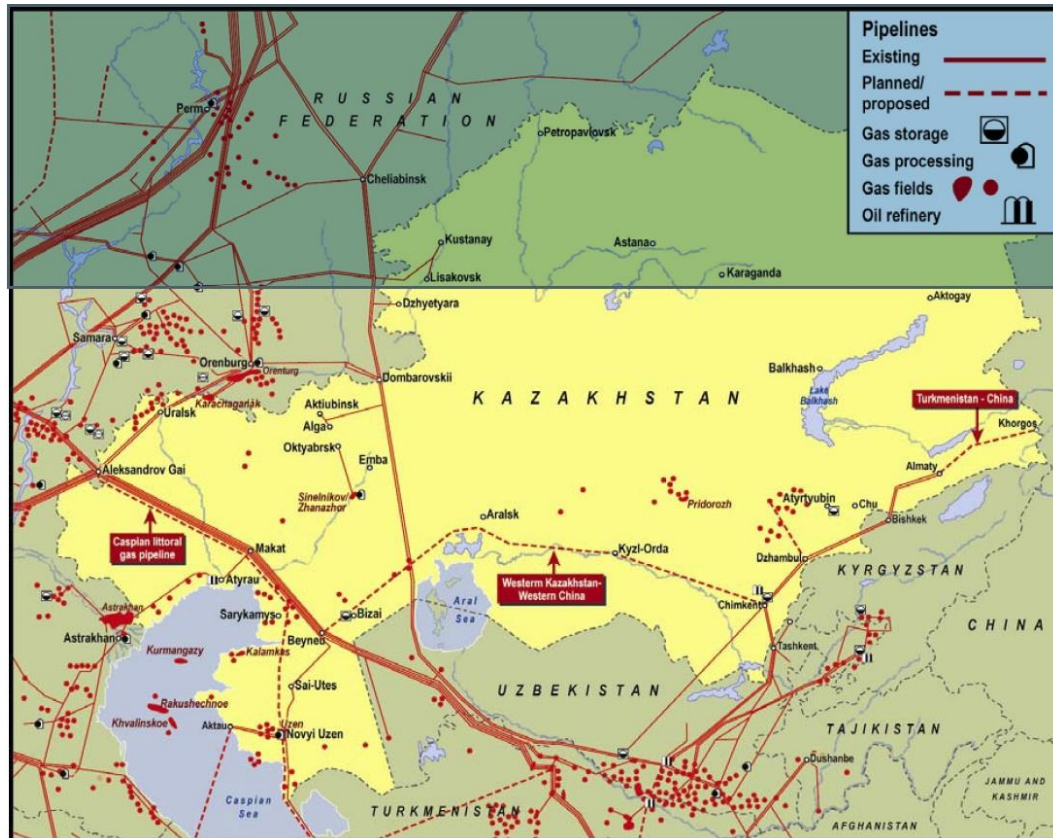
2.2.2. Geographical issues in the region

Regarding the geographical issues, there are some points that need to be highlighted:

- The potential market for Pentair's Valve and Control business unit in Kazakhstan is closely related to the investments in new installations in the country and the maintenance and services provided to the existing ones. If Oil & Gas revenues grow in the country (or region), the opportunities for Pentair will grow as well.
- Kazakhstan is a major Oil and Gas producer that, because of the geographical situation and distance from the Mediterranean Sea, uses mainly pipelines to transport extracted products, thus creating a need for products and services provided by companies like Pentair.
- Kazakhstan has borders with large Oil & Gas consumers like China and Russia, and is also connected with the Caspian Littoral. The existing pipelines linking Kazakhstan, Uzbekistan and Kyrgyzstan, provide a connection to China, one of the world's largest markets consuming energy (Oil and Gas) and raw materials. In spite of the recent slowing of the Chinese economy, it continues to be a huge resource consumer.
- The southern borders connect to other countries like Turkmenistan, Uzbekistan, and Kyrgyzstan, which are also Oil and Gas producers, and thus potential customers
- There is an existing network of operating pipelines to support the midstream of Oil and Gas in the region, which is expected to grow owing to the strategy of the Government and associated upstream and midstream companies.

- Kazakhstan also has projects to set up new refining installations that would also enlarge opportunities in the downstream market.

In the next figure there is a summary of existing Oil and Gas infrastructures, including extraction, pipelines and refining in the neighboring countries:



Pipelines from other countries extracting Oil & Gas to China have to cross Kazakhstan because of the geographical difficulties (the Himalayas) in the south.

Regarding revenues, Kazakhstan oil production is around 50% of other major exporters like Iran or Iraq. The relevant data regarding Kazakhstan's production and reserves are:

Petroleum net liquids exports:	Around 1.4 million barrels per day (2012)
Proven crude oil reserves:	30 billion barrels (2013)
Total oil production:	1.79 million barrels of oil per day (2013)
Proven gas reserves:	1.5 tcm (53 tcf) (2013)
Natural gas production:	18.5 bcm (653 bcf) (2013)

Sources: (The Oil and Gas Year Report, s.f.); (Kazakhstan Oil and Gas Guide, s.f.); (The Economist, s.f.); (KazMunaiGaz, s.f.); (Petrokazakhstan, s.f.); (US Energy Information Administration, s.f.); Map: (Oxford Energy Institute, s.f.)

On the other hand, regarding extraction costs, Kazakhstan spends **around 27\$ per barrel**. This is more than twice the cost per barrel of other exporters like Iran or Iraq. As a result, Kazakhstan has to spend on oil extraction a global amount (in dollars) just a little lower than Iraq or Iran.

The profitability of the oil industry in Kazakhstan is lower, but the complexity, workload and technical resources required for extracting and processing oil is similar to bigger exporters.

Therefore, the potential market for companies supplying products to extract, transport and refine oil is attractive.

The following table shows the extraction cost for USD / Barrel distributed by countries, from United Kingdom to Kuwait.

Country	Extraction Cost USD/barrel
Reino Unido	52,50
Brasil	48,80
Canadá	41,00
EE UU	36,20
Noruega	36,10
Angola	35,40
Colombia	35,30
Nigeria	31,60
China	29,90
México	29,10
Kazajistán	27,80
Libia	23,80
Venezuela	23,50
Argelia	20,40
Rusia	17,20
Irán	12,60
Emiratos Árabes Unidos	12,30
Iraq	10,70
Arabia Saudí	9,90
Kuwait	8,50

Business opportunities in neighboring countries

There is a strong concentration of Oil and Gas extraction and transport infrastructures on the southern borders of Kazakhstan. Also, there are some midstream infrastructures to the north west of the country, mainly in the Russian Federation and in Ukraine. From the geographical point of view, Kazakhstan provides a suitable situation to reinforce Pentair's market position in the region.

III. COMPETITIVE ANALYSIS

The following study will focus on an internal situation about Pentair V&C, showing the range of facts that are **helpful** in order to achieve the objective to expand its Kazakhstan market, and also the different aspects that are **harmful**.

3.1. Pentair Overview

This chapter includes Pentair's internal overview about the strengths, opportunities, weaknesses and threats that need to be analyzed in order to achieve a global outlook of the situation. According to the SWOT analysis:

3.1.1 Strengths

One of the most important strengths of Pentair is its 150 years of **experience**. The company stands out from the rest by having specialized in innovation, design and heat solutions for the industry. The company also produces, manufactures and designs infrastructures for the construction of power plants and water pipelines. (Pentair - About us, s.f.)

Pentair is a **worldwide company** and a global player in the Valves & Controls market, with a particularly good positioning in the Oil and Gas industries.

According to the annual report, nowadays Pentair owns license agreements, **patents** and patent applications. However, the range of intellectual property is expected not to have any effect on the financial position, cash flows or results of operations when the expiration (due to the law conditions) appears. (Pentair - Annual & Other Reports, s.f.)

See the list of examples (*Appendix: Table 2*).

As reported by the Consolidated Balance Sheet from the Pentair Group, the total capital for 2014 has been 1.7 million EUR and a total EBIT of 758.3 million EUR, which supposes a **high financial position**. (SABI UB, s.f.)

On the other hand, Valve & Control sales are not significantly affected by seasonal demand fluctuations, which represents a considerable strength for the company. (Pentair, About us - our history, s.f.) (Pentair Annual Report, s.f.)

3.1.2. Weaknesses

Producing and delivering high quality products comes with a **price**. Not only this, **high costs** can also be found in R+D and labor. Moreover, the company holds a huge range of infrastructures that comes with high initial costs (fixed costs). All these different positions are analyzed as weaknesses for the company.

3.1.3. Opportunities

The opportunities can be seen as the possible **future investment** in a country such as Kazakhstan. The country is a major Oil & Gas producer with borders with major consumers like China, Russia or Eastern Europe. Expanding the current market by incrementing sales in the Kazakhstan market is a strategic position that Pentair can take advantage of.

On the other hand, the valve manufacturing industry is highly fragmented. The market consists of different local and regional companies and also a few global competitors, which therefore can become an opportunity. The market fragmentation can be a motivation to expand their market.

(Pentair, Annual Report, 2015, s.f.)

3.1.4. Threats

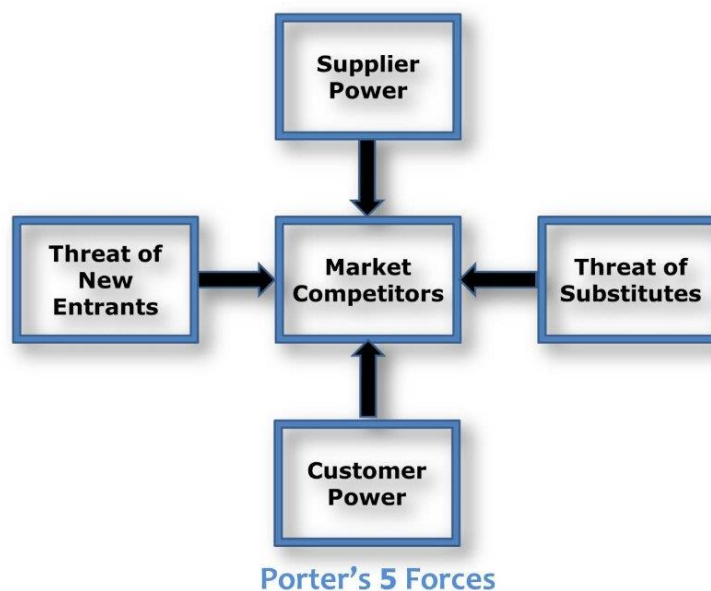
In terms of expanding the Kazakhstan market, its **volatile** economic changes can be the threat that Pentair cannot ignore. The **exchange rate** evolution could affect future investments and thus, competitiveness. Moreover, a strong appreciation of the Kazakhstani Tenge is not expected in the midterm as established in the economic analysis.

Other aspects that could be seen as threats include future legal **changes** and the possibility of new restrictions being implemented, which could therefore slow down the investment.

Competitors like the AVK Group have recently established a factory in Kazakhstan which can be seen as a threat because of Pentair's competitor's strength. (AVK Group , s.f.)

3.2. Porter's Five Forces analysis

The following strategy will use Porter's Five forces in order to establish the level of competition throughout the industry. Rivalry between companies is an important aspect in this study due to the need to find new investment opportunities and their profitability. (Five Forces Model, s.f.)



3.2.1. Threat of new entry competitors

The industry where Pentair is placed does not offer an easy way to enter the market, which means that there is a low threat of new entry competitors:

- High entry barriers and high fixed costs make it complicated for new competitors to enter the current market. The valve industry requires highly specialized knowledge and experience.
- The most important consumer characteristic is their long-term relationship and loyalty. Thus, consumers will not choose a different brand in such a specialized market.

- It is not common to find price reductions in the market due to high quality and differentiated products.
- The industry needs large capital investments

The reasons mentioned above make new entry competitors a minor threat, which in turn makes the valve industry less attractive for other companies.

However, there is a wide range of distributors in the market, which can be considered as a threat. Besides, a possible threat is technology improvements. For instance, when competitors invest in **new technology** or **development**, competitors can use licenses and patents as a threat for Pentair. For example, the Chevron production licensing mentioned before about exclusive distribution to Kazakhstan.

Since there is a possibility of new competitors entering the market, there should be different strategies in order to discourage possible competitors.

Some examples are:

- ✓ increasing the quality of the products
- ✓ offering long-term guarantees higher than competitors'
- ✓ increasing distribution channels in order to reach more customers
- ✓ Increasing Marketing and Advertisement forces

3.2.2. Power of customers

Demand and supply will determine the power of customers. As long as there is more supply than demand, customers will have more power in the business. The valve industry has the main characteristic of the price depending on the O&G market. Countries with a higher level of oil production will demand more Pentair products.

On the other hand, Pentair can achieve more global expansion by using distributors. It can be considered that Pentair has an average of distribution dependency.

Customer power is considered not to be very high due to different aspects. Some of them are:

- Consumers cannot easily change from one company to another, which means that we are talking about long-term relationships.
- Consumers do not buy high product quantities. For instance, Pentair valves and controls are high quality products also with high prices.

- It is also considered that consumers do not know all the prices and costs for every company in the market.

As established before, the price of the products that Pentair sells can be identified by the oil market. Therefore, there is an average price-control position on the part of the consumers.

The following strategies can be considered in order to reduce the power of consumers:

- ✓ Reinforcing the after-sales service all over the globe. Increasing the range of sales offices around the main countries, Pentair could have more control over its customers.
- ✓ Increasing the communication between seller and buyer. By reducing distances from Pentair to the customer by increasing communication, the company can achieve more control.
- ✓ Pentair could also look for more product differentiation
- ✓ Offering more guarantees than competitors could also be a good solution to reduce customers' power.

3.2.3. Threat of substitutive products

It has been considered that there are no substitutive products owing to the industry of the market. Valve and control products are sold in response to a very specific demand which cannot be substituted. This point needs no further analysis because of the nature of the product.

3.2.4. Power of suppliers

The power of suppliers is considered low due to Pentair's worldwide production and manufacturing. The target is to increase the sale of valves in Kazakhstan, with the main objective focusing on the current sales force and reinforcing it. Sales and marketing can be seen as the best option in order to improve the current situation with customers.

However, from a global point of view, Pentair only deal in high quality parts and materials at a competitive price, which means more supplier power for suppliers. For this reason, it cannot be said that there is no supplier power because high quality products lead to more power for suppliers. (PENTAIR Suppliers, s.f.)

3.2.5 Rivalry among existing competitors

This section is the most important due to the intense competition that can be found in the V&C market. The main competitors are: American Cameron International, Emerson Electric, Flowserve and AVK Valves Group. The analysis of each company will be presented in the next part: 3.3 Analyzing main market competitors.

The structure of Porter's Five Forces has been followed by: (López, 2009) (Emprende PYMES, s.f.)

3.3. Analyzing the main market competitors

Four companies have been considered the most important and key dominants according to the Global Industrial Valve Market in Oil & Gas Industry (2015 – 2019) (Markets, 2015). The major vendors are: Cameron International, Emerson Electric, Flowserve and Pentair. Since Pentair is the current company studied, another company will be mentioned as a competitor.

In order of company size and their international presence in the V&C market, the current major vendors are:

- American Cameron International Valve
- Emerson Electric
- Flowserve
- AVK Valves Group

3.3.1. American Cameron International Valve

The American Cameron International Valve company designs, develops, qualifies and manufactures valves for the Oil & Gas market, particularly for the drilling, petrochemical, geothermal, and industrial sectors. The company manufactures and distributes valves all over the world. Moreover, it engineers, designs, and manufactures value-driven solutions for the global oil and gas industry. (CAMERON, About Us, s.f.)

Currently the company has not entered yet into the Kazakhstan market.

The Texan company American Cameron International must be seen strictly as a competitor due to the international presence and size of the company. Currently there are a total of 23,000 employees (Bloomberg, Company Overview of Cameron International Corporation, s.f.)

3.3.2. Emerson Electric

The next company positioned approximately at the same level as Pentair is Emerson Process Management. This American public multinational company combines a wide range of brands like: AMS Valve Link (software), Baumann (Control Valves), Cascade Technologies (quantum cascade laser (QCL) gas analyzers), Copeland Scroll (modular gas compression), FieldQ (valve automaton systems), FIELDVUE (digital valve controller), Fisher (valves and instruments), FloBoss (electronic flow measurement and control for remote applications), Mobrey (measurement and control for liquids, gases, and dry products), and others. (EMERSON Process Management, Brands, s.f.)

The company provides an extensive range of companies which are also related to the Oil & Gas market. Moreover, the company has immense expertise and capabilities in the full range of automation systems related to processing Oil & Gas products.

The company can also be considered as a competitor due to its size in the market. Moreover, there are approximately 115,000 employees and 220 manufacturing locations. (Emerson Industrial, s.f.) This huge multinational has similar characteristics to Pentair. There are some pros and cons that have to be mentioned because the company can be a potentially and interesting partner to do business with. Emerson Process Management Company has entered the Kazakhstan market by building a thermal **power plant** in Ekibastuz, Kazakhstan. This power plant has been modernized with a PlantWeb™ (digital plant architecture) that enables process and equipment problems to be detected even before they occur, and with an Ovation™. (EMERSON News Release, 2010) See a picture of the Emerson Thermal Power plant in Kazakhstan (*Appendix: Table 3*)

Moreover, Emerson Electric has not only built a power plant, but also has five subsidiaries established in Kazakhstan. See the list of subsidiaries that the company has: (*Appendix: Table 4*)

3.3.3. Flowserve

The American Flowserve multinational has a wide range of products and it supplies all over the world, providing services and solutions to its customers. Moreover, the company also focuses on the Oil & Gas industry by providing collective activities in order to find, produce, transport and process hydrocarbons all over the world. (Flowserve Oil & Gas, s.f.)

Flowserve Company is currently experiencing a reduction in its business due to the decline in the Oil & Gas market; according to the company, revenue went from 42% in 2013 down to 27% in

June 20XX (Oil & Gas industry). The industry is assumed to have a reduction of the market which involves all Flowserve Company. (Regan, 2015)

The company has more than 15,000 employees and furthermore, it also has a presence in 50 countries. (FLOWSERVE at a Glance, s.f.) The size of the company and its international experience makes this company a direct competitor of Pentair. Besides, the company has a **sales office** in Kazakhstan. See a Flowserve global map with its local presence in different countries and especially, Kazakhstan. (*Appendix: Table5*)

3.3.4. AVK Valves Group

The next company analyzed is AVK Valves Group. The company has already built a **valve plant** in Atyrau. Furthermore, AVK has made an effort to expand in Central Asia in order to provide its products to Russian consumers and also to the neighboring countries. They want to establish themselves close to the Caspian Sea and their Atyrau Oil Industry. In addition, the factory has been built near to another PE-pipeline owned by Chevron. Until this year 2016, Chevron had an exclusive distribution due to a production licensing throughout Kazakhstan, Uzbekistan, Afghanistan and Kyrgyzstan. (AVK UK, 2014)

The company is also considered as a competitor due to the structure of the company and its goals for expanding the valve market around the globe. Although it has been considered as competitor, the company has about 2,800 employees. (AVK Careers, s.f.)

Finally, Kazakhstan customers are increasing their interest in the company because of the its short delivery time. This fact can be an example for Pentair in order to expand their current valve-selling situation and also being a facility to provide all valve products to the neighboring countries.

3.4. Potential Collaborative Arrangements

On the other hand, as “being local” is an important factor to expand Pentair’s valve business in Kazakhstan, the best way to expand the market has to be properly defined in order to **reduce risk** and **create value** from increasing sales. A collaborative arrangement could be defined as a

strategy to expand the emerging market. Pentair collaborating with another company could take advantage of the synergies that can appear and expand selling valves in Kazakhstan.

Potential collaborative arrangements are a-priori a possible scenario to reach the strategic objectives of Pentair. In the general overview, Pentair could follow this route in order to spread and reduce costs, specialize in competences, avoid or counter competition, and finally learn from other companies.

The companies mentioned above have been analyzed in order to know if they could be a suitable partner to expand in the Kazakhstan Oil & Gas market. The aim is to win new projects by establishing agreements with some of these companies.

Since Pentair establishes long-term period contracts, collaborative arrangements could be a way to expand the Kazakhstan market, because of the **high capital** and **technical resources** needed. In this scenario, companies spread cost and risk, as said before. However, this type of cooperation is complex to establish, because business objectives must be shared and clearly identified.

3.5. Analyzing possible Customers and Distributors

In order to expand Pentair's valve sales in Kazakhstan, the distribution channel is an important way to achieve the target. The list below includes current distributors that operate in this emerging country. These different companies already distribute similar product to Pentair.

3.5.1. Potential customers in Kazakhstan

Potential customers in Kazakhstan are major Oil&Gas companies, including oil extraction, transport infrastructures, refining, etc., covering the full range of upstream, midstream and downstream markets.

Some of these companies are local, but most of the potential clients are **foreign multinational companies**. Some of them are already customers of Pentair in other countries (USA, Middle East, North Sea, etc.) This is a key point to open up a new market, since the previous links and experiences outside Kazakhstan can provide a very efficient entry-point from the marketing and sales point of view. Among potential customers in Kazakhstan there are:

Local Companies

- *Kazakhstan National Oil Company (KNOC)*
- *KazMunaiGas Exploration Production (AO), oil and gas*
- *KazMunayGas, state-owned oil and gas*
- *KazTransOil, oil transport*
- *PetroKazakhstan, oil and natural gas*
- *Tengizchevroil, joint-venture oil*
- *KazMunaiGas Exploration Production (AO), oil and gas*
- *KazMunayGas, state-owned oil and gas*
- *KazTransOil, oil transport*
- *PetroKazakhstan, oil and natural gas*

Foreign companies operating in Kazakhstan

- *Baker Hughes (an oil services company)*
- *Chevron*
- *Greenoak (Norway)*
- *Eni SPA (Italy)*
- *Exxon Mobil*
- *INPEX (Japan)*
- *Petrokazakhstan owned by China National Petroleum Corporation (CNPC) via its wholly-owned subsidiary China National Petroleum Corporation International (CNPCI)*
- *ConocoPhillips*
- *Petrom (Romania; majority of Austria's OMV)*
- *Royal Dutch Shell*
- *Tasbulat (subsidiary of Petrom)*
- *Too KomMunai (subsidiary of Petrom)*
- *Total SA (France)*

*3.5.2. Potential Distributors***AZ Supplier**

AZ Supplier is an oilfield supply company which started its distribution business in 2010 in Kazakhstan, and established a local LLP with a Kazakh partner. AZ supplier can offer both knowledge due to its cooperation with a local Kazakh partner and excellent references. Its website states that AZ Supplier is one of the main suppliers to the largest operators in Kazakhstan, such as TCO, AGIP KCO, Exxon and many service contractors like Caspian Offshore Construction. The portfolio includes products from large valve manufacturers like Emerson but also Tyco products, the merger partner of Pentair in 2012.

Ferrostaal Equipment Solutions GmbH

Ferrostaal Equipment Solutions GmbH Kazakhstan has offered services to the O&G industry for the Kazakh market since 1992. The company is particularly interesting due to its global reach and strong references: as a part of the Ferrostaal company/group, it benefits from having a warehouse for piping equipment located in Hooge Zwaluwe in the Netherlands. (FERROSTAL Warehousing, s.f.)

Furthermore, it is involved in current projects like the supply of gas equipment for gas pipelines in Kazakhstan and China. In the past it reconstructed the Kazakh gas compressor station Oporная in West Kazakhstan and supplied the company AO "OZENMUNAJGAZ" with oil and gas equipment. The company's website provides contact details for the Kazakh office. (FERROSTAL, s.f.)

Asyn Group

Asyn Group provides O&G material supply, warehousing, procurement and logistics. The strongest appeal of choosing Asyn as a distributor is its list of customers which includes the local companies and local state-run companies such as KazMunayGaz as well as the Caspian Pipeline Consortium.

Moreover, this type of distributor focuses on custom-designed procurement and also for material management. (ASYN Group, s.f.)

According to the details provided by the website, the company has contact with international customers with a presence throughout Kazakhstan.

3.6 About the Kazakhstan market: Political, Social and Economic issues

In order to analyze the Kazakhstan market with a general outlook, the PESTLE analysis is going to be used. The study will focus on the political, economic, social, technological, legal and environmental aspects. Since the research could be excessively long, the report will only focus on the important and relevant aspects of the country which can affect future investment.

3.6.1 Political

Nursultán Nazarbáyev is the current president of the **Republic of Kazakhstan**. Currently, the president of the Republic focuses the government's aims on economic development, especially hydrocarbon sources. (Kazakhstan - UN , s.f.)

Nowadays, the Kazakhstan government is focusing its fiscal policy on different **fiscal stimuli**. The goal is to promote their economy. Reviving the fiscal and financial sector are some of the targets of the National Fund and Multilateral Development Banks (MDBs).

By analyzing this situation, Pentair could benefit from Kazakhstan's political efforts. Moreover, the country focuses on **economic development**, especially hydrocarbon sources, due to the large deposits. The current situation should help companies with a strong knowledge in the oil and gas industry to gain ground in the Kazakh market. Furthermore, fiscal stimulus improvement in the business and investment environment means that Pentair could benefit in the case of establishing emerging strategies. (The Astana Times, 2014)

3.6.2. Economy

The conversion rate of **Kazakhstan's currency, the Tenge (KZT, ₸)** is: 1 USD = 328.947368KZT, and the inverse conversion of 1 KZT = 0.00304 USD. If we compare this conversion with euros we would have: 1 EUR = 371.973684KZT and again with its inverse conversion: 1 KZT = 0.00268836222EUR (*Google Converter – May 15th*).

High differences can be seen between currencies. If we analyze the conversion, both the Dollar and the Euro are stronger currencies than the Kazakhstan Tenge. The last strong devaluation of Tenge was due to the drop in oil and gas prices in Russia and China. The Kazakh government devalued the currency in order to have a flexible exchange rate and remain more competitive throughout the market.

On the other hand, different conditions caused a 23% Tenge devaluation against the Dollar. The Kazakhstan Prime Minister established this monetary policy in order to obtain more export revenue and seek ways to stay competitive.

According to Bloomberg's press release, due to the temporary inflationary pressure emerging, the authorities have determined that they want to **keep inflation** within the range between 6% and 8%. (Boomberg business - Kazakhstan Tenge , 2015)

What also has to be considered in the economic analysis is the **evolution of the GDP**. The following graph (*Appendix: Table 6*) shows the tendency of Kazakhstan's GDP compared with Middle East and Central Asia O&G exporters. The economic expectations, as reported by the International Monetary Fund, the expectations for the economic situation for the Kazakhstan market are to recover gradually, trying to reach a 4% average in 2016. The fact means that the volatile situation is about to change into a slow increase in the O&G market. As said before, the country is promoting fiscal structural reforms in order to accelerate and boost its growth. This is a positive aspect **concerning Pentair** because the country has well-established strengths to develop their situation. (International Monetary Fund , 2015)

See the chart for Annual GDP evolution in Kazakhstan (*Appendix: Table 7*). The table shows Kazakhstan's GDP Annual Evolution from the year 1999 until 2014. Certainly the total million Euros uninterruptedly increased from 1999 (15,814 M€) to 2013 (168,967 M€). In 2014, Kazakhstan's GDP had its only period of depreciation, from 168,967 M€ to 159,688 M€. (Expansión - Datosmacro, 2014).

This remarkable period of deflation may be indicative of a non-stabilized country in terms of its economy. Causes like the oil price drop, Russia's slowdown and the Rouble's depreciation have been the consequence of the economic situation. However, the Gross Domestic Product forecast determines an approximate total of \$249,000 M (221.229 M€) (Survey, 2014)

See also the impact of falling commodity prices and contraction of Russia's economy (*Appendix: Table 8*).

Pentair established, in its last annual report, that foreign translations (2015) had a 6.6% negative impact on their results of operations. They are concerned that foreign exchange rate fluctuations can affect the reported revenue in future periods as well. For instance, margins on sales from components obtained from suppliers (located outside the US) can be affected. (Pentair - Annual report, 2015, s.f.)

3.6.3 Social

KAZAKHSTAN



The Republic of Kazakhstan is the world's ninth largest country covering an area of 2,724,900 km² and with a total population of 17,948,816 total populations. Astana has been Kazakhstan's capital since December 10th 1997, with 835,000 inhabitants. Kazakhstan has two official languages: Kazakh and Russian. Moreover, the two religious groups are Muslim (70.19% population) and orthodox Christian (23.9% population). (Kazakhstan United Nations, s.f.)

Education is an important topic in this analysis, because Pentair Company would not invest in a country with low quality education and with employees with a poor level of studies. According to UNESCO, Kazakhstan ranked first in "Education for All Development Index" due to achieving near-universal levels of primary education, adult literacy and gender parity, by creating new regulating education laws. (UNESCO - Education, s.f.)

Related to education, **employee productivity** is the second topic to analyze due to the need to maximize profit if Pentair invested in such a large country. Kazakhstan is considered a low producer and poor quality country due to the old Soviet style of management. Productivity only focused on maximizing output rather than producing efficiently. Incentives only focused on quantity rather than quality. Pentair could use this production weakness in order to establish a new and modern production style based on equity and efficiency.

As regards this point, from a global and social perspective, by establishing a new factory, for instance, employees could be taught by **Know-How** in order to learn from the knowledge and experience of the company and trying to change the old Soviet style of management. Furthermore, the focus on maximizing output affects product quality negatively, which improves Pentair's competitive position as it offers high-quality products.

3.6.4 Technological

The Ministry of Education and Science of the Republic of Kazakhstan is implementing the **Technology Commercialization Project (TCP)** to support the Innovative Industrial Development Strategy of the Kazakhstan Government. This competitive process focuses basically on **three sectors**: general industry and trade sector (60%), central government administration (20%) and tertiary education (20%). The TCP workshop has been established to support **technology research**

projects, and others such as intellectual property protection, marketing, launching start-up companies and technology licensing contracts. (Akkaya, 2014)

Success in improving technological resources and processes will depend on the knowledge flowing into Kazakhstan: Pentair with its high quality products has important technology and process knowledge which can be of particular interest in a joint venture situation with a Kazakh company.

3.6.5. Legal

The legal aspect is an important point of analysis in order to expand in an emerging country. One of the aspects that Pentair is interested in is if Kazakhstan has a high proportion of restrictive laws, or the level of corruption that this country has. The legal sector needs to be studied because Pentair Valves and Control would not expand its productivity in a country where corruption is widespread.

According to the international organization **Extractive Industries Transparency Initiative (EITI)**, Kazakhstan has been considered a “compliant country” due to its observation of the international standard of transparency for all revenues from different industries. The latest **corruption analysis**¹ by EITI in 2015, ranking countries on an index from 0 (very corrupted) to 100 (non-corrupted), defined Kazakhstan with a score of 28, placed at rank 123 among the 168 countries that are established. Kazakhstan’s corruption index has decreased, from a score of 26 (in 2013) to a score of 28 (in 2015). (Index, 2015).

See attached the Corruption Perception Index in 2015 (*Appendix: Table 9*)

The change in Kazakhstan’s **corruption perception** would be a good process in order to remain transparent in public sector policies. Pentair could see Kazakhstan’s small improvement as a good point of view in order to invest in Kazakhstan.

3.6.6. Environmental

Kazakhstan has huge mineral reserves and numerous **oil and gas fields**. With its 30 uranium mines and former Soviet Union nuclear testing programs, wide areas Kazakhstan are radioactively polluted. Moreover, Kazakhstan is facing several environmental issues. The country

¹**Corruption Perception Index:** The Transparency International Organization uses the corruption measurement tool as the corruption perception index. Kazakhstan had a total 28 points in 2015.

has 3 million hectares of land that are subject to erosion. Additionally, acid rain is also damaging the environment and threatening its flora and fauna.

According to the UN, industrial contamination is 160 to 800 times beyond permitted levels which also leads to **high pollution** of the Caspian Sea. For instance, the Caspian Sea has a high hydrogen-sulphide concentration and companies operating under these conditions also face high pressure. (Nations Encyclopedia, s.f.)

These environmental conditions may be considered advantageous for Pentair, as it provides products resistant to corrosion.

3.6.7. Important aspects from the PESTLE analysis:

In order to find new projects, some causes such as a devalued currency and constant inflation can affect decisions when searching for new projects to do business with. On the other hand, the changes in the law and the corruption average may affect the expansion of valve sales in Kazakhstan.

On the other hand, corruption has to be one of the most important topics that Pentair needs to bear in mind. According to the Corruption Perception Index, Kazakhstan has reached the highest average position, since 2001, with a total of 28 points (range from 0: corruption to 100: no corruption). What makes the country more interesting in Pentair's eyes is that Kazakhstan has reduced its corruption level since the country has been part of the analysis with the Corruption Perception Index in 2001.

Having said that, the global overview of the pestle analysis is that the country is making efforts in order to improve the current situation. Pentair should bear in mind that investment is based on a long-term forecast, and the economic situation of Kazakhstan can improve gradually over the coming years.

IV. BUSINESS PLAN CONCEPTUAL MODEL

4.1. Key Issues of the Business Plan

The report is based on a financial investment which will be presented with a business plan. The information is based on Pentair plc and Subsidiaries, using the Consolidated Financial Statements. (PENTAIR Annual Report, s.f.)

Furthermore, in order to keep the project structured according to the competitive analysis, some key factors for the business plan need to be clarified:

- ✓ The Business Plan is going to focus mainly on the sales force, distribution, engineering and customer support in Kazakhstan.
- ✓ As established in the competition analysis, the valve and control market is a high complexity and specialized industry. Pentair's manufacturing and production focuses on countries like Canada, USA, the Netherlands, and more. Generally, the backlog (future orders) from Valves and Controls has a delivery time from six to twelve months. Thus, Pentair is able to have a long delivery time due to the complexity and high quality of the valves.

See Pentair's backlog and delivery time (*Appendix: Table 10*)

- ✓ Pentair offers an international service network. The possibility of building a Kazakhstan valve factory is not subject to consideration because of Pentair's global implementation.
- ✓ After Pentair has become established in Kazakhstan, the option of selling valves around neighboring countries may also be considered due to the strategic position of the country. This geographical location will lead Pentair to give support to the bordering countries which are also oil and gas producers.

(PENTAIR Annual Report, 2015, s.f.)

Moreover, some economic and financial aspects should be mentioned:

- ✓ A three-year sales target is going to be considered. According to Pentair's Report, the Valves and Controls business turnover will focus on Developing countries. The specific data of oil production will be considered in order to compare countries (explained in depth in section 4.1.1. Sales target)
- ✓ Payback within three years. Thus, a period of approximately three years will be considered/required to break even. Until that stage, Pentair will not obtain profitability.

- ✓ Pentair's structure cost in Kazakhstan will be reduced for the business line: sales, support and engineering. Business costs will not be as high as investing in new machines in Kazakhstan (for a factory).
- ✓ Since the Valve and Control market does not have a perfect competition, the interest rate will not be a unique rate. The investment analysis will explain the hypothesis of different situations and rates which Pentair could find itself faced with.
- ✓ Cash flow projections will be studied in the economic and financial evaluation.
- ✓ The Net Present Value Methodology will be used, focusing on the return of the investment target. Net present value known in absolute terms and the internal rate of return considered as relative terms. Both concepts need to be considered in terms of profitability.

The structure of the business plan will follow the approach presented by the subject of Corporate Finances, Universitat de Barcelona – 2nd Quarter, 2015.

4.2. Relations in the Conceptual Model

The following Conceptual Model represents an example of how Pentair could expand in Kazakhstan, selling valves for the Oil & Gas market and how the different independent variables can affect the dependent variable.

As the main objective of the project is how to sell more valves in the target country, there are several different cause and effect relationships that have to be well defined.

Second, to keep up and run existing installations some very specialized services are requested (maintenance, support and inspection services) also provided by Pentair.

A simplification of this Conceptual Model is required in order to define how certain different phenomena are related to each other and to understand how they can affect Kazakhstan expansion in different ways, focusing on the Oil & Gas market selling valves.

4.3. Key variables of the Conceptual Model

Different concepts are considered as dependent and independent variables. The dependent variable of “how to sell more valves in Kazakhstan” is affected and influenced by the independent variables of the conceptual model. The following concepts are all included in the exploration in order to explain the different independent aspects:



Local Sales Force near customer

The first relationship shown is the independent variable of customers’ needs. If a sales force is directly established in Kazakhstan, Pentair will be able to better understand customers’ needs and propose accurately defined and cost effective technical solutions.

The recently merged TYCO has an office in Kazakhstan that can be leveraged to improve the position of the company. As mentioned before, the list of potential customers (paragraph 3.2), is quite short, and the sales process will be very direct. Also, some potential customers in Kazakhstan are already established as well as in other countries.

Distribution Network Valve and control sales in Kazakhstan are carried out by former Tyco resellers (as explained in the Exploration, the Atyrau office is dedicated to thermal controls). But distributors do not work exclusively for Pentair, and also sell products made by competitors. A new focus partnering with exclusive local distributors is an opportunity to improve sales.

- The unproven theory is that if Pentair develops partnerships with additional reseller??/partners), valve sales could increase. Is there any guarantee that increasing distributors will increase sales?

Changing Laws and Regulations The conceptual model also considers the effect of political stability in the region. All investments in new installations decided by the Kazakh government have a direct impact on business opportunities for Pentair. Even though the real customers are major Oil & Gas companies, the level of investment for valves and controls is directly linked to country-level decisions.

Some competitors studied in the Exploration have already established direct contact with major representatives of the Government. Pentair should also work in this direction, since technical certification policies could lock commercial initiatives.

Qualified Local Support Operating valves in oilfields installations is a complex activity. It requires highly trained staff and a strong technical background. Good technical support is a key point to establish long-term relationships with customers that will enable services usually provided by Pentair (engineering, design, inspection, maintenance and repair services for its valves and related products) to be offered. In activities with high environmental impact, certifications issued by technical staff may also be required. (Pentair Activity -SEC Files, s.f.)

4.4. Other variables not considered in the Model

The following variables ***have not been considered*** as a part of the conceptual model.

Inflation vs. currency exchange These different concepts are related to each other: first of all, the constantly changing Oil & Gas price may be affected by the volatile differences/fluctuations in Kazakhstan inflation. Moreover, tenge's devaluation is also related to inflation (usually, the higher the inflation is, the lower the value of the tenge is). Both variables can influence the cost of future investments in the country.

Joint Venture Because of the particular position of each competitor, none of the companies analyzed are suitable to establish a long-term stable relationship, neither acquisitions nor joint ventures. This is not considered a realistic option in the research.

According to the previous analysis, doing business successfully in Kazakhstan is only possible with a strategic "think local" approach, respecting the legal framework and cooperating with local companies, who are not a real threat in other countries.

4.5. Proposed Initiatives

Following the results of the Exploration and the key variables identified in the Conceptual Model, the following guidelines are established:

- Focus on strengths provided by the Pentair-Tyco merger to provide local and regional services extended to neighboring countries.
- Leverage existing relations with local resellers who are now operating in Kazakhstan
- Leverage direct contacts with oil and gas companies who are already customers of Pentair in other countries or regions.
- Collaboration with local Kazakh companies is highly recommended.
- Discard hypothetical joint ventures with competitors.

Following these guidelines, the following initiatives are recommended:

4.5.1. Network of distributors-resellers

Resellers are usually a good entry point in this new market, where Pentair is providing high quality valves and controls, and is recognized by years of experience worldwide.

In accordance with this, it is strongly recommended to leverage the advantages of resellers who are now operating in the region. Some companies like AZ Supplier are now reselling Tyco safety products, have experience selling valves and controls provided by competitors, and are also suitable to add Pentair's Valves and Controls to their catalogue.

It is considered as the first and simplest way to start the commercialization of Pentair's valves and controls in Kazakhstan. (AZ Supplier, s.f.)

4.5.2. Establish a direct sales team

Since the number of potential customers is quite limited, the list of contacts is easy to manage even with a limited sales force. For instance, just 5 sales staff, each of them covering 5 accounts, could cover almost the entire list of potential customers in Kazakhstan (*paragraph 3.5. Analyzing possible customers and distributors*).

Since one of the objectives of the Kazakhstan strategy is to expand the market size to cover the entire region including neighboring countries, the sales force could grow in the future depending on the success and market share reached. The key requirements of the sales force are:

- Local knowledge of the customers
- Knowledge of existing installations and projects under study

4.5.3. Create a Training and Competence Support Center

Pentair's Valve and Control business lines not only manufacture and sell products. They also provide engineering, design, inspection, maintenance and repair services. This is a key point in the business approach.

The sales process of infrastructures could require an intensive pre-analysis study, requiring engineering services and highly qualified support. This opens an opportunity to establish a competence and training center that can work in certain different directions:

- Presales support in new installations design
- Inspections and quality control
- Maintenance supervision
- Training staff who are in charge of ongoing support to customers
- Certification of maintenance and inspection staff.

A key point to success is the participation of local human resources, highly cost-effective, in the competence center.

4.5.4. Logistic distribution Center

Once sales in the region (not only Kazakhstan) reach a minimum volume (critical mass), there is an opportunity to improve distribution costs and simplify logistics management by setting up a logistic distribution center. This center would serve as a warehouse of the products and spare parts that are more frequently requested.

The size and characteristics of the logistic distribution center must be defined once the sales and services provided in the region, targeting Kazakhstan and neighboring countries, are established. (A winning framework for marketing entry strategies, s.f.)

4.6. Discarded Options

The following options have been discarded as potential actions in the business plan, since they do not fit with the objectives of the project:

- The study has been useful in order to discard some different options that Pentair could consider adopting. For instance, building a new Kazakhstan factory would not be a solution for the question established because of the high initial costs and unstable economic conditions (inflation due to devaluated currency).
- Furthermore, as has been analyzed, the option of establishing a collaborative arrangement with Emerson Company (focusing on Fisher products) would not be a good enough reason in order to increase valve sales in Kazakhstan.
- Commercial initiatives like a B2B approaches could be considered, but from a worldwide perspective. To implement this type of solutions, significant investments must be made in IT, and Kazakhstan is just a particular case.

V. PROPOSED IMPLEMENTATION OF THE BUSINESS PLAN

The research design focuses on the detailed plan to gather evidence that the proposed solution will help Pentair to reach its objectives. A scenario-based Strategic Planning methodology framework from the Roland Berger School of Strategy and Economics will help to adapt the strategy by implementing the methodology. The target is to work with different scenarios to enable the company to expand the development framework and increase the strategic action plan. It is also considered to connect the world by making-decision processes. (Roland Berger, s.f.)

In accordance with this idea, a step by step approach is proposed:

- Testing market strategy
- Assessment of results
- Deployment of the proposed solution

The aim of this approach is to ensure that, if a proposed solution is not responding as expected, the costs of changing or reorienting the strategy will have minimum impact on/for Pentair. As stated, after phase 1 is completed, there is a checkpoint assessing the results obtained, where the strategy will be confirmed or revised.

5.1. Testing the market

This phase is intended to verify that the proposed solutions to enter the Kazakh market are responding to Pentair's expectations. Testing market strategy consists of a set of actions related to each initiative, all of them in a limited scope. This methodology will permit the company to adapt or even reverse any of the proposed solutions if the expected results are not achieved. Since the scope of this phase is limited, the costs that could be incurred are also limited.

Initiative	Action
Network of distributors-resellers	Extend distribution agreement with AZ Supplier (current reseller of Tyco now operating in the country), and add another non-exclusive distributor (for instance, Ferrostaal Equipment Solutions GmbH Kazakhstan). Also,

prepare a list of additional distributors that could best fit the requirements of Pentair in Kazakhstan. (AZ Supplier - Tyco, s.f.)

- Establish the sales objectives for the first year with the distributors-resellers
- Prepare a follow-up plan to keep ongoing contact with the sales representatives and confirm that activities are progressing adequately.

Direct sales team

- Assign the sales manager in charge of the overall direct sales strategy. This manager is a senior level post with experience in the Kazakhstan market.
- Establish the commercial plan and sales quotas for the first year.
- Establish the coordination and follow-up of the sales force.

Competence Center (training and support)

- Define detailed objectives and profile of the competence center. These objectives must include, among others, training plan, coordination with the sales team, profile of assigned human resources.
- Assign a technical officer responsible for providing pre-sales and maintenance support.

Logistic Center

- This initiative is costly and not considered a priority, and is delayed in comparison with previous initiatives. However, during this phase, a project definition of the logistic center will be prepared by the technical specialist. This project definition includes:
 - Minimum sales volumes requested
 - Geographical location study
 - ABC analysis of the items managed in the center
 - Cost analysis
 - Calendar of Implementation

5.2. Deployment of the proposed Business Plan implementation

Once phase 1 –testing the market- is successfully ended, there is a key milestone: the assessment of the results. Pentair should check the results and, if they are satisfactory, confirm the deployment of the proposed solution. Otherwise, if the results obtained are not good enough, Pentair has the possibility to review the entire model, modify the strategy to enter the Kazakhstan market or even cancel the whole project.

Initiative	Action
<i>Network of distributors-resellers</i>	<ul style="list-style-type: none"> • Confirm and extend the existing agreements and increase the number of resellers, depending on the contacts. • Establish sales objectives for the rest of distributors • Establish a consolidated follow-up plan for the whole base of distributors
<i>Direct sales team</i>	<ul style="list-style-type: none"> • Recruit the complete sales team (from 3 to 5 specialists) to ensure that all potential customers can receive pre-sales and technical support. • Establish sales objectives both in Kazakhstan and in neighboring countries. • Reinforce contacts with potential customers and companies managing existing and future installations in the country.
<i>Competence Center (training and support)</i>	<ul style="list-style-type: none"> • Define the detailed functions of the competence center. This includes assigned engineers, technical staff and support resources. • The competence center will manage skills and specialization in order to provide excellent support to end customers. • Establish a follow-up plan to ensure correct coordination between the sales forces, presales technical support, technical inspections and support.

Logistic Center

- Once a minimum volume of sales and spare parts turnaround has been analyzed and confirmed, the implementation of the logistic center can begin.
- The deployment of this initiative will be delayed in comparison with the previous activities. The initiation will depend on sales strategy success.
- This initiative can only be launched once the cost-benefit analysis is clearly positive, and based on real and tangible data of sales volumes and materials turnaround.

VI. FINANCIAL IMPACT OF THE BUSINESS PLAN IMPLEMENTATION

6.1. The future investment

Any investment project needs to focus on three main economic aspects: liquidity, profitability and risk. The future investment has to be able to achieve cash without high costs, regarding liquidity. Moreover, the investment will have a trade-off between risk and profitability. The dilemma is what percentage of risk the company should consider to boost future profits. Risk can be seen as the possibility that the investment can lead to potential losses. Concerning the risk that Pentair can assume, there is a wide range of possibilities for the investment, which will be analyzed in depth.

6.1.1. Liquidity

Regarding liquidity there are several initial costs that Pentair will have to deal with in order to accomplish the proposed strategies. There will be costs from the Sales Centre, Competences Centre and the Logistics Centre. There are going to be different costs from:

- Construction. Since three main offices are going to be built there will be construction costs. The sales office will have to be built. Also the warehouse and logistics office will require costs for construction and workforce costs.
- Supply costs for the light and water for each office. All bill payments will need to be covered by Pentair, which will require liquidity.
- Salaries. Of course, Pentair will have to pay salaries for the job contracts of the new employees.
- Finally, there are going to be costs from Tyco since the company is already established in Kazakhstan.

As stated in key issues of the Business Plan (4.1), Pentair needs at least six months in order to manufacture and transport valves ordered (from six to twelve), plus six months more that it could take to sell the valve. Pentair could not generate revenue until the end of the first year, which means that Pentair will need enough liquidity in order to cover all the initial costs that the investment will generate.

6.1.2. Profitability

As stated on a hypothetical situation, Pentair could not generate revenue until the end of the first year. But, on the other hand, we need to consider when the payback would take place.

The following concepts will be explained in section (6.3. Forecasting). Considering the initial cost (Q_0) is 25 USD million and Cash Flows will be Q_1 : 10 USD million, Q_2 : 17 USD million and Q_3 : 25 USD million. Payback calculations can be assumed to be:

	Q0	Q1	Q2	Q3
CF	-25.000.000,00	10.000.000,00	17.000.000,00	25.000.000,00
CF Accumulated	-25.000.000,00	-15.000.000,00	2.000.000,00	27.000.000,00

Payback	1 year, 10 month and 17 days
---------	------------------------------

If the calculation is made as:

- 1 year → 17,000,000
- $x =$ → 15,00,0000 (what we need to earn)
- $x = 15,000,000 / 17,000,000 = 0,882352941$

Then, payback period would be: 1 year, 10 months and 17 days

We can conclude that the payback period of time will not be until one year, one month and twelve days. Until that day, the investment will be profitable, which means that Pentair would have covered all initial costs and will begin being profitable.

See Payback calculations: (Appendix: Table 11)

6.1.3. Risk

There are some points that need to be considered due to the size of the investment. The more risk that the company assumes, the more profitable it will be. There are several points that Pentair needs to consider that are uncontrollable due to the uncertainty. The risks considered are:

- Instability of the local region of Kazakhstan. Since Kazakhstan is established on a communist government, the social environment could change. For instance, there is a

political risk that could lead the country to a revolution, a situation that could affect Pentair's future investment.

- There is another risk related to dependency on the Kazakh government. It means there are several economic and political factors that could affect Pentair's investment. The Kazakh government is the body that would approve if an oil extraction would take place or not. The government has the last decision on this type of investments. The reason why Pentair depends on the Kazakh government is because, if there is more oil extraction, more valve customers will have contracts with Pentair.

Concluding the risk aspect, there is also a relation between risk and profitability. The more risk that Pentair assumed, the more profitable it would be.

6.2. Sales target

First of all, the following discussion needs to be clarified, which will include the method used to determine the sales objective in Kazakhstan.

The size of the Valve and Control business of Pentair (and its competitors) is highly dependent on the size of the **oil and gas business** in the target country or region. Not only this, even customers operate worldwide which can request new products, engineering services and more. Thus, companies are proportional to the size of the oil extraction and transportation market.

According to this approach, market size can be determined, in terms of revenues, as a percentage of the oil market size in the country vs the region.

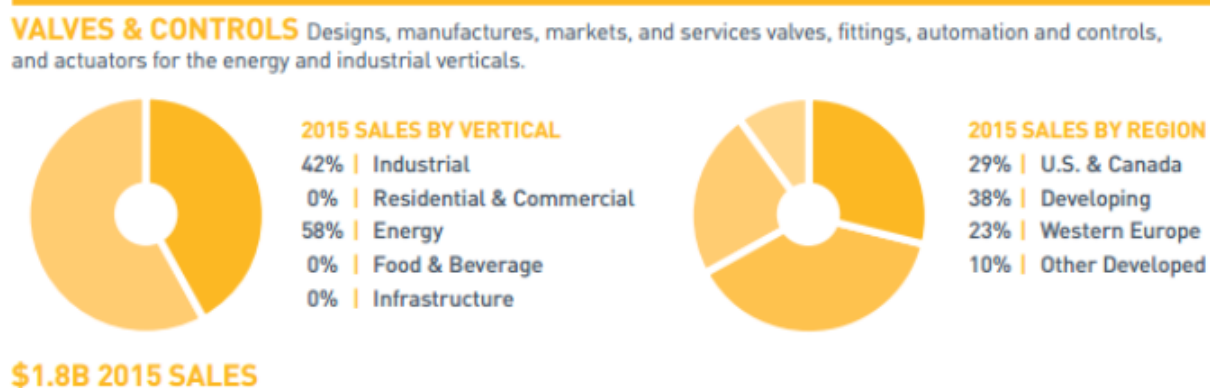
Pentair provides its financial information and statements separating the region of "Developing Countries", including China, Eastern Europe, Latin America, the Middle East and Southeast Asia.

Comparing the oil production (in millions of barrels) of the "Developing Countries", as Pentair classifies these countries, the total amount of the **top 30 producers** is around 50 million barrels/day. Since Kazakhstan's production is 1.72 million barrels per day, we can establish an initial target business objective in Kazakhstan of 3.5% of the existing sales in the region. The calculation we have is: $1.72 \text{ M} / 50 \text{ M} = 3.44\%$ and therefore: 3.5%. (U.S. Energy Information Administration, s.f.)

On the other hand, Pentair's 2015 annual report explains that the division of V&C gets 38% of its sales from the "developing regions" (including China, Eastern Europe, Latin America, the Middle

East and Southeast Asia), over a total worldwide sales figure of 1,840.1 million? USD. (Pentair Annual Report, 2015, s.f.) See (*Appendix: Table 12*) Oil and Other liquids production, 2015.

Sales figures for developing countries (sales by region, 2015) can be found in the following graph:



Valve and Control sales from 2015 are found in the following table:

<i>In millions</i>	2015	2014	2013	2015	2014	2013
	Net sales			Segment income (loss)		
Valves & Controls	\$ 1,840.1	\$ 2,377.3	\$ 2,451.7	\$ 223.0	\$ 398.5	\$ 349.3
Flow & Filtration Solutions	1,441.6	1,603.1	1,651.8	185.1	199.5	202.4
Water Quality Systems	1,381.5	1,356.4	1,269.3	281.8	253.3	227.9
Technical Solutions	1,809.3	1,728.1	1,663.4	395.0	378.1	342.0
Other	(23.5)	(25.9)	(36.5)	(83.7)	(93.7)	(108.4)
Consolidated	\$ 6,449.0	\$ 7,039.0	\$ 6,999.7	\$ 1,001.2	\$ 1,135.7	\$ 1,013.2

See more Valves and Controls details about net sales in Pentair's Annual Report for 2015 (*Appendix: Table 13*)

Some simple calculations can be made based on these figures:

- Developing Region sales = 699 USD million (38% of 1,840.1USD million)
- Target Sales for Kazakhstan = 3.5% of 699 = 24.4 USD million.

Therefore, a target of 25 USD million is established as a key figure for the business plan.

6.3. Forecasting: The Investment of Pentair

In order to analyze the profitability of the projected Pentair investment, the Net Present Value (NPV) is going to be used. The target will be used to calculate the net present value for a period of time (depending on the number of years) to see if Pentair will be able to recover its initial investment in a reasonable period of time. Moreover, Net Present Value methodology is going to study the difference between the present value of cash inflows (collections or charges) and cash outflows (payments), at the present value. (Investopedia, Net Present Value, s.f.)

According to Net Present Value methodology, different variables need to be considered:

Firstly, the **initial outlay (Q_0)** needs to be chosen. Due to the dimension of the project and the company, it will be considered own funding. Due to the size of Pentair it is considered that there will be enough liquidity as initial outlay for the investment.

Moreover, in order to achieve the breakeven position, the sales target will be considered as a total initial outlay. Therefore, in a hypothetical situation, 25 USD million (6.2.9 Sales target) will be Pentair's own capital. It is considered that there will not be any debt cost, which means that cost of capital is going to be equal to the cost of equity.

Secondly, **Cash Flows ($Q_1, Q_2, \dots Q_n$)** need to be mentioned. Cash Flows are going to be generated over a period of time depending on the years that the investment will last.

The investment forecast is going to be considered for a 3-year term. For each year, the future cash flows will be assumed to be:

- First year, $Q_1 = 10$ USD million
- Second year, $Q_2 = 17$ USD million
- Third year, $Q_3 = 25$ USD million

For the first year, Pentair would be able to pay back less than half of the initial outlay; this is why a total of 10 USD million has been considered. Moreover, being optimistic, 17 USD million would be the payback for the second year. And finally, for the third year Pentair would be able to generate 25 USD million.

On the other hand, in order to use net present value methodology, the **cost of capital (k)** is based on the opportunity cost of the investment. This opportunity cost, known as the market interest rate, will be different for each investor. It should be borne in mind that the project is not established in a perfect competency market, which means that there will not be only one capital cost. Different scenarios will have to be considered in order to remain closer to reality.

As mentioned before, the hypothesis considered that there will not be any debt cost. Therefore, the return required for the investor is going to be the cost of capital (k), also equal to the cost of equity.

According to net present value methodology, the following formula:

$$VAN = Q_0 + \frac{Q_1}{(1 + k_1)} + \frac{Q_2}{(1 + k_1)(1 + k_2)} + \dots + \frac{Q_n}{(1 + k_1) \dots (1 + k_n)}$$

U
B

Net present value calculation would be:

Table 1:

Project	Q ₀	Q ₁	Q ₂	Q ₃	k	NPV
A	-25.000.000,00	10.000.000,00	17.000.000,00	25.000.000,00	3%	23.611.409,80
B	-25.000.000,00	10.000.000,00	17.000.000,00	25.000.000,00	4%	22.557.749,20
C	-25.000.000,00	10.000.000,00	17.000.000,00	25.000.000,00	5%	21.539.250,62
D	-25.000.000,00	10.000.000,00	17.000.000,00	25.000.000,00	6%	20.554.383,82
E	-25.000.000,00	10.000.000,00	17.000.000,00	25.000.000,00	7%	19.601.699,70
F	-25.000.000,00	10.000.000,00	17.000.000,00	25.000.000,00	8%	18.679.825,23
G	-25.000.000,00	10.000.000,00	17.000.000,00	25.000.000,00	9%	17.787.458,81
H	-25.000.000,00	10.000.000,00	17.000.000,00	25.000.000,00	10%	16.923.365,89
I	-25.000.000,00	10.000.000,00	17.000.000,00	25.000.000,00	11%	16.086.374,91
J	-25.000.000,00	10.000.000,00	17.000.000,00	25.000.000,00	12%	15.275.373,54
					IRR	39,80%

As an example, in *Table 1*, the same investment (Q_0 , Q_1 , Q_2 and Q_3) has been considered, but with **different interest rates (k)**. In this way the different net present value that can be achieved with a different average capital cost can be shown. Project A, with a capital cost $k = 3\%$ shows a higher net present value according to the table. In the example above, the calculation of the internal rate of return (IRR) would be: $r = 39.80\%$, which is very high.

The higher the profitability rate Pentair assumed, the greater the risk the company is going to be exposed to as well. Other variables should also be taken into consideration in order for the investment to be successful. It cannot be forgotten that the main goal for Pentair is to reduce costs and increase profits.

Regarding the internal rate of return **IRR**, it is known that the methodology uses the interest rate r in order to achieve **NPV = 0**. The interest rate of return IRR can be calculated with different procedures like using financial tables, computer programs, worksheets (Excel) or financial calculators.

According to this, the formula follows:

$$\text{VAN} = Q_0 + \frac{Q_1}{(1+r)} + \frac{Q_2}{(1+r)^2} + \dots + \frac{Q_n}{(1+r)^n} = 0$$

However, what can be difficult for net present value methodology is to figure out the interest rate k (cost of capital). For this reason, the hypothetical investment analyzes the same scenario but with different interest rates.

Moreover, net present value methodology establishes that the investment would be profitable as long as the **NPV > 0**. Furthermore, if there were more than one investment, it would be desirable to choose the one with higher Net Present Value. Besides, the *investment effectiveness condition* needs to be mentioned: only projects with higher interest rates? of return than cost of capital will be the ones effective (it means, $r > k$). However, when faced with a range of investment alternatives, those with **higher interest rates of return** are going to be chosen.

On the other hand, another example could be shown. For instance, by using different initial outlay and/or different cash flow as well. By changing related variables, different projects would get different net present value (NPV) and different internal rates of return (IRR).

The **hypothetical situation** could be: Pentair taking out a 25 USD million loan to finance the expenditure of the initial outlay for the investment. In order to consider a reasonable rate of interest, it would be considered to be the LIBOR rate for one year. London Interbank Offered Rate (LIBOR) for one year in USD is 1.33%, which means that for Pentair's investment over a period of three years, then:

$$\text{➤ } 1.33\% * 3 \text{ years} = 3.99\% \text{ —→ } 4\%$$

See LIBOR USD for one year: 1.33 % (Appendix: Table 14)

Since the average of LIBOR is constantly changing, it will be taken further consideration for higher rates too. (Global-Rates, LIBOR, s.f.)

If we analyze different scenarios with different cash flow but with the same interest rate (cost of capital) $k = 4\%$:

Table 2:

Project	Q0	Q1	Q2	Q3	k	NPV	IRR
K	-25.000.000,00	5.000.000,00	2.500.000,00	5.000.000,00	4%	-13.435.935,37	-27,79%
L	-25.000.000,00	9.000.000,00	15.000.000,00	2.000.000,00	4%	-699.817,93	2,30%
M	-25.000.000,00	14.000.000,00	10.000.000,00	5.000.000,00	4%	2.152.082,39	9,32%
N	-25.000.000,00	10.000.000,00	-10.000,00	13.000.000,00	4%	-3.836.908,28	-3,82%
O	-25.000.000,00	0,00	15.000.000,00	15.000.000,00	4%	2.203.288,58	7,59%

It can be observed in *Table 2* that the investment with the highest net present value is project O. With a total 2,203,288.58 USD. The interest rate of return rises to an average of 7.59%, being the second best rate. In second place, can be found project M with a total of 2,152,082.39 USD NPV. Having a look at the range of interest rates, project M is the one with the highest IRR, which would be preferred by Pentair, rather than the rest of the projects.

The methodology can also be analyzed for a different scenario, for instance $k = 5\%$:

Table 3:

Project	Q0	Q1	Q2	Q3	k	NPV	IRR
K	-25.000.000,00	5.000.000,00	2.500.000,00	5.000.000,00	5%	-13.651.333,55	-27,79%
L	-25.000.000,00	9.000.000,00	15.000.000,00	2.000.000,00	5%	-1.095.454,05	2,30%
M	-25.000.000,00	14.000.000,00	10.000.000,00	5.000.000,00	5%	1.722.816,11	9,32%
N	-25.000.000,00	10.000.000,00	-10.000,00	13.000.000,00	5%	-4.255.371,99	-3,82%
O	-25.000.000,00	0,00	15.000.000,00	15.000.000,00	5%	1.563.006,15	7,59%

Analyzing *Table 3* cost of capital could be instead of 4%, 5% due to the constantly changing market. If we analyze the scenario, project M is this time the one with the highest net present value. Compared with *Table 2*, the interest rate of return has not changed. The fact that cash flow for all projects has not changed leads to such a stable interest rate of return for all projects. It remains the same comparing both tables.

Faced with this scenario, project M would be the most interesting for Pentair if the company could have complete control of the variables involved.

Nevertheless, it is true that there are several variables that Pentair cannot prevent or even anticipate. There is always the **uncertainty** of the market which can modify the forecast of the investment.

VI. CONCLUSIONS

This report aims to study different expansion strategies for the developing country of Kazakhstan. In order to have a direct analysis of the strategies involved, the company of Pentair has been taken into consideration, due to its size and international position in the Valve and Control market. Moreover, a research analysis has been required in order to find information about the current situation of the company and also the country. The study of the company's overall position has focused on the strengths, weaknesses, opportunities and threats, in order to focus on Pentair's current situation. Furthermore, the study of Pentair's competition has been considered in order to study different strategy possibilities. And thus, a Porter Five Forces analysis in the competitive analysis has been needed.

On the other hand, the study of the external situation of the country, by considering economic, political, legal and social aspects leads us to discard the possibility of building a valve factory in Kazakhstan. The size of the project would require a high level of investment which could be badly affected by the volatile situation which the country is involved in. In order to conclude the project successfully, the main strategies analyzed are:

- ✓ Because Pentair already does business throughout Kazakhstan, it is considered that the company has entered the market. Expanding Pentair's current position could be achieved by increasing the network of distributors. Besides, Kazakhstan is placed in a strategical position due to its boundaries with major consumer countries like China and Russia. Not only this, it is also close to oil and gas producers. Pentair, by expanding contracts with distributors that already operate in Kazakhstan (AZ Supplier in Tyco former) can reach the target of increasing valve and control sales, for instance, by the key solution of cooperating with local Kazakh companies.
- ✓ Another strategy considered in the analysis has been to integrate a Sales Force in the target area. A sales department can be useful due to its local knowledge of the market in the country.
- ✓ In addition, the valve and control industry requires quality engineering and long-term guarantees. This is why a Competence Centre would be a solution in order to provide continued maintenance of the products sold to the customers.
- ✓ Pentair's distribution in Kazakhstan might also require a Logistic Centre with the necessary warehouse. In this way, Pentair could store valves in the warehouse after the

shipment or transportation is completed. Furthermore, it will be more accessible for customers.

And also options that were discarded:

- ✓ As a possible strategy solution, collaborative arrangements were taken into consideration in the first instance. After analyzing the main market competitors and the size of the valve and control market no collaborative arrangements can be seen as a solution in order to expand Pentair's valve sales in Kazakhstan.
- ✓ Building a factory in Kazakhstan would require a high level of initial investment. Not only this, time to recuperate the initial outlay would also be higher and with higher risks. It would also be preferable to have a first contact with Kazakhstan market. Later, if the evolution of the initial investment (as well as the proposed strategies) expands in the right direction, the possibility of building a factory in Kazakhstan could be considered.

On the other hand, we can also conclude that the investment is followed by a level of risk that the company cannot control. A high level of investment such as the one that is proposed is close to a very uncontrollable risk. Legal changes and political factors such as economic or political crises (revolutions) can influence Pentair's investment negatively. Starting a business in a communist government can lead to more difficulties that need to be considered.

Finally, it is considered that Pentair's hypothetical investment with the aim of increasing its share of the valve and control market in an emerging country such as Kazakhstan could be successful if the different strategies are followed. There cannot be absolute certainty that the investment will produce the necessary returns due to the political and economic situation of Kazakhstan.

APPENDIX

(Appendix: Table 1) Other information. (The Oil and Gas year, s.f.)



KAZAKHSTAN AT A GLANCE THE YEAR IN REVIEW

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GEOGRAPHY

- Area: 2,724,900 square kilometres
- Capital: Astana
- Climate: low of -54 degrees Celsius and high of 46 degrees Celsius
- Official languages: Kazakh, Russian
- Population: 17.4 million (January 2014)

POLITICS

- Political system: Presidential republic
- President: Nursultan Nazarbayev

ECONOMY

- Currency: Tenge (\$1: KZT181.080)

- GDP: \$224.4 billion (2013)
- Inflation: 5.8 percent (2013)

COMMERCE

- Petroleum net liquids exports: Around 1.4 million barrels per day (2012)
- Proven crude oil reserves: 30 billion barrels (2013)
- Total oil production: 1.79 million barrels of oil per day (2013)
- Proven gas reserves: 1.5 tcm (53 tcf) (2013)
- Natural gas production: 18.5 bcm (653 bcf) (2013)

Sources: Ministry of the National Economy of the Republic of Kazakhstan, CIA World Factbook, World Bank, EIA, Observatory of Economic Complexity, Tengizchevroil

(Appendix: Table 2) List of Pentair patents. (Justia Patents - Pentair V&C, s.f.)

Patents by Assignee Pentair Valves & Controls US LP

1. [Sleeve seal for gate valves](#)

Patent number: 9188231

Type: Grant

Filed: September 16, 2011

Date of Patent: November 17, 2015

Assignee: Pentair Valves & Controls US LP

Inventor: Viet Nguyen

2. [Pump apparatus](#)

Patent number: 8702399

Type: Grant

Filed: October 7, 2005

Date of Patent: April 22, 2014

Assignee: Pentair Valves & Controls US LP

Inventor: Mark Krohn

3. [Pressure regulator having an integral pilot and self-relieving mechanism](#)

Patent number: 8627846

Type: Grant

Filed: November 5, 2010

Date of Patent: January 14, 2014

Assignee: Pentair Valves & Controls US LP

Inventors: John R. Grenaway, Mark K. Hamm

4. [Pressure build economizer valve](#)

Patent number: 8517043

Type: Grant

Filed: November 9, 2010

Date of Patent: August 27, 2013

Assignee: Pentair Valves & Controls US LP

Inventor: Mark K Hamm

5. Valve assembly having a unitary valve sleeve

Patent number: 8397386

Type: Grant

Filed: July 16, 2010

Date of Patent: March 19, 2013

Assignee: Pentair Valves & Controls US LP

Inventor: Kristopher Weide

(Appendix: Table 3): Picture of the Emerson Thermal Power plant in Kazakhstan. (EMERSON News Release, 2010)



(Appendix: Table 4): Emerson Electric subsidiaries in Kazakhstan. (EMERSON Electric , s.f.)

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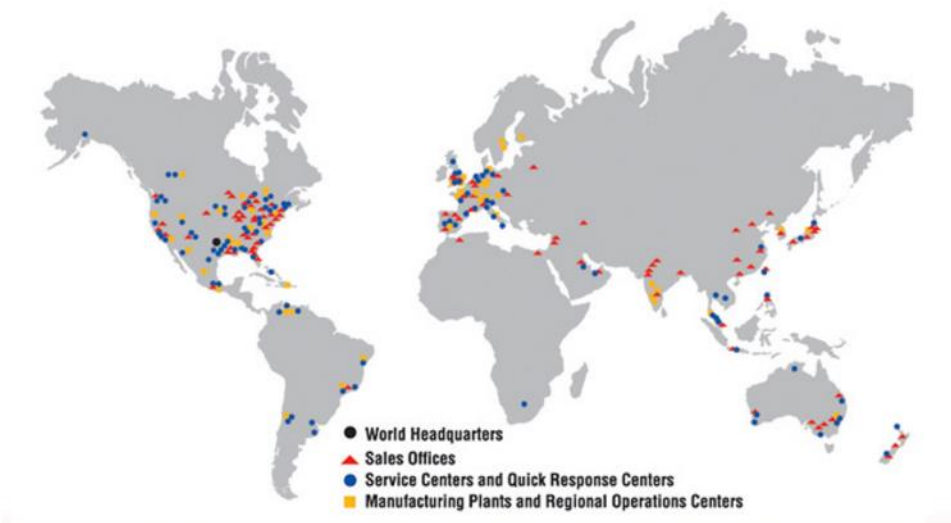
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(Appendix: Table 5) Flowserve map with presence over the globe. (FLOWSERVE at a Glance, s.f.)

A Local Presence with a Global Reach

Flowserve people, processes and experience help companies in more than 70 countries around the world.



(Appendix: Table 6) Gross Domestic Product evolution (%). (IMF - Caucasus and Central Asia, s.f.)

Trending down			
The slump in global commodity prices and a slowdown in neighboring economies reduce growth in the CCA. (real GDP growth, percent)			
		Projection	
	2014	2015	2016
Caucasus and Central Asia	5.3	3.7	4.0
Oil and gas exporters	5.4	3.8	4.1
Azerbaijan	2.8	4.0	2.5
Kazakhstan	4.3	1.5	2.4
Turkmenistan	10.3	8.5	8.9
Uzbekistan	8.1	6.8	7.0
Oil and gas importers	4.7	2.3	3.0
Armenia	3.4	2.5	2.2
Georgia	4.8	2.0	3.0
Kyrgyz Republic	3.6	2.0	3.6
Tajikistan	6.7	3.0	3.4
Commonwealth of Independent States ¹	1.0	-2.7	0.5
Russia	0.6	-3.8	-0.6
China	7.3	6.8	6.3

Sources: National authorities; and IMF staff calculations and projections.
¹Armenia, Azerbaijan, Belarus, Kazakhstan, the Kyrgyz Republic, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan. Georgia and Mongolia, which are not members of the Commonwealth of Independent States, are also included in this group for reasons of geography and similarities in economic structure.

According to an IMF survey², the economic forecasts for Caucasus and Central Asia GDPs are that they will decrease from 4.3% in 2014 to 2% average in 2015 and will rise as much as 3.1% in 2016. Depreciation time will not be an opportunity Kazakhstan investment, because their real GDP will decline by an average of 2.3%. Nevertheless, GDP growth projection can be an opportunity for Pentair Valves Company in order to sell their valves from 2015 to 2016. This period of time is suitable for Pentair's investment within the growing markets in the coming years. Besides, as in the following years the GDP growth forecasts seem to indicate a slight increase.

² International Monetary Fund: (IMF - Caucasus and Central Asia, s.f.)

(Appendix: Table 7) Annual GDP evolution in Kazakhstan. (Expansión - Datosmacro, 2014).

Evolución anual PIB Kazajistán			Evolución anual PIB Per capita Kazajistán		
Fecha	PIB Mill. €	Var. Anual	Fecha	PIB Per C.	Var. Anual
2014	163.956€	4,3%	2014	9.411€	-9,2%
2013	174.585€	6,0%	2013	10.171€	8,7%
2012	158.308€	5,0%	2012	9.361€	15,5%
2011	135.150€	7,5%	2011	8.105€	19,4%
2010	111.574€	7,3%	2010	6.789€	32,8%
2009	82.789€	1,2%	2009	5.111€	-11,1%
2008	90.671€	3,3%	2008	5.747€	16,9%
2007	76.497€	8,9%	2007	4.914€	17,3%
2006	64.511€	10,7%	2006	4.190€	39,1%
2005	45.856€	9,7%	2005	3.013€	30,9%
2004	34.708€	9,6%	2004	2.302€	26,2%
2003	27.267€	9,3%	2003	1.824€	3,9%
2002	26.087€	9,8%	2002	1.755€	5,4%
2001	24.735€	13,5%	2001	1.666€	25,1%
2000	19.796€	9,8%	2000	1.332€	25,5%
1999	15.813€	2,7%	1999	1.061€	

(Appendix: Table 8) Impact of falling commodity prices and contraction of Russia's economy. (IMF - Caucasus and Central Asia, s.f.)



(Appendix: Table 9) Corruption Perception Index in 2015. (Index, 2015).

CORRUPTION MEASUREMENT TOOLS

CORRUPTION PERCEPTIONS INDEX (2015) ?

RANK: **123** /168 SCORE: **28** /100

BRIBE PAYERS INDEX (2011) ?

GLOBAL CORRUPTION BAROMETER (2013) ?

CONTROL OF CORRUPTION (2010) ?

PERCENTILE RANK: **15%**

SCORE: **-0.997612445**

OECD ANTI-BRIBERY CONVENTION (2011) ?

(Appendix: Table 10) Pentair's Backlog of Valve and Control orders and delivery time. (Pentair - Annual & Other Reports, s.f.)

INFORMATION REGARDING ALL REPORTABLE SEGMENTS

Backlog of orders by segment

<i>In millions</i>	December 31			
	2015	2014	\$ change	% change
Valves & Controls	\$ 1,127.6	\$1,233.7	\$ (106.1)	(8.6)%
Flow & Filtration Solutions	289.6	361.2	(71.6)	(19.8)
Water Quality Systems	141.4	121.0	20.4	16.9
Technical Solutions	319.0	281.0	38.0	13.5
Total	\$ 1,877.6	\$1,996.9	\$ (119.3)	(6.0)%

Backlog from Valves & Controls consists of business in the energy and industrial verticals. Generally, backlog from Valves & Controls has a longer manufacturing cycle and products typically ship within six to twelve months of the date on which a customer places an order. Backlog from Flow & Filtration Solutions, Water Quality Systems and Technical Solutions typically has a shorter manufacturing cycle and products generally ship within 90 days of the date on which a customer places an order. A substantial portion of our revenues, however, result from orders received and product delivered in the same month. We record as part of our backlog all orders from external customers, which represent firm commitments, and are supported by a purchase order or other legitimate contract. We expect the majority of our backlog from all segments at December 31, 2015 will be filled in 2016.

(Appendix: Table 11) Payback calculations:

	Q0	Q1	Q2	Q3
CF	-25.000.000,00	10.000.000,00	17.000.000,00	25.000.000,00
CF Accumulated	-25.000.000,00	-15.000.000,00	2.000.000,00	27.000.000,00
	Payback	1 year, 10 month and 17 days		
		1 year	17000000	
		x	15000000	
		x=	0,882352941	year
		10,58823529	month	
		17,6470587	days	

(Appendix: Table 12) Oil and Other liquids production, 2015:

Oil and Other Liquids Production (2015)

Ranking 2015	Country (Developing Regions as Pentair)	Oil Production Barrels/day	Percentage of Production
1	United States	13.973.000	
2	Saudi Arabia	11.624.000	23,29%
3	Russia	10.853.000	
4	China, People's Republic of	4.572.000	9,16%
5	Canada	4.383.000	
6	United Arab Emirates	3.471.000	6,95%
7	Iran	3.375.000	6,76%
8	Iraq	3.371.000	6,75%

9	Brazil	2.950.000	5,91%
10	Mexico	2.812.000	5,63%
11	Kuwait	2.767.000	5,54%
12	Venezuela	2.689.000	5,39%
13	Nigeria	2.427.000	
14	Qatar	2.055.000	4,12%
15	Norway	1.904.000	
16	Angola	1.756.000	
17	Algeria	1.721.000	3,45%
18	Kazakhstan	1.719.000	3,44%
19	Colombia	1.016.000	2,04%
20	India	978.000	1,96%
21	Oman	951.000	1,91%
22	Indonesia	911.000	1,83%
23	United Kingdom	906.000	
24	Azerbaijan	856.000	1,71%
25	Argentina	715.000	1,43%
26	Malaysia	697.000	1,40%
27	Egypt	667.000	1,34%
29	Libya (OPEC)	516.000	
30	Australia	478.000	

TOTAL TOP 30 OIL PRODUCTION **49.917.000** 100,00%
(only countries considered in Pentair's Developing Region)

[Source US Energy Information Administration
http://www.eia.gov/](http://www.eia.gov/)

(Appendix Table: 13) Pentair Annual Report: Valves and Controls net sales. (Pentair - Annual & Other Reports, s.f.)

Pentair plc and Subsidiaries**Notes to consolidated financial statements**

of ratios to measure performance of our reporting segments. These results are not necessarily indicative of the results of operations that would have occurred had each segment been an independent, stand-alone entity during the periods presented. During the third quarter of 2015, we revised our definition of segment income to exclude intangible amortization to better reflect how management assesses performance of the business. Segment income (loss) represents operating income (loss) exclusive of intangible amortization, certain acquisition related expenses, costs of restructuring activities, "mark-to-market" gain/loss for pension and other post-retirement plans, impairments and other unusual non-operating items.

Financial information by reportable segment is included in the following summary:

	2015	2014	2013	2015	2014	2013
<i>In millions</i>	Net sales			Segment income (loss)		
Valves & Controls	\$ 1,840.1	\$ 2,377.3	\$ 2,451.7	\$ 223.0	\$ 398.5	\$ 349.3
Flow & Filtration Solutions	1,441.6	1,603.1	1,651.8	185.1	199.5	202.4
Water Quality Systems	1,381.5	1,356.4	1,269.3	281.8	253.3	227.9
Technical Solutions	1,809.3	1,728.1	1,663.4	395.0	378.1	342.0
Other	(23.5)	(25.9)	(36.5)	(83.7)	(93.7)	(108.4)
Consolidated	\$ 6,449.0	\$ 7,039.0	\$ 6,999.7	\$ 1,001.2	\$ 1,135.7	\$ 1,013.2
	2015	2014	2013	2015	2014	2013
<i>In millions</i>	Identifiable assets ⁽¹⁾			Depreciation		
Valves & Controls	\$ 3,243.3	\$ 4,045.2	\$ 4,198.2	\$ 58.3	\$ 59.0	\$ 64.0
Flow & Filtration Solutions	1,822.8	2,040.0	2,311.7	23.6	23.7	23.4
Water Quality Systems	1,801.7	1,828.3	1,851.1	21.7	21.9	20.3
Technical Solutions	4,488.4	2,117.3	2,093.4	27.6	24.2	23.6
Other	500.8	624.4	1,288.9	8.3	9.9	10.0
Consolidated	\$ 11,857.0	\$ 10,655.2	\$ 11,743.3	\$ 139.5	\$ 138.7	\$ 141.3

(Appendix: Table 13) LIBOR USD for one year: 1.33 %

libor	euribor	bancos	inflación
➤ Tipo LIBOR EUR - overnight		-0,39571 %	03-06-2016
➤ Tipo LIBOR JPY - 1 semana		-0,03443 %	03-06-2016
➤ Tipo LIBOR USD - 1 mes		0,46480 %	03-06-2016
➤ Tipo LIBOR CHF - 3 meses		-0,73780 %	03-06-2016
➤ Tipo LIBOR GBP - 6 meses		0,72475 %	03-06-2016
➤ Tipo LIBOR USD - 12 meses		1,33140 %	03-06-2016
Para todos los tipos LIBOR, haga clic aquí			

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