A CUSTOMER FOCUSED CHANGE MANAGEMENT JOURNEY VIA CUSTOMER SEGMENTATION

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ABSTRACT

This thesis covers, with a sample business case, the changes of an established organisation towards a more customer focused management. The change process will use the customer segmentation methodology as a reference point on each of the steps covered, and develop them from there. It covers the business changes for the areas of: market analysis, product development, sales structure, operational structure, and change management culture. The thesis is for the Business Management and Entrepreneurship master degree at Häme University of Applied Sciences.

The purpose of the thesis is to provide a reference on how any organization, independently of its size or sector, can change to a more customer focused culture. To provide a business case as complete as possible, the sample company will be an engineering multinational with a wide variety of segments, and with different customer profiles working in parallel for each of the segments. The company operates in two separated B2B business lines: one technological utility product type (with several models) and its maintenance as a service. The thesis provides a theoretical framework for each of the business areas, and then it develops that part of the business case. This business case tries to provide enough context, references and tools for each of the covered topics, in a way that any section could be applied independently on smaller companies or regions for their specific need.

The core area of the thesis and the business case is customer focused change management, as a way to support the companies to become more efficient and resilient on the dynamic and volatile markets that most sectors live in. However, the digitalisation trend is a very strong force of change that is rapidly disrupting all the traditional offline sectors. In order to support with guidance on that second important force of business change, the thesis includes a brief epilogue on online marketing.

Keywords Change management, customer segmentation, business models, product management, PLM, organizational change, online marketing.

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1 INTRODUCTION

In today's businesses, there is a high demand for flexibility and adaptability. In a constantly changing environment due to financial crisis, digitalisation, change of business models, shift of global political powers, climate change, etc., the companies must adapt their businesses and their organizations to survive. This adaptation need applies to every company: from the start-up that is trying to find a profitable business model to the big corporation that has lost agility to adapt to the market changes.

In the past decades the need was mainly focused on increasing demands for competitiveness and profitability. This was mainly achieved via globalization, further consumerism in IT systems. This last enabler, the IT technologies, has moved from being a tool to a driver of change. And today, due to the digitalisation of businesses and consumers habits, the companies need for change adaptation has increased to levels unknown in the past.

How can companies keep improving their profitability and make the necessary changes, even business disruptions, required by the market?

One of the possible answers is by a further customer orientation that will allow the companies to identify the different and align with customer profiles (McKinsey Quarterly, June 2009), to define the organisational setup, to put the customer at the centre of the company culture, and to understand and predict future changes in the sector. This paper will try to provide a methodology, together with a business case to use as a guideline, on how to apply a customer focused business change for an organization.

The starting point of this adaptation will be the application of the well stablished methodology of customer segmentation as a way to review and redefine the priorities of the company. This customer segmentation will then be applied over the three core possible business models of a company: product development, sales management and operations. The application of customer segmentation for these three areas will improve the company efficiency and flexibility, and from there they should be ready to make the further necessary changes towards digitalisation.

Every running company is already using a certain level of customer segmentation, in a formal or informal way. And possibly this would be more visible after reading this paper. This thesis will cover its origin and its techniques, for a better and more conscious way on how to use it, and to obtain better results.

2 CUSTOMER SEGMENTATION METHODOLOGY

This chapter will cover the origins of customer segmentation methodology and its evolution until the way that it is being used today. It will also cover the differences when customer segmentation is applied to different sectors, markets in different development stages and the major differences between B2B (business to business) and B2C (business to customer). Lastly, it will include the most common uses for customer segmentation today.

2.1 History of customer segmentation and market segmentation.

Customer segmentation is the practical application of market segmentation to the portfolio of existing or potential customers. This section will cover the history of market segmentation theory, and the first applications of customer segmentation.

Customer segmentation may sound like a theoretical concept invented by economists during the 20th century. However, a look at the history makes us realize that customer segmentation is really a codification of a common practice that has been done by traders and merchants since centuries. This legacy of practices has been slowly evolving into the current concept and methodology of customer segmentation that is widely implemented worldwide today in every single sector of our businesses.

There are two main strategies in marketing that are used, with different intensities, across history: the “mass-market strategy” (such as the early days of Ford’s cars) and the development of “market segmentation and product segmentation” that is covered in this paper.

The first documented reference to “Market segmentation” was made by Wendell R. Smith in 1956 (Smith 1956). At that time, few years after the World War II, most of the economy was mass-market production; but the improvement of the economic situation in certain classes and new technologies applied to production flexibility allowed a new transition into market segmentation (Quelch & Jocz 2008, 829). Smith defended the necessity to add focus in market segmentation, together with the existing product segmentation, as way to stimulate demand and improve efficiencies on marketing and production. His article had a high influence at the time, and both the name itself and the intensive use of this marketing practise were stablished until our days.

The development of market segmentation had several examples and milestones across history, some of the most representative ones are the following:

- There are studies of market segmentation based on geography in the Bronze Age (Alberti & Sabatini 2012, 22–25), and based on the price of grain in the old Babylonia (Spek, Luiten & Leeuwen 2014, 3–11).

- There are archaeological sites in Europe dated from the 16th and 17th century which show a further development of the market segmentation by the traders. They had separate selling areas and products for the wealthiest customers and for the rest. A good example of these practices can be found in the "Born archaeological site" – a very well preserved 8000 m^2 excavation area situated in the city centre of Barcelona (elbornculturaimemoria 2017) – where different businesses such as "Casa Corrales" and "Casa Santmartí" practiced this basic customer segmentation.

- However, it is at the beginning of the 19th century when records of a more advance customer segmentation appeared, considering most of the aspects included in today's methodologies. A remarkable example of this segmentation is explained in the thesis "Segmentation Strategies and Practices in the 19th Century German Book Trade: a Case Study in the Development of a Major Marketing Technique." (Fullerton 1985, 135–139) where Ronald explains the practices of the German publishers in detail: premium book editions for the upper class, efforts to find new distribution channels for mid-class and working class, Christmas promotions on family books, specialized publishers for a certain niche customer, and even demographic analysis as early as 1920s based on geography and profession.

- The marketing and market segmentation continued their developments during the first half of the 20th century, but its final development commenced on the second half of the 20th century, after the two World Wars ended. A new era of prosperity started in most of the world, and market segmentation was boosted also by:
    - The further development of capitalism in the Western World, against the communism politics during the Cold War.
    - The growth of segmentation in the working class. This happened not only by type of industry, but also inside several big corporations which had drastically increased their number of employees during the World Wars.
    - Well stablished mass media channels: magazines, radio channels, and the beginning of colour television.
    - The further development of data availability; from the original demographic analytics from Europe in 1920s, to a global utilization in a variety of segmentations types.

  The development increased further with several papers and ramifications on market segmentations theories and applications during the second half of 20th century, reaching a peak on this "standard market segmentation" around the year 1980 (Tedlow & Jones 1993, 8–36).

- Further developments in IT (Information Technologies) moved the standard segmentation into a new era with narrower markets or even specific individuals. The trend started around 1980 with the beginnings of digital communications, and it's a trend that has grown exponentially since then until our days. In this new period, the "standard market segmentation" is still heavily used for the areas of: academic works (see graph below), market analytics agencies, B2B businesses, and first step of B2C businesses. But the data collection, via several channels, on the B2C businesses has made possible a personalization in an individual level in some cases. Good examples of this hyper-segmentation are: supermarket specific discounts based on individual purchases database, Google AdWords, and the very detailed "segmentation by interest" that became a reality (both for data input and applicability) since the beginning of the social networks such as Facebook. More details on this online development are covered in the epilogue of this thesis.

Today, market segmentation is widely used both in the academic and the business world. The Google trend graph for "Market Segmentation" (see below) can help to get an estimated idea of the weight of academic/business use of this marketing practice. The graph shows a clear decrease in term searches during the academic summer time (June to August) and in the Christmas break. It can be seen also that the popularity of the term has been relatively stable in the last 15 years.

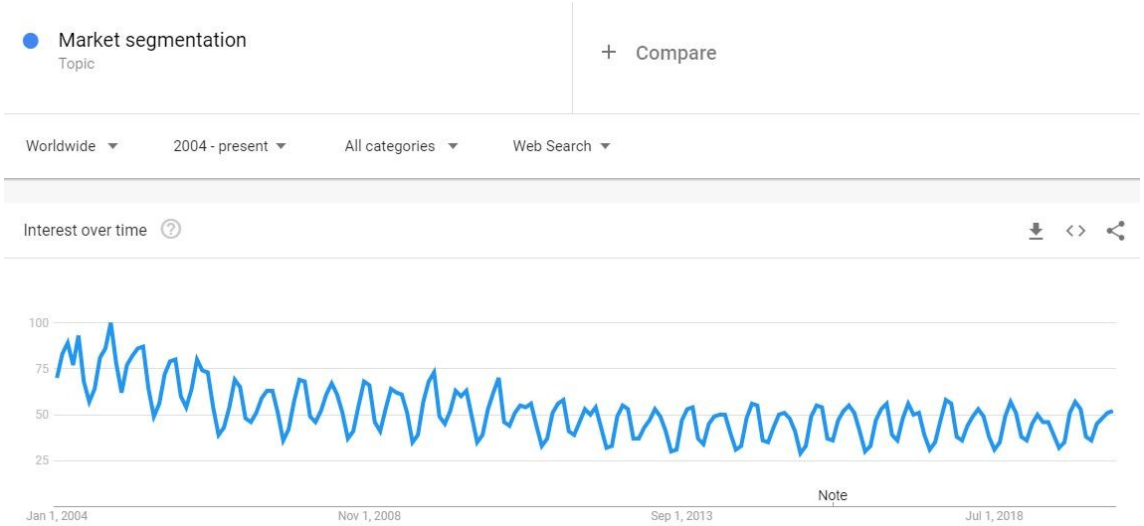

Figure 1. Global search trend of the term "Market Segmentation" (Google 2020)

As a summary, market segmentation and customer segmentation have been natural practices used by traders and merchants since ancient times. It developed naturally as the society gained in complexity (as the civilizations managed to free up time from survival and feeding activities) and it has been a process that has continued its development until our days. The concept of "market segmentation" started to be used from

1956, and it was widely adopted during the second half of the 20th century both in the academic and in the business world. Despite of the several new marketing practices that has arisen with the new technologies in recent years, the term and the practice is still very popular, and it's expected to remain that way in the coming years.

2.2 **Types and uses of customer segmentation**

The application of customer segmentation tends to differ greatly whether a business sells directly to final customers (B2C business) or whether it sells to other companies (B2B business). While the internal companies' structures may adapt around segments in a similar way, the type of segments and the impact on their sales strategy are quite different. The following section will go deeper on the main differences between B2C and B2B when it comes to customer's relationship. And it will provide the standard type of product segmentation that is commonly used for each company type.

2.2.1 B2C customer segmentation

The four common types of customer segmentations that are used in B2C businesses are:

- Demographic. Based on characteristic of the population. Examples: age, gender, language, education, family size, etc.
- Geographic. Based on location or region. Examples: city, country, continent, etc.
- Psychographic. Based on lifestyle or believes. Examples: conservative, liberal, young professional, sportive, etc.
- Behavioural. Based on consumption or usage behaviour. Examples: tech-savvy, early adopter, price conscious, etc.

From these standard types of segments, each company will select the ones that make sense and provide added value for them. The following parameters are useful to select the best type of segments: (Gavett 2014)

- Identifiable and differentiable: it should be clear how to identify and differentiate the customers between segments, and these segments should be understood by most of the colleagues in the organization.
- Substantial: the segments must be relevant, financially, for the business.
- Stable: the criteria have to be based on non-temporal characteristics.
- Accessible and actionable: it should be possible to reach customers in that segment, both for communication and distribution channels, but also for added value or need of the company's products/services.

2.2.2 B2B Customer segmentation

There are usually few aspects that make B2B business different from most of B2C businesses:

- The level of specialization in B2B companies tends to be higher than in B2C companies, as they might not provide completely finished products/services, but just a specific part of it.
- The number of customers in B2B companies tends to be much lower, and the volume per customer tends to be higher.
- The B2B customers tend to repeat business with the same supplier, in stablished commercial relationships, and the customers might require personalized configurations either of the product or the processes.

The commonly accepted criteria for type of segments covered in the previous section tends to focus on the "customer needs" or "customer added value".
This "customer need" segmentation explained in the B2C section remains a focus point in B2B businesses. But the differences in customer relationship and operational costs of each customer add an extra focus area in B2B: the "value-based customer" segmentation type, or what is the value of this customer for the company.
Just to clarify, "customer value" is also present in a certain extend on B2C, but its weight of importance – especially regarding benefits vs. operational cost – tends to make it a less relevant than in B2B.

Based on these both needs, the following list provides a good standard type of segmentation for B2B businesses (OpenView Labs 2012, 5):

- Segmentation by geographic base.
    - Examples: EMEA (Europe-Middle East-Africa), Asia-Pacific, etc.
- Segmentation by industry / sub-industry / industry served / customer served.
    - Examples: construction sector, welding sub-sector, public company, etc.
- Segmentation by product class / product usage.
    - Examples: premium product, premium associated services to a product, etc.
- Segmentation by organization size.
    - Examples: measured by revenue to our company, by number of employees, by number of branches, etc.
- Segmentation by product delivery model / product format / packaging format / special technology / process methodology
    - Examples: special finishes, specific industry standards such as IP protection, delivery included, etc.
- Segmentation by special use / needs.
    - Example: full personalized product, niche segment with high margins, etc.

2.3 Most important uses and applications

The customer segmentation, as per the original definition, had the purpose of optimising the sales and production efforts, by clustering customers that share certain elements in common. Some examples of clustering advantages are:

- Sales optimization: pricing, sales package, product value, etc.
- Operations optimization: customer's languages, logistics, etc.

However, there are several other areas that will be also affected by a fully implemented customer segmentation strategy:

- Business strategy, for aligning efforts in the most optimal segments.
- Organizational setup, for finding a closer adaptation to the selected focused segments and customers.
- Product configuration, for adjusting to the customer's perceived value.
- Processes and tools, for aligning and measure the new objectives.
- Internal communication, for communicating and empowering the changes.
- External communication, for changing the customer's perception on the product, service or the brand itself.

A full implementation of a customer segmentation strategy, together with its customer focus, will have impact and ramifications in all the areas of the organization.
In order to get a better understanding of them, the next sections will cover a practical business case of these changes when they are applied on a B2B big size company.

3 SEGMENTATION FOR SPECIFIC SECTOR: ELEVATORS

The purpose of the following sections is to generate a business case that may serve as a model or reference for applications in other business. In order to provide a complete example, the business case will be a B2B company (that covers customer's needs, but also customer-value) of a big size company (that covers the customer's areas, but also the impact on the rest of a big organization). The selected sector provides also the opportunity to cover both a product and a service, and it also provides a good mix of type of customers that provide a wider overview on the subject of customer segmentation.

3.1 Sector introduction

The selected sector for this business case is the elevator sector, also known as vertical transportation sector, or lift sector. This section will

cover the basics of this sector to stablish a base knowledge and context for the rest of the thesis.

In a nutshell, the business of elevators has two main areas: product installation and modernization (as a project with a finished product), and product maintenance (as a service). The sector follows normally, with few exceptions, a "maintenance profit model". This is: a model where the company sells the original products for a low margin, in order to sell complementary products or services later on with a higher margin. It's also known as "Bait and hook business model", and it is applied in several other sectors such as razorblades, printers, mobile gaming, etc.
Additionally, it has users, which are not any type of customer – as they don't pay and they don't have any option to choose the product brand. However, they have exposure to the brand name and the product, and there are possibilities of extra monetization following the exact ad business models of the "free Apps" in the digital world, for example.

In order to explain at once the whole elevator business model, the business model canvas tool invented by Alex Osterwalder (Osterwalder & Pigneur 2010, 16–19) is very powerful:

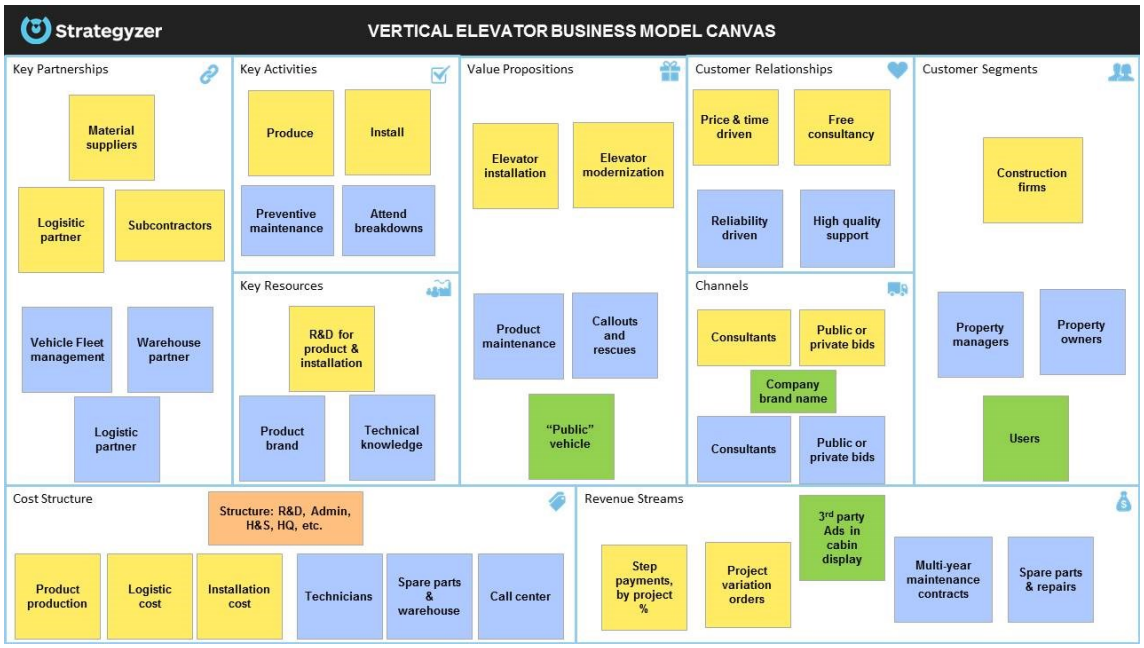

Figure 2. Business Model Canvas elevator sector (powered by Strategyzer)

There are two different colours to explain in the same canvas the two main business lines in the elevator sector: installation (yellow) & maintenance (blue). The users are represented with the green colour. The explanation for each block, as explained originally by Osterwalder in his first book (Osterwalder & Pigneur 2010, 20–41) and his Webpage, are:

- Key Partnerships: describes the network of suppliers and partners that make the business model work.

- Key Activities: describes the most important things a company must do to make its business model work.
- Key Resources: describe the most important assets required to make a business model work.
- Value Propositions: describes the bundle of products and services that create value for a specific Customer Segment.
- Customer Relationships: describes the types of relationships the company establishes with specific Customer Segments.
- Channels: describes how a company communicates with and reaches its Customer Segments to deliver its Value Proposition.
- Customer Segments: are the different groups of people or organizations that the enterprise aims to reach and serve.
- Cost Structure: describes all costs incurred to operate the business model.
- Revenue Streams: represents the ways the company generates cash from each Customer Segment.

Regarding competition, the market is dominated by a handful of very strong global players that concentrate around 79% of the total market size, and the remaining 21% is covered by local companies that are closer to the customer and provide higher flexibility (Statista 2020). Due to production volumes and economy of scale, these five big corporations accumulate a higher market share in the project business line. Due to closer customer relationship, the smaller local companies tend to accumulate a slightly higher share in the maintenance business line, up to 25% of the local markets.

3.2 **Segmentation types**

This section will cover the application of customer segmentation to the specific elevator sector as a sample business case. First it applies the theoretical framework to the sector specifications to find out the most relevant type of segmentations. Then it develops the selected segments in detail. And finally it builds a customer segmentation model that contains all the relevant information for the elevator sector, which will be the reference point for the company changes covered in section 4.

3.2.1 Elevator sector – B2B customer segmentation

The types of segments that were discussed in section 2.2.2 will be now sorted from the most to the least relevant for the elevator sector:

Relevant:

- Segmentation by “industry”: the needs and use of the products differ greatly from different “industries” and their environments. At the same time, the needs inside the same industry tend to be similar. For those two reasons, this is the most common way to segment

customers in the elevator sector. The details on this segmentation will be covered later.

- By product class: while the needs and legal requirements are shared inside the same industries, there are requirements for different qualities and finishes. This "second level of specifications" can be clustered as a sub-type of segmentation for most of the industries, as it will be covered later on.

Not relevant for customer, but relevant internally:

- By organization size: the product and service needs (the core areas for customer segmentation) do not change with the company size. However, there are certain areas of customer relationship that change with the customer's company size, such as sales key accounts or personalized operational/admin processes.
- By geographic base: the products and service are slightly affected by the local regulations, but the core product and service tend to remain the same. For that reason, it's not commonly included in the main customer segmentations.

  The customers (construction companies and property managers) are highly decentralized, which makes it difficult to use this segmentation type to generate only few relevant customer segments.

  The most important activities are locally made, so taxes need to be paid in each country, but in order to manage the amount of companies (at least one per country) it's common to use the geography as an item for internal segmentation: nearby countries (with a subdivision, if needed, by market price or legislation) tend to merge into regions, and these regions into Business Areas that act as important "internal segmentation", but they won't be the main focus point for the purpose of this thesis, that focuses mainly on customer segmentation.

Not relevant:

- By product delivery/format/technology: these differences are relevant inside specific departments of the lifts companies. For example: the logistic department have different delivery methods, and they tend to use the same delivery method for the same country/customer. But this "department-level segmentation" doesn't transcend to the overall companies' segmentations, neither for internal segmentations nor for customer segmentation.
- By special use/need: while there are special use and needs of the products and services; it's normally possible to associate them directly inside the type of segments created "by industry" or "by product class". This reason makes this type of segmentation not commonly used in the sector.

From the analysis of the different type of B2B segments, two of them are highly relevant "segmentation by industry" and "by product/service class". The industry will define the main segmentation, linked to the use

and requirements of the product/service that these industries tend to need. The product class will normally separate the different levels of the perceived quality inside each industry.

3.2.2 Elevator sector – Segmentation by type of industry

Looking at the most relevant companies of the elevator sector, they tend to share (with small differences) their understanding for the industries segmentation; the following segmentation contains the most common agreement in the sector, and what's included in each of them:

- Residential. This industry or sector includes all the lifts used for residential purposes.
  - Sub-categories to highlight:
    - Public housing flats
    - Mid-height buildings of apartments
    - Private multi-floor residences
  - Common requirements: low traffic, travel from main floor to resident floor, homey-design, mirror is heavily used, not too noisy product.
- Commercial. This industry involves all the lifts used in commercial areas and public use buildings.
  - Sub-categories to highlight:
    - Offices
    - Shops and Commercial centres
    - Hotels
    - Hospitals
    - Other public buildings (libraries, cinema, etc.)
  - Common requirements: mid to high traffic, ready for wheelchairs and baby trolleys, vandalism resistance, glass elements, TV ads when possible, high time pressure for installation time, very high time pressure for callouts and rescues.
- Infrastructure/Transport. This category includes all the lifts used for urban mobility.
  - Sub-categories to highlight:
    - Undergrounds and train stations
    - Airports
    - Public car parks
    - Open urban mobility (to connect parts of a village/city)
  - Common requirements: accessibility required, high vandalism resistance, prepared for open environments, interfaces to connect and operate from control centres, CCTV cameras, very high time pressure for callouts and rescues, very high demands on reparation times.

- Special/High-rise. This category contains a compendium of special cases, but still they tend to share several common areas.
    - Sub-categories to highlight:
        - Skyscrapers
        - Industrial/Factory elevators
        - Marine elevators
        - Other special cases
    - Common requirements: very specific ad-hoc demands, technology-stretched in some direction, special functionalities needs, complex installation requirements, specific tests and technical documentation before installation handover, special maintenance demands, some level of training to key local users required.

At this point, it's important to highlight the fact that two possible associations are possible for industry. The industry segments could be defined per "industry cluster" (Residential / Commercial / Infrastructure / Special), or they could be defined per "industry-environment" (Example: Commercial-Office; Commercial-Shop, Commercial-Hotel, etc.). In order to decide the best solution, it can be applied the criteria defined in the theory part of B2B customer segmentation (Gavett 2014):

a) Identifiable and differentiable.
b) Substantial.
c) Stable.
d) Accessible and actionable.

Both segmentation types, "by industry" and "by industry-environment", are relevant for points a) and c). But some of the segments of "industry-environment" aren't big enough to be substantial (point b), and a segmentation model with circa 20 environments won't be actionable (point d). For that reason the segmentation model will be based on "by industry". However, in few cases the "industry environment" will be used, especially for data collection (Example: to calculate the amount of units per year per segment, some of the data might be obtained in the level of "industry environment", and then merged into its segment).

3.2.3 Elevator sector – Segmentation by product class

The previous category has provided the main categorization used for lift's customer segmentation. The requirements written in each category define most of the product and operational requirements that will shape the companies' solutions and organization.

However, there is another category type that has sub-impact in the elevator companies; this is the product class, or the quality-perception class. There are mainly in three different categories that share the same needs and requirements across the industries:

- Functional product: “just a box to get in, and move up and down”
    - Common requirements: very price sensitive installation, price sensitive maintenance cost, basic design, reliability must be maintained.
    - Companies requirements and business model adaptation:
        - Cheap product and installation, with cost optimization on production (factory) and install (subcontractors).
        - Basic installation cost, that allows for variation orders if extra costs are required during execution.
        - Basic preventive maintenance contract, with pay-per-visit model for breakdowns, repairs and rescues.
- Comfort product: “OK product performance that kind of match the overall architect design”
    - Common requirements: design options for lift cabin interior, no noises during operation, mix between price and quality product, reliability and peace of mind are required during the maintenance.
    - Companies requirements and business model adaptation:
        - Product with design options, to be able to personalize it. This affects only the elevator cabin, but almost no other component of the lift.
        - Cheap installation cost, as it doesn’t provide additional perceived value.
        - Maintenance contract with options checklist to adapt to customer (Example: extra product warranty).
- Premium product: “Trustworthy product and supplier to make our singular project a reality to be proud of”
    - Common requirements: personalized product with a design story, spotless design finish, customer requires a feeling of extra control and VIP service, proactive multi-level communication, prioritization of quality over price.
    - Companies requirements and business model adaptation:
        - Selling of product and company during bidding phase: other project’s references, company overview, key points of contact, commitment from management, contract legal obligations, etc.
        - Strong communication Customer-Sales-Operations required during most of the project, to keep consistency on customer’s requirements.
        - Prioritization of installation quality vs. cost and time, for a higher service reliability and spotless design product.
        - Service contract tend to be “all included” to ensure the highest service quality. Customer will require a single point of contact to keep the VIP feeling.

3.2.4 Elevator sector – Segmentation model example

A good customer segmentation model needs to combine the most relevant type of segmentation. In other cases, if three or more segmentation types are very relevant at the same time, the representation of the model will increase in complexity, and it might not even be able to be shown in "just 2 Dimensions", but for this business case a 2D model is possible.

As it has been covered in the last sections, there are two very relevant types of segmentations for the lift industry: by industry, and by product class. The segmentation by industry is even more relevant and it will become the primary type of segmentation – and their segments will be called "primary segments" – while the product class will be the secondary type of segmentation – and its segments will be the "secondary segments".

Before a model representation, it needs to be analysed if all the segments combination have a representative volume of customers. In this model, it is detected that for some combination of primary and secondary segments there is no high volume of customers – or the volume is not reachable by the big elevator multinationals that business case represents. As an example: for the industry of "infrastructure" the product class is mostly premium, both for the environment requirements (complex installation, high service demands) and the aesthetics requirements (projects with high design and architectural requirements).

With all this in mind, the customer segmentation model proposed for the elevator sector can be built now step by step.

- Step 1: description of all possible environments for each segment, to ensure that no big portions of the market are left behind.

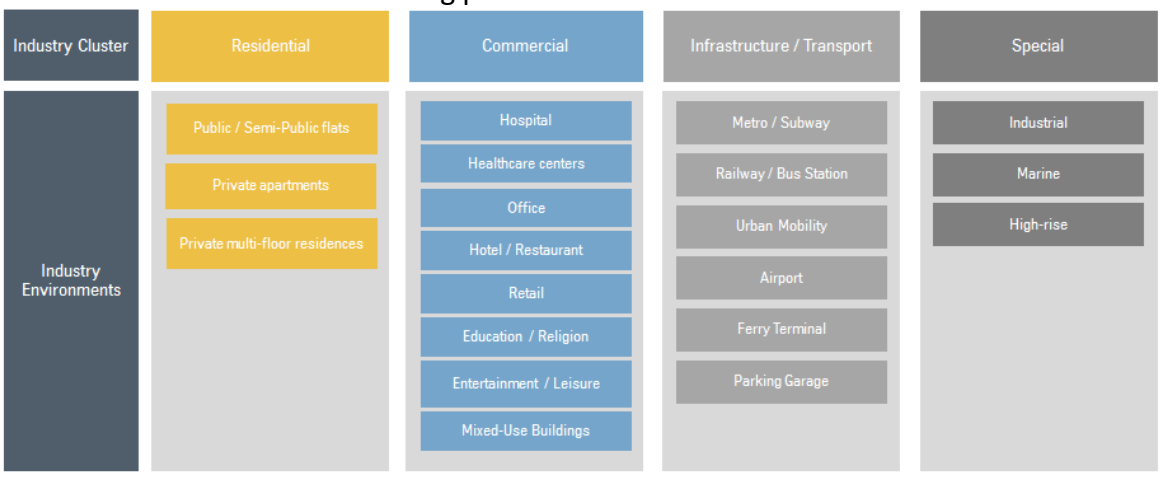

Figure 3. Step one. Primary sectors and their environments

- Step 2: merge of environments with similar conditions; this will help on the review of product class that is the secondary segment. The boxes with a continuous border line are quite well differentiated, while the boxes with a dashed border line share many more things in common (regarding customer demands and market requirements). All these details will help to model the final customer segmentation model.

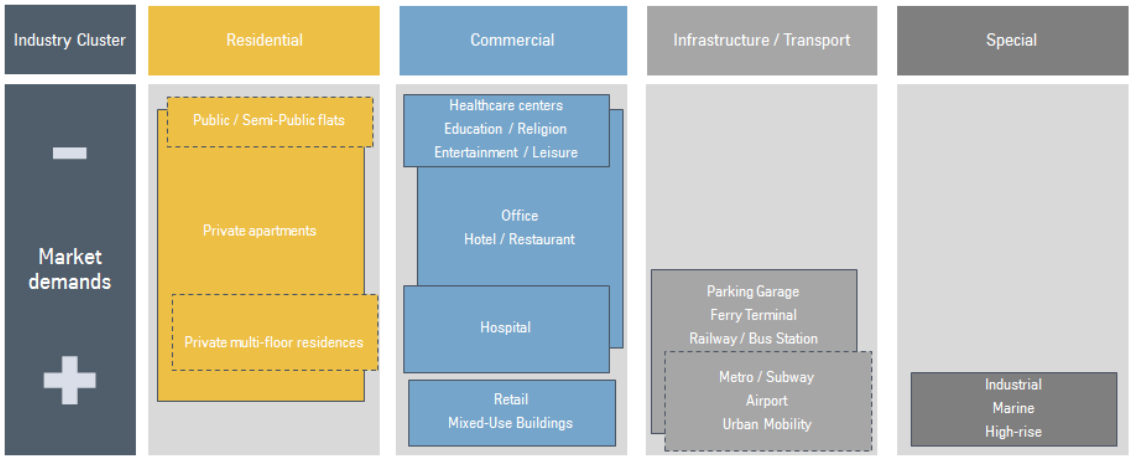

Figure 4. Step two. Merge of common environments per sector

- Step 3: the previous collected information provides information about how to segment the industries, how to sort and merge them, and a first feeling of market demands (which is aligned with product class, as covered before). Lastly, the input of "segment customer size" is included – based on data from industry and internal Customer Retention Management (CRM) systems – for each of the proposed sub-categories above. For those sub-categories with small customer size, they are merged into a common category with very similar needs. And for those sub-categories with a big customer size, they are split in parts to cover better the variety of customer's demands and details. At the end, all the segments of this proposed model share the same order of magnitude customer size.

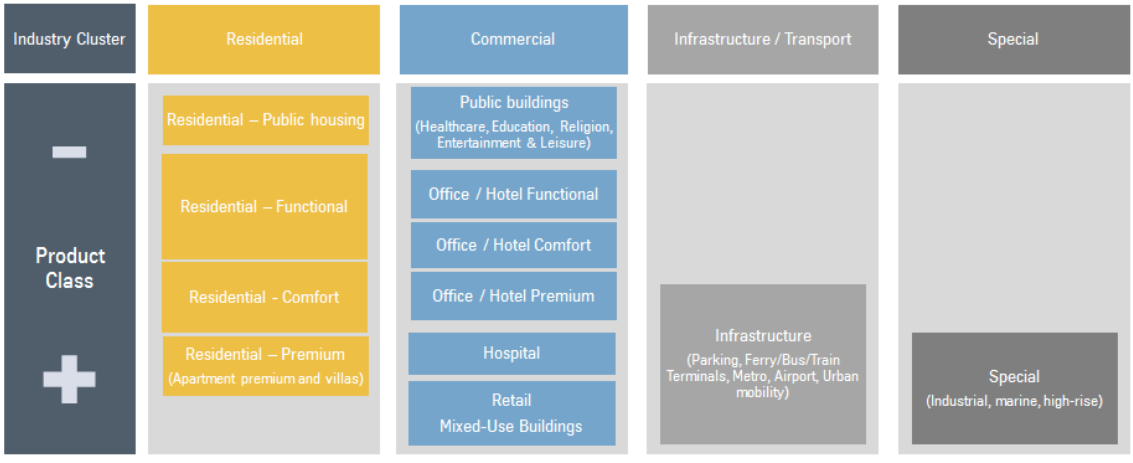

Figure 5. Step three. Application of secondary segments. Final model

Some of the considerations of the model will require a further analysis via CRM systems when it's applied during years by any major company, and this might cause future small adaptations in the model itself. Also, like any model, this is a simplified version of the market reality, and it provides a certain loss of accuracy that might be unacceptable in few special cases.
However, the model, and its segments, take into consideration several layers of market data, and they're accurate and strong enough (differentiable, substantial, stable, accessible and actionable) to take strategic decisions on product, sales and operations. And it can also help the companies in this sector to shape their organizations and processes into more customer-centred efficient businesses.

4 BUSINESS ADAPTATION: PRODUCT, SALES, OPERATIONS

The customer segmentation built from several market data input can lead several other areas of a company. This section will cover how a company can review and direct their strategy led by the customer segmentation methodology, which also lead to a more customer focused organization.

This section will cover a step by step, somehow cascading down from each step into the next one: from the customer segmentation, into the products alignment for these segments – both by customer needs and perceived value – followed by the product pricing strategy and sales organization structure, and finally with the operational setup to execute the sales. Each step will start, when needed, with a theory part on the matter that will set the grounds towards the application in the elevator sector.

The three selected focus areas – product, sales and operations – cover also the three core types of businesses models that corporations normally have, as it was discovered and documented by John Hagel III and Marc Singer for Harvard Business Review (Hagel & Singer 1999). These three types of business models have different priorities on their key resources, organizational culture and economic growth; so the way to approach their organization changes via customer segmentation are slightly different. By covering the three areas, the thesis tries to provide a better coverage of all possible scenarios of change.

The figure 6 shows a definition of the three core type of business models and the figure 7 shows additional details of the priorities for each core of the three business models.

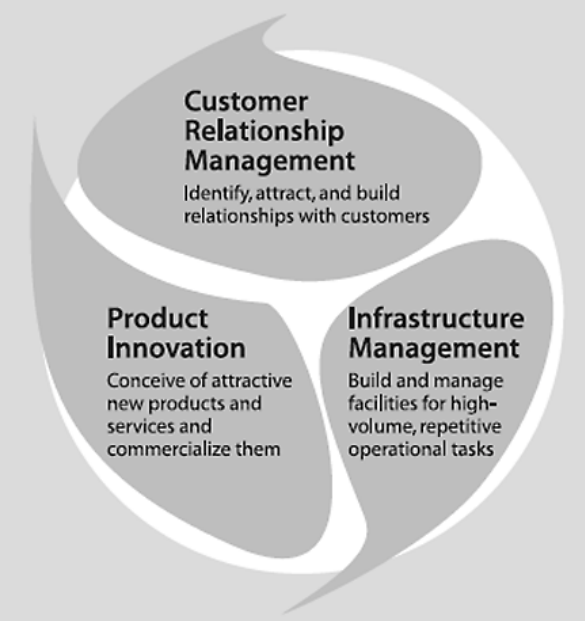

Figure 6. Rethinking the Traditional Organization (Hagel & Singer 1999)

Source: Hagel and Singer, 1999	Product Innovation	Customer Relationship Management	Infrastructure Management
Economics	Early market entry enables charging premium prices and acquiring large market share; speed is key.	High cost of customer acquisition makes it imperative to gain large wallet share; economies of scope are key	High fixed costs make large volumes essential to achieve low unit costs; economies of scale are key
Culture	Battle for talent; low barriers to entry; many small players thrive	Battle for scope; rapid consolidation; a few big players dominate	Battle for scale; rapid consolidation; a few big players dominate
Competition	Employee centered; coddling the creative stars	Highly service oriented; customer comes-first mentality	Cost focused; stresses standardization, predictability, and efficiency

Figure 7. Three core business types (Threenorwegians 2018)

4.1 **Product**

This section will cover the fundamentals of Product Management from different theoretical perspectives, and then it will apply them for a new product to develop for the lift sector. The product development, following a customer focused approach, will first analyse the most interesting segments, then analyse the specific needs to cover, and then develop a specific product for one of these segments.

4.1.1 Product management overview

A product, or service, is the "package of customer value" that the companies sell to their customers. Once that the customer segments are clear, a deeper analysis for each segment will provide the key customer values to tackle in the product or service, and this will set the starting point of a product development or product replacement.

Few methodologies regarding Product Management have been developed during the last decades. The first academic references about Product Management started to appear in papers and articles in the 1950s (Cao & Folan 2011, 3) under the commonly used term PLM – Product Lifecycle Management. The original need was to define the framework of requirements that generated a successful product that would be valid for a certain period, how to fix the product pricing, when a product would overtake the space from an existing product, and other similar questions.

A) Product Lifecycle Marketing or M-PLM

The original PLM ideas rapidly evolved during the last years of 1950s until the theory and method itself started to settle down, with several influential researchers who pushed these concepts in papers and business magazines. These questions found a model in the biological concept of the four phases of life: birth, growth, maturity and death. When it comes to products Levitt adapted them (Levitt 1965) in the following Gauss curve:

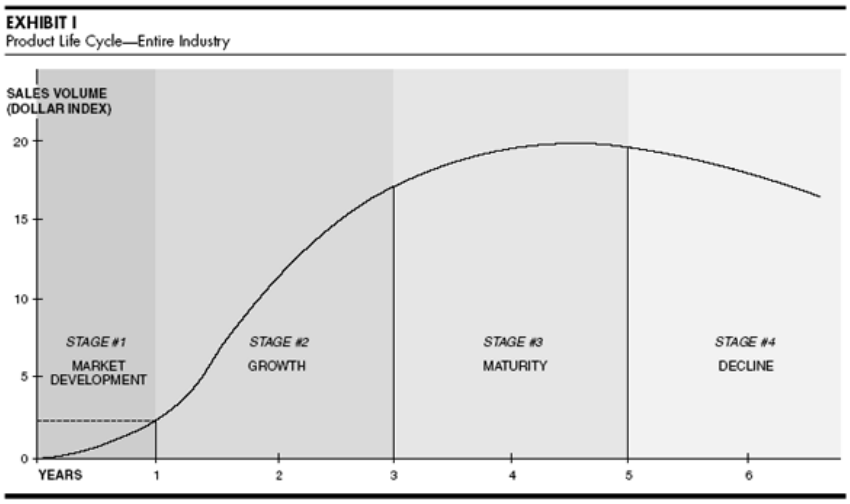

Figure 8. Exhibit I Product Life Cycle—Entire Industry (Levitt 1965)

This means that a product, in the context of total market volume, goes through these four stages:

- Market development: the product is introduced for the first time. The costs are high for the industry, as the product and operational processes are not yet optimized, and there is a high marketing cost to

create demand. There is usually none or little competition, which allows for higher initial prices to compensate these costs. The first customers are normally identified as "early adopters" and they buy this product/service for its use and the "philosophy" behind either the product or the company brand image. They can support greatly the demand increase by influencing others.

- Growth: if the actions are done correctly, quick processes optimization and demand will be built; it can be a very profitable phase if the risk of unstable growth is well managed. The demand keeps growing and the volume rise. Eventually the competition will start to grow which will have an impact on lower price levels, and this price drop will mark the product entry in its next market phase.
- Maturity: the market gets saturated with a steady demand, and the price level will eventually follow a classic supply-demand curve. There are few strategies to try to keep a higher profitability, via rebranding or niche segments. Another strategy to try to keep the price and profitability as high as possible would be via a strong brand image, which is normally created in the earlier phases of the product, or via similar related products with high quality perception.
- Decline: the demand starts to fall, due to technological obsolescence or change in consumer habits. This will eventually collapse the profitability of the product and will lead the company and sector to either close this product line or convert it into the new state of the art technology.

These stages theory models well the product-market development for a whole industry. When it is applied to specific company products, then it works best for 1) theoretical frameworks of new products for unexplored markets, 2) markets with limited or slow impact from technological developments (this was often the case in the 1960s). However, as the markets grew in complexity during the 1970s few criticisms appeared with the model (Cao & Folan 2011, 16–21). Among them:

- The theory doesn't take into consideration closed loops of re-using or re-cycling the product, which has steadily increased in importance.
- It doesn't apply very well for "Service Lifecycle Management", which had increased in popularity in the last years.
- There are not many quantitative models, either general or for specific sectors, made on this qualitative concept.

Despite of the critics and the limitations, this theory – and their methodologies – has been greatly accepted since it was first elaborated until our days; and it's still commonly used as a marketing approach for product management. In order to differentiate it from other PLM methods, this marketing PLM method is normally known as "PLM Marketing", or "M-PLM".

B) Product Lifecycle Engineering or E-PLM

There were several other theories, or combination of product developments with other business theories, however most of them had a "small lifespan" in the 60s and 70s before they slowly fade away. There was only another approach on Product Management that took traction and has been evolving and getting stronger until our days. This is the "Engineering Product Lifecycle", or "E-PLM".

This Product Management approach started in the early 60s, in two main areas of the Product Engineering process: Product Lifecycle Cost (LCC) and Product Lifecycle Environmental Assessment (LCA). The lifecycle cost was first required for the US army industry, due to their high operational and maintenance cost (on top of the material cost). The lifecycle assessment regarding environment and resources – from cradle to grave – emerges later on, during the early 70s, aligned with the cultural and business trends of the era especially in Europe (Cao & Folan 2011, 22–34).

Later, with the implementation of IT solutions in the industry, these two concepts were integrated into the existing tools of Computer Aided Design/Manufacturing/Others (also known today as CAD/CAM/CAX). Additional to these tools, other tools appeared to supervise the whole process called Product Data Management (PDM). By the 2000s until our days, Product Management IT tools have been developed greatly, and today it is considered one of the four IT pillars of any manufacturing company (Evans 2001), these are: CRM (Customer), SCM (Suppliers), ERP (Internal) and PLM (Product). Many times in the business environment the companies refer to "PLM" to all these combined Product IT tools, instead of the method behind it that is being discussed in this paper.

At the end, these Product Management tools implement the total E-PLM methodology that normally includes the following product areas:

- Product specifications and design. It includes as the most important activities: market requirement collection, research, product design, product simulation or prototype, validation of hypothesis when needed and financial business case.
- Manufacturing. It includes: manufacturing, build, assemble, quality control, logistics and production planning.
- Use and Service. It includes: sell, deliver, install if needed, deliver of documentation or training, warranty, technical support and maintenance plan.
- Disposal. It includes: repair, reuse, recycle, waste management and cross-selling.

These four steps, which are explained in a linear way for clarity, are interconnected back and forward by different actions. They cover both the product information management and the product materials. One of

the most complete versions of the scope of E-PLM is the following graph that connects all these interconnected areas into three moments of life of the product, Beginning/Middle/End of Life (BOL/MOL/EOL), which also links somehow with the PLM-M biological analogy covered previously:

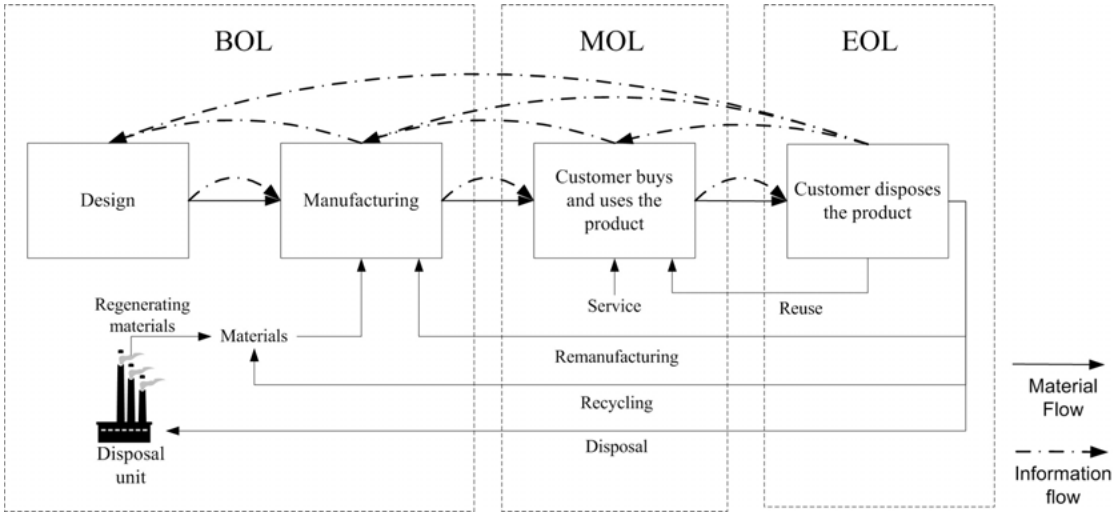

Figure 9. Closed loop E-PLC perspective (adapted from Kiritsis [2003])

These two theories encompass the scope of uses of PLM on the academic and the business world. The following point will cover how these methods are applied nowadays under the job profile of Product Manager.

C) Product Manager role and responsibilities in an organization

There are several global efforts to centralize and standardize the job content and responsibilities of a Product Manager, in that way the strongest association is the Product Development and Management Association (PDMA 2020); however, the job profile structure is still under development and it's expected to continue its standardization until a global common understanding and settlement is reached. In the same way as other job profiles has made in the last decades such as "Project Manager" via similar organizations and certificates.

Following the two main theories on Product Lifecycle Management, there are two main activities that need to be covered by Product Management:

- Product development, or inbound product manager. Focusing more on the BOL and EOL of the product (see figure 9). Some of their tasks are collection of specifications, design, testing, technological roadmaps, manufacturing, product lifecycle analysis, etc.
- Product marketing, or outbound product manager. Focusing on most of the MOL of the product. This would include market analysis, pricing strategy, external communication, competitors' analysis, sales training, etc.

While these two groups of tasks may seem antagonist, they can be covered by the same person with the right skills. Actually, there are other Product Management tasks that could be included in any of those two groups, but they might actually benefit from a "unique head" in product management. These tasks are:

- Development priorities. Based on market needs, product position in the market, synergies of features, development efforts, resource planning, product cost, etc.
- Product and customer ambassador inside the organization. The customer focused change management, covered in this thesis, will require also internal leaders and influencers among several other tasks (the details will be covered later on in section 5.1) who can frame correctly the company change vision and who inspire others. A common head of product will provide a strong representative of that change force.

Lastly, regarding structure, Product Manager is normally a strategic position that works in a matrix structure with other departments or organizations. This means that the professional normally doesn't lead a direct team, but works and leads the product and customer's interest via his/her influence towards the organization. This indirect leadership requires a setup of specific skills (Austin 2017) to cover the structural influence (via tools, company rules and management support), social influence (seniority, negotiation and political skills) and personal determination (customer focus, vision and strategic capabilities) required by this position in the organization.
It could be that the role covers a complete product in a small organization, or a specific sub-product in a big corporation. In the second case, it could be that a Product Manager promotes into a Head of Product Manager, or Director of Product who oversees and influences the efforts of all the Product managers in that organization.

4.1.2 Elevator sector – Product customer value proposition

After the basics on product management theories and responsibilities, this section will cover a practical case on product management and product development applied to the elevator industry. The first step, based on a targeted customer focused approach, will be to work on market analysis to define the products portfolio, priorities and needs. Specifically this step will contain the following four steps towards product development:
a) Product portfolio review. This is an analysis on the current products, to identify how they fit and align with the customer segment model.
b) Product segment prioritization. This is an analysis of the most interesting markets gaps, to prioritize product developments.
c) Customer value proposition. This is an analysis of the product value proposition for the selected customer segment. The aim is to identify the most important product values for the customer needs of that segment.

d) Quantification of targeted segment. It takes the total customer segment market values, and defines achievable targets for the new product under definition.

The business case will be now developed for each of these four steps.

A) Product portfolio review

For the product portfolio review there are three inputs to analyse.
The first input is the market segmentation model previously defined:

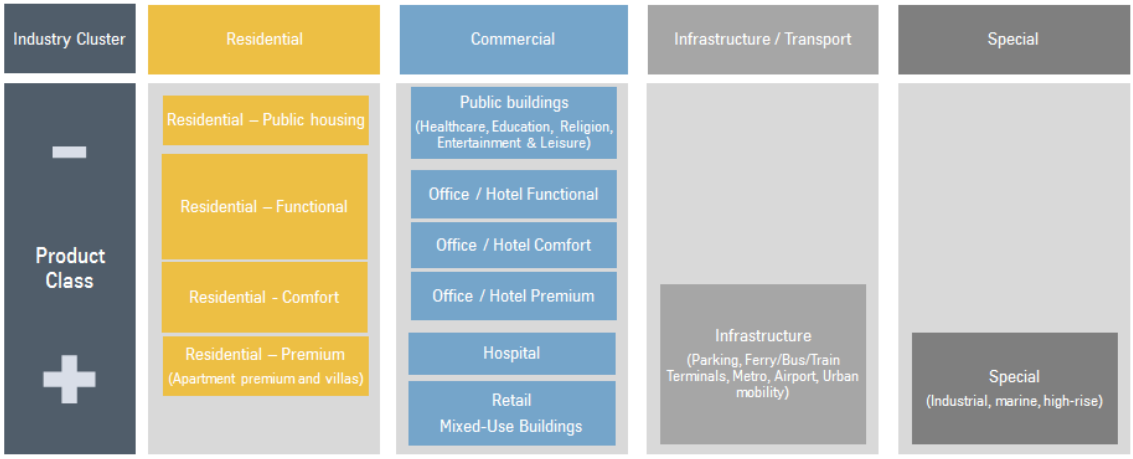

Figure 10. Review of previously defined customer segmentation for lift business

The second input is the current product portfolio. In this business case, the company operates three different products:

- "*Product A*", covers the low end of residential and commercial market.
- "*Product B*" covers the high end of residential and commercial market, and also the infrastructure market, and a final very flexible product
- "*Product C*" covers the special market.

This configuration is not aligned with the defined customer segmentation, and that means that possibly the product portfolio is not optimized and this may cause any of these issues:

- Product feature redundancies: there could be two products that have developed features to cover the same segment need instead of only a development on one product.
- Market gaps: since the products are not specialized in a specific segment, they will lack features for that segment.
- Price/quality misalignment: since the product is used for several segments, it might not match perfectly either on price or quality for the customer segment needs.

The third input is the company market presence and strategic goals. The sample company has a stronger presence on the mid-markets of commercial and infrastructure. This is due to company image, long term

contacts with certain strategic partners, and a strong product and engineering internal culture that has worked well with the most important market requirements of these two segments. However, that same culture and focus has led to a weaker position in the standard residential segment and the special segment.

From these three inputs, the company has decided that there are two possible product development strategies to follow:

- Develop a new product "*Product A+*" – in replacement of "P*roduct A*" – that will fully fit the residential segment. This would indirectly affect "*Product B*", but in a second step as its segments are already strong.
- Develop a new product "*Product C+*" that will replace "*Product C*" for the special segment. So the company has a better penetration and profitability in this key segment.

B) Market analysis for segment prioritization

For the two pre-selected segments, this step will review their market potential in detail. First it is required to crunch some data from market researches. In this case three different sources have been used to generate a view of these segments (Prabhat 2016) (Fortune Business Insight 2020) (Pulidindi & Chakraborty 2019) together with internal company data. This analysis will also use the internal segmentation type "Geographical base" that was defined previously in section 3.2.1.

- Global segmentation in 2019 by type of business:
    - New equipment: 35,4 B€
    - Modernization: 9,6 B€
    - Maintenance: 29,8 B€

The product launches are related to the installation business line, so the relevant value for market potential is "New equipment". However, "Maintenance" will be taken later into consideration for product specifications, as that business line has a high revenue, and it has (according to the business model explained in section 3.1) a higher margin.

Also, the company of this business case has a special interest to improve the market share in the EMEA market (Europe-Middle East-Africa). While Europe is not the market with the highest growth – on the contrary, it's together with Japan the regions of slower growth – it has a strategic interest for the company due to company image and synergies with other related businesses. And the other two regions of EMEA provide an immediate (Middle East) and future (Africa) big volume market both on residential and special segments that add up to the European market.

- Residential segment:
    - Yearly global market size: 1,08 Millions
    - Yearly global market size: 20,58 B€
    - Level of standardization in the segment: very high
    - Geographical segments size:
        - Europe, Africa and Middle East: 5,11 B€
        - America: 5,84 B€
        - Asia and Pacific: 9,62 B€
- Special segment:
    - Yearly global market size: 22.000
    - Yearly global market size: 3,3 B€
    - Level of standardization in the segment: very low
    - Geographical segments size:
        - Europe, Africa and Middle East: 0,82 B€
        - America: 0,94 B€
        - Asia and Pacific: 1,54 B€

Based on the information collected for EMEA and the world, the sample company will focus on the product development for the residential market based on a bigger market volume size (5,11B€ vs. 0,82 B€), a higher number of market units (which tend to generate a competitive advance by volume for big corporations against local competitors) and higher level of standardization (high complexity tends to work against big corporations, when it's compared with local players).

C) Customer value proposition – *Product A+*

The targeted segment for the product development has been selected. Before moving forward it's important to first understand the key areas of value for the customers. The value proposition canvas (Osterwalder, Pigneur, Bernarda, Smith & Papadakos 2014, 8–39) is a very useful tool for such analysis, as it represents the customer needs, pains and gains, together with the product features to solve/avoid them. As there are two main types of customers in the lift industry, then it requires creating two canvases, users are also added together with building owners. The output of these canvases will be then merged for the product specifications in the next sections.

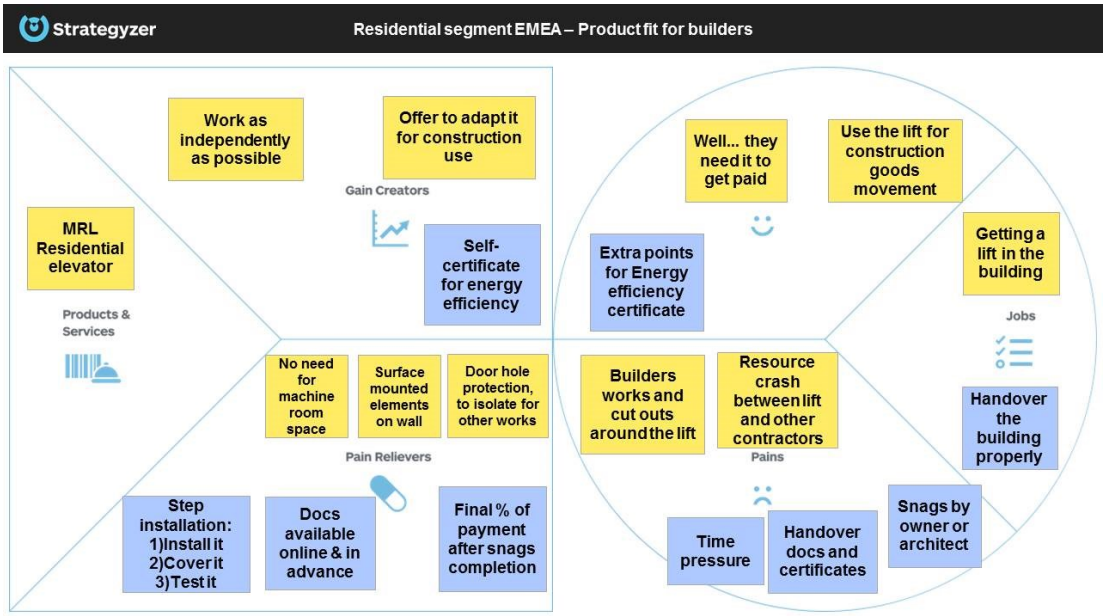

Figure 11. Residential lift – Product fit for builders (powered by Strategyzer)

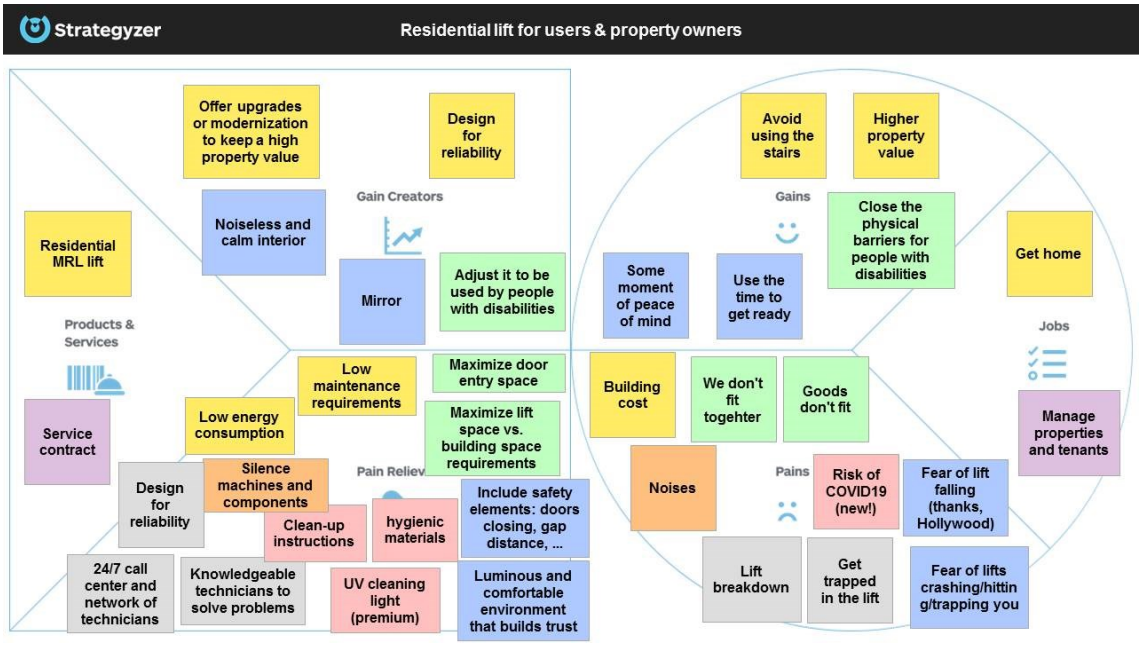

Figure 12. Residential lift – Product fit for users and owners

Normally it would require two different canvases for users and for property owners. However, their types of pains & gains are quite similar as the users' pains are translated into property managers' complains; and the users' perceived value form the lift is translated to the property owners into real higher property value. With that minor perspective adjustment, then the graph is valid for both types of "customers" at once.

Now the selection of product to develop is completed, based on market priorities and company strategy, and the key findings regarding product specifications have been defined, which will be used later on in the product development section.

D) Quantitative analysis of selected market segment – *Product A+*

The product gains, and pain reliefs, covered in the previous section – collected via customer interviews and the experience of the professionals in the sector – are the qualitative needs of the product. In parallel to it, there are other quantitative needs collected from market analysis –made from the specialized agencies used earlier, open government information and company's data of the key players of the sector. This quantitative data needs to be filtered for the specific residential market in the EMEA area.

The market analysis for the residential segment provides the Total Available Market (TAM) – which is 5,11B€, as it was mentioned already in the point A of this section. The difference between the company product features and the segment product needs will mainly define the Serviceable Available Market (SAM), which could grow later on if the product grows in specifications. And finally from the SAM, it is defined the company's Serviceable Objective Market (SOM) or target market; based on organization size, expected sales hit-rate, and sales strategy per region. This is the representation of these boundaries in a figure:

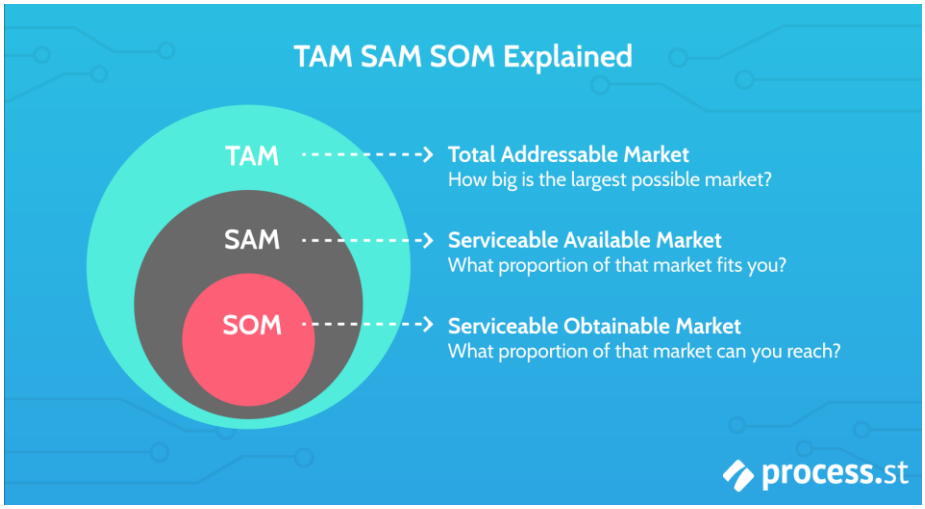

Figure 13. TAM SAM SOM explained (Henshall 2019)

Based on the market data, it has been identified that the following product specifications cover approximately 80% of the TAM in EMEA:

- Common number of lift stops: from 2 to 10 stops, average is 5 stops, and statistical mode is 4 stops.
- Common cabin weight: 450 / 630 / 1000Kg
- Market doors location: 75% single entrance; 22% double entrance.
- Target selling price: 18K€ / 21K€ / 25K€ for basic/mid/premium lift.
- Target purchase to handover time: 12 weeks for all models.

Also, with the competition in the market and the expected penetration of the company in the different regions of EMEA, the company has concluded and defined the realistic target to obtain an overall 12% of the Residential Served market in EMEA. That comes from a higher penetration in Europe (18%), middle representation in Middle East (9,5%), and a lower presence in Africa (5%). This provides the final values for the residential segment in EMEA region of:
TAM 5,11B€ – SAM 4,1B€ – SOM 491M€.

4.1.3 Elevator sector – Product development for a selected segment

To develop the new product for the lift residential market, called "*Product A+*", the methodology to follow will be the steps defined in the PLM-E of the section 4.1.1, these are:

a) Product specifications and design
b) Manufacturing
c) Use and Service
d) Disposal

Each of these steps will have their own requirements, challenges and topics to try to optimize (due to cost, time, convenience, etc.). It's important to cover as much as possible of these details from an early phase of the project. This has two main benefits for the product development:

- If these requirements upfront aren't well planned upfront, then they will be faced in the next stage of the product development, and the project will have to go backwards to redo the previous phases with the new requirements.
  Example: an interior has been defined, tested with the customers with very good reception. However, when the decoration arrives to the production centre they find that it's impossible to manufacture it in a mass-scale. Other potential suppliers have the same issues, so the design needs to be changed, and the whole process need to move back to the design and prototype phase.
- When these requirements and their priorities are planned upfront in cross-functional teams, then the product decisions will take into consideration the "overall optimal solution", instead of the "suboptimal solution of a specific step".
  Example: a manufacturing centre wants to deliver certain parts of the lift disassembled, so the production centre saves some time and cost. However, the installation team will be required to assemble these components on site, in a less controlled environment, with fewer resources and tools, and losing any possible "economy of scale" due to production volume. The manufacturing centre saves some cost, but the overall final cost of the product is higher than it could be.

The following full collection of specifications and simulations at the beginning of the product development process will require the expertise

of professionals from all the different areas, and it will require a considerable initial effort which might seem far away from the daily routines that these professionals have in their daily work. However, this initial investment will pay off later on, when the product hits the development and manufacturing phase. The following points will cover a simplified example of what the input from these professionals might be, but it will cover all the key points to extrapolate it to any other industry or business case.

Before moving forward with the explained business case, there is one important exception to this product development methodology that applies normally to start-ups. If some parts of the business model are not confirmed – due to lack of sector knowledge by the managers, or due to the fact that the product tackles a new unexplored sector – then it doesn't make sense to do all this initial product development effort, as the possibilities to fail in the initial assumptions are very high. For those cases, it's highly recommended to follow the methodology of Minimum Viable Product, coined initially by Frank Robinson in 2001 (SyncDev 2020) and popularized later on in the book "The Lean Startup" (Ries 2011, 77–112). Basically, a start-up will optimize its cost if it builds the most basic possible product to test their ideas with the customers, and follow the customer development methodology (Blank & Dorf 2012, 19–32) to validate or pivot from their initial assumptions, both with the customer value proposition and with the business model in itself. This way the start-up, with limited experience, time and cash, has the possibility to try different approaches on product-customer fit and business model, which will increase their success ratio in this new sector/business idea to explore.

Having said that, the lift industry is an old business that has been running for over 100 years, and the business model is very well stablished (except few details, mainly due to digitalisation, that will be covered later in this paper) and the sector customer value proposition is very well known. For such case, the correct product development is the one described in the following simplified business case.

A) Product specifications and design.

Once that the qualitative and quantitative product specifications are defined, they need to be sorted. This is normally done by the team works in the organization. In this business case the product specifications are distributed as followed, starting with the R&D and engineering team:

- Shaft components & traction: Machine Room Less, low noise, strong and reliable components, good ratio cabin size vs. shaft size, up to 10 stops.
- User's interface, Cabin design & structure: Surface mounted pushbuttons and display, Option to convert to construction use,

luminous and comfortable interior, 3 cabin models to maximize cabin space without too much complexity, two types of door access.

- Electric & Software: energy efficiency certificate, low consumption, homey interior, hygienic materials, big mirror, UV cleaning light option, up to 10 stops, easy to test and commission.
- Cross-department: follow EN81-70 norm (2018) – lift norm related for people with disabilities, follow all the EN81-20/50 standards (2017) - lift general safety regulations, and online complete updated documentation for all steps.

All of these developments will require different levels of resources, efforts, and will cover different levels of market size (the SAM explained in the previous version). The common practice here is to define a program of product releases that will prioritize the SAM on the first releases.

There are different methodologies for product development management, being waterfall and agile nowadays the two most popular. Waterfall consists of a structured product roadmap defined, documented and agreed from the very beginning with a linear development; while Agile consist of a prototype followed by a repetitive cycle of sprint-developments and customer verifications that are flexible to provide small improvements of the product while it adapts well for changes by the customer. The following table explain the different between them.

	Strengths	Weaknesses
Waterfall	• Requirements are specified in detail and in writing • Scope changes can be easily analyzed • Rigorous detailed design work is conducted for complex systems • Ability to coordinate and manage large distributed teams • Predictable budgets, against delivery • Limited amount of time required from the business at key strategic points. • Historically more well known and understood culturally	• Reduced interaction with the business stakeholders, which can lead to business expectations not being met and re-work • Business members do not get to see the development result until User Acceptance Testing (UAT), which can lead to re-work • Lack of flexibility does not easily enable changes of business circumstances, and changes are more difficult to implement • Loss of intangible knowledge between phases
Agile	• Rapid feedback from users increases the usability and quality of the application • An ability to easily roll-out functionality in stages, which meets business requirements • Increased ownership by the business, as the product owners More easy to stop the project and use what has been completed as the process delivers frequent releases • Regularly meets specific measurable objectives	• Difficulty in coordinating large projects • Lack of documentation, which is difficult for large complex and legacy interfaced systems and that can make support and sign off difficult • On-going end date with lack of clarity as to what will be delivered when the project finishes and for the budget will be • Re-coding, because the code is produced rapidly and may not be of quality • Large impact on both business and technical resources • Ever-evolving change, which can be both a strength and a weakness

Figure 14. Strengths and Weaknesses of the Waterfall and Agile Product Approaches (Goodman & Henry 2010)

Waterfall is the best approach for the lift sector due to the following reasons: it's an infrastructure project, with a well-known and stablished technology, with little to no interaction during the development with the final customer, and with the requirements unlikely to change.

B) Manufacturing

Additionally to the inputs from customers on the product, there will be inputs from the manufacturing process needs. In this business case:

- Manufacturing: production drawings, product tolerances.
- Quality control: quality test tools, product tolerances.
- Logistics: maximum product dimensions and weights.
- Production planning: merge of product features.

It is recommended that most of these needs will be solved directly by the manufacturing team, in collaboration and support with other departments only when needed. That way the ownership for each workgroup increases, the expertise and know-how isn't lost, and this initial design and development investment will directly benefit them later on. At the same time, they will require to collaborate in other tasks from the customer or other colleagues, such as: production samples or customer's visits to production centre (included in the next point).

C) Use and Service

Additionally, there are also needs from the teams that interact with the customer:

- Sales: decoration samples, customer's factory visits, commercial mock-ups.
- Installation: standardized installation tools, reasonable weight of components, easy installation in different environments.
- Service: maintenance-free components, service tools, training mock-ups, routines for preventive maintenance.
- Technical support & call centre: diagnosis tools on site, remote control tools, telecommunication system to connect to call centre, software to supervise the lifts under maintenance.

Some of these tasks are the core actions of these departments, and they are not necessarily related with specific new product design and launch. However, there are normally opportunities for further optimization for a specific product if it's detected in an early design phase. And these improvements might be able to be retro-fitted into other products to keep improving the department's efficiency.

D) Disposal

Some of the most important needs for this step are:

- Repair: compatibility of spare parts, expected lifetime of key components.
- Cross-selling and Modernization: align with industry standards, core product prepared for future upgrades.
- Recycle and waste management: minimize hazardous products, avoid multi-material components, use of recycled components.

Additional to the four steps described and covered, there are two additional cases to cover in this business cases.

E) Common reviews for all parties from the previous four steps

Lastly, some of the product needs will require a cross-functional work group with all the parties involved across the value chain:

- Selling target prices.
- Lead time from purchase to customer handover.
- Product Lifecycle total cost optimization.

This is possibly the most critical and complex workgroup, due to different perspectives and priorities among the parties. But again these initial discussions, compromises, efforts and investment will greatly benefit all the parties when the product is released into the market, and it will possibly provide a very high competitive advantage against competitors.

F) Overall product prioritization and supervision

It's important to highlight again that all of the requirements defined in the previous points need to be defined and discussed in specific workgroups with signed agreements before the product starts to be developed. Otherwise the product roadmap will require painful modifications, as the waterfall methodology doesn't fit well with project modifications.

After all the requirements are completed, then all these different, complex, and closely inter-related tasks require leadership, determination and an active supervision, and that's the main role of a PLM or Product Manager. In order to manage the development progress and priorities of a new product in a waterfall methodology the following documents are required – as explained by the company Aha! (Aha! 2020), including the signature for approval from all the departments that will be involved in the future value chain of the product:

- A Market Required Document (MRD). It will include all the initial requirements made by market analysis and each department; these are the ones that have been described previously in this section of the business case.

- A Product Required Document (PRD). It is the translation of the signed market requirements into specific product or process features (it's omitted in this business case to simplify the complexity). It would also bring the development priorities based on the criteria explained earlier in this paper. It will require a second review and signed approval by all the parties.
- A product roadmap that will include the developments included in each of the product releases, together with the resources and time for each inter-related activity. This is normally made and followed in a master Gantt chart which will contain all the resources and activities.

4.2 Considerations on centralization vs. decentralization

The first part of this section 4 has covered in detail how to define and develop a new product based on the results of well-defined customer segmentation. The rest of the section 4 will show the organizational changes that are also led by proper customer segmentation.

Before getting into details for each department, this section will cover the general strategy regarding centralization or decentralization that affects all the departments and the overall company organization. Centralization, and decentralization, has been going on since the beginning of business, and it's actually a quite common approach to look at for new management or strategic consultancy companies when they are involved in an existing business. While it can provide an improvement on certain areas – reliability, efficiency, etc. – (Vantrappen & Wirtz 2017) it's important to understand the big momentum of such change for a big organization, which will take months to years to implement, and even longer to obtain all the desired results.

From a general perspective, these are the pros and cons of a centralized/decentralized organization:

	CENTRALIZATION	DECENTRALIZATION
Financial/ Customer	✓ Generates economies of scale	Can duplicate efforts or resources
	Fosters one-size-fits-all products and services	✓ Promotes experimentation and innovation
	Further from the customer; less responsive	✓ Closer to the customer; more responsive
Organization	✓ Aids in adoption of best practices	Slower to adopt best practices
	✓ Allows for common standards and metrics	Difficulty comparing performance across units
	Slower decision making	✓ More autonomy; speeds local decisions
	✓ Increased collaboration between departments	Risks organizational silos
	✓ Easier integration with external stakeholders	Harder to integrate other functions or third parties
Talent	✓ Flexible talent deployment	Difficulty deploying talent across disparate units
	Fewer career opportunities for employees	✓ Greater career options
	Reduced empowerment	✓ Increased empowerment

Source: AlixPartners

Figure 15. Pros and cons of centralized versus decentralized organizational models (Alix partners 2016)

These general indications are a good starting point for the centralization strategy, but there are two additional considerations that need to be included in such important long term decision:

- The type of business that is being analysed, as it will always bring additional restrictions or added value for such decision. For example: it's not the same to produce cars – which are fully assembled in a manufacturing centre – than producing elevators, which come in boxes to site and need to be assembled there. Also, the complexity and restrictions of big corporations, like the one covered in this business case, brings other important considerations for such decision.
- The company size, as different layers of management can bring extra complexity, or possible options of centralization vs. decentralization.

From these inputs – and especially when it's applied to big corporations like the one in this business case – then it's more appropriated to talk about "level of centralization". The following graph provides a reasonable variety of centralization levels:

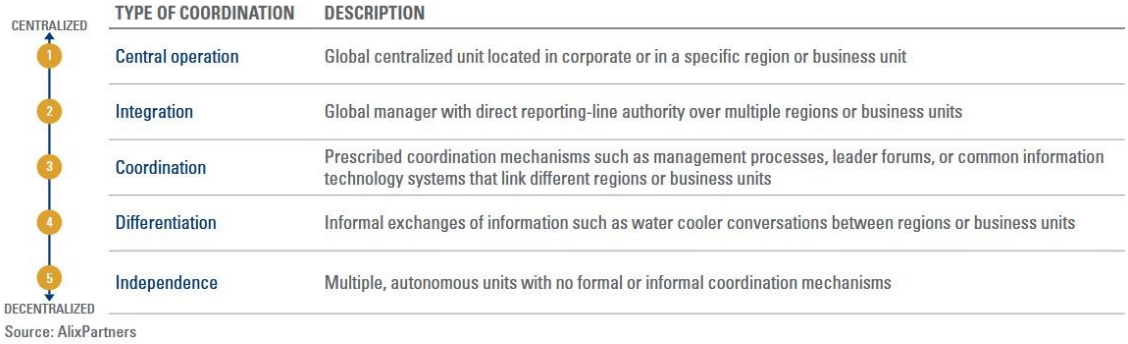

Figure 16. Hybrid organizational model (Alix partners 2016)

The elevator business is mainly about product installation and maintenance. Regarding operations, most of the activities take place "directly on site", instead of in offices or production centres, and there are little (or none) possibilities of covering these activities remotely. Regarding the sales, it's a B2B infrastructure business with a low to mid-price per unit, where the customers (builders and property owners) are located locally and they tend to be small to mid-size companies (not too many global customers), and some areas of the business require physical presence on site before a quotation can be sent. All these circumstances make the business of elevator, on a functional level of the front line, very difficult to bring to the highest levels of centralization.

With all the exposed information, big companies in the lift sector would normally shift between centralizations levels 3 and 4. In this business case, for the following analysis, it will be considered that the company is at level 4 of centralization, and it's strategically trying to shift towards a level 3 via some operational central functions working in a matrix

organization (indirect report) to coordinate and align certain processes and reporting systems. The aim of such a change is to control better the metrics, on an operational and financial level, and get additional benefits of economy of scale, while trying to keep still a good customer focus and responsiveness – key advantages for this business sector and this company – that higher level of centralization would put at risk.

4.3 **Sales setup**

The role of sales is central in any customer-centred organization. It's the main face towards the customer, and it's the department that will lead the rhythm of the organization (if the operational and financial situation is stable enough). However, in a customer focused company, several other departments will also be in contact with the customer as a way to ensure maximum orientation and customer added value.

The main activity of sales in a corporation is to co-lead (together with marketing) and capitalize most of the steps of the customer journey that is described on the sales funnel invented in 1898 by the advertiser E. St. Elmo Lewis (Strong 1925, 9,349) and with several small variants since then, the following one provides specific information for B2B:

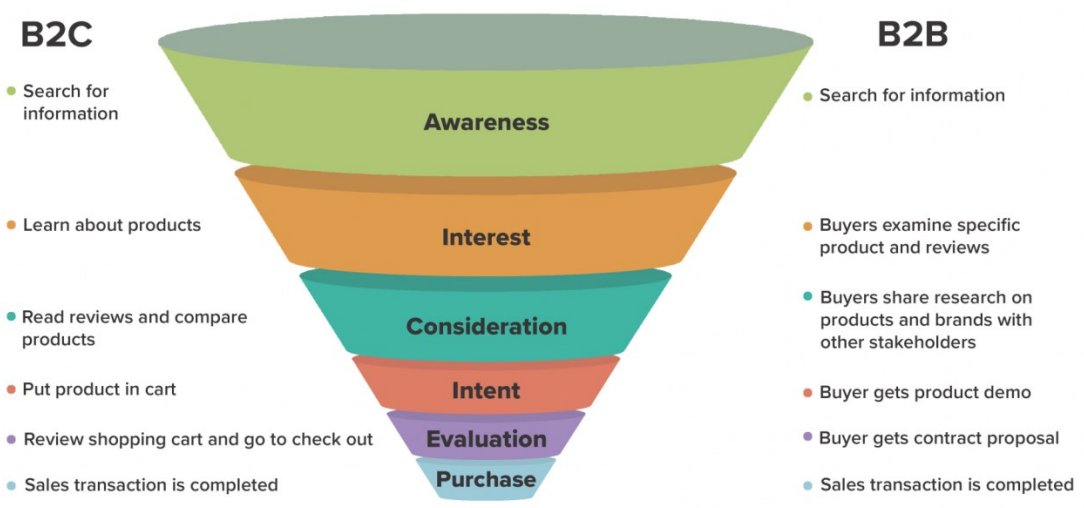

Figure 17. The marketing funnel B2C vs B2B (Lee White, n.d.)

These steps are normally monitored by Software tools called Customer Retention Management (CRM) which will provide data on market penetration, success rate for each step of the journey, key customers, and the overall revenue per customer via the Customer Lifecycle Management (CLM). The objective of the sales team (and the marketing team for the first steps) is to maximize both: the % number of customer that will transition from one step to the next one, and the number of customers that gets in at the beginning of the funnel (marketing campaigns, direct contact, re-selling). And then, of course, the objective of maximization of the selling margins per customer as it will be covered next.

4.3.1 Product pricing strategy

Product pricing is the best way to increase the company profit; this has been known and proven, both in theory and practice, for decades now:

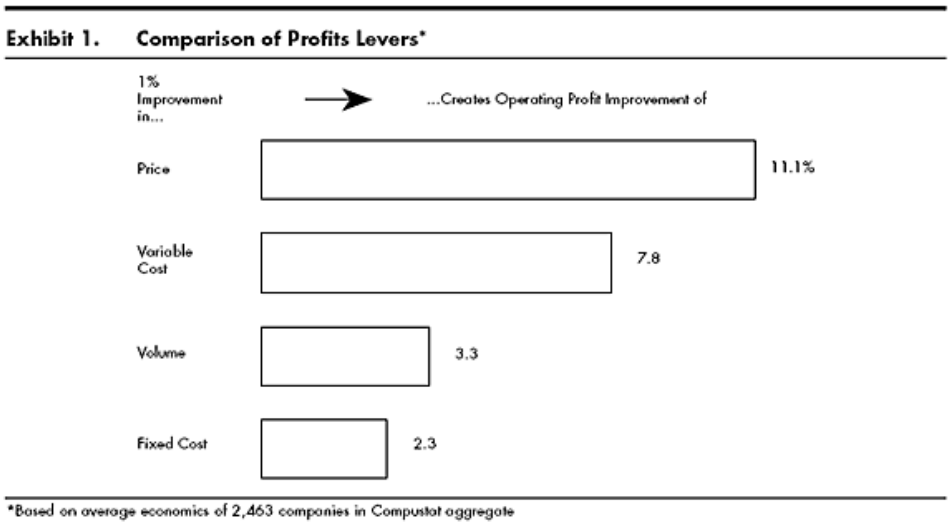

Figure 18. Comparison of Profits Levers, based on average economics of 2,463 companies in Compustat aggregate (Marn & Rosiello 1992)

However, it's not easy to do it while keeping the sales volumes and the customer satisfaction levels, which will guarantee the company long term success. For a good stable implementation it's required to work both on the company pricing strategy and the price focused culture in the sales team.

There are several pricing strategies, and tons of details in each of them, as the pricing is more an art than a science. However, there are four basic approaches that will define most of that strategy. It's important to know them and find the one that fits best for each business and specific customer segments. The strategies are the following (Wells 2020):

- Cost plus pricing: the total cost of the product with a fix % margin
  - Pros: simple calculation, well known, easy to model financially.
  - Cons: unrealistic as most product costs changes with volume, it doesn't reach any optimal pricing, it doesn't adapt to dynamic markets.
  - Best for: B2B stablished companies in undisrupted sectors.

- Competitive based pricing: analyse the market prices of competitors for similar products to define the price level.
  - Pros: still simple, it gives feedback on target prices.
  - Cons: it doesn't take into consideration the cost structure, the customer segment priorities and synergies, or the product not-economic advantages versus the competitors.
  - Best for: Markets with a well stablished monopoly.

- Value-based pricing: it sets the price based on the value of the product for the customer.
    - Pros: it generates good price margins if it's done properly, it can work both for specific products and for a general pricing models.
    - Cons: it requires several data inputs difficult to obtain to create a good value-base model; such as sales, strategy, mathematics, economics and psychology. If a professional wants to apply it just for a product, not a general model, then he/she needs to have several different skills and complete customer knowledge.
    - Best for: sectors where the product value for the customer is clearly identifiable (example: a B2B product that decreases the customer's variable cost per product in 1€), companies who have a strong value-based customer segmentation.

- Dynamic pricing: it uses statistical models, based on big data, to adjust the prices to the optimal one, either for a specific group (Example: geo-located prices) or for a specific date or time (Example: flight tickets).
    - Pros: it allows building models out of it that provides an optimal pricing result.
    - Cons: it requires supervision, it requires adjustment when the market dynamics changes, it requires a big initial investment.
    - Best for: B2C retail industry, with open market pricing data to model the market, and good IT capacities to implement big data and machine learning.

From these four different pricing approaches one thing is clear: it is important for a company to know its business correlations, its customer segments and its market dynamics to make it right. The implementation of these customer focused pricing strategies is not a single-man effort, but a strategic decision that requires an investment and a cultural change for the organization. Specifically, there are some aspects that need to be taken care of (Mohamed 2012):

- Build confidence and trust on the sales front line.
- Use/adjust compensation schemes to focus on profit.
- Increase profit by offering options. Either different product prices, or either extra options over the basic product.
- Get the involvement of the management. Both for strategically important sales and for change management.

4.3.2 Elevator sector – Pricing and Sales structure

This section of the business case will cover first the pricing, and then the organization to deploy it. The brand perception in elevator is not global, as it depends mainly on the customers local experiences (builders, for

new residential products) in previous cases and projects. As it was mentioned earlier, it's mainly an on-site-located business with very little centralized or digital activity. Additionally, in the residential market the customer (builders) are not going to be the ones using later on the product (users). For all these reasons, the product designed for the residential market is mainly a commodity, driven by the price; however, there are still few details where a certain level of pricing strategy can be used.

With the given information, regarding the four different price strategies that were covered in the previous section:

- Cost-based pricing: this will be the initial point of the business case company.
- Competitive-based pricing: this will be the new reference for the residential lift basic price.
- Value-based pricing: this will be the key sales point, both for argumentation of added values to the customer, and for how to do the pricing model on these added values for the product options.
- Dynamic pricing: not possible, as it's B2B with not enough volume.

The pricing strategy for the residential market will combine two areas:

- Competitive-based pricing against competitors on the product basic price that will bring success during the phases "Awareness", "interest" & "Consideration" of the sales funnel (see figure 17).
- Value-based pricing and proposition for the product options that will drive the phases of "Intent", "Evaluation" and "Purchase" of the sales funnel. This value-based pricing for the lift options will need to take into consideration one or several of these areas, for each product option:
    - The savings for the customer (builder). Example: elevator for construction use.
    - The savings for the final user. Example: energy cost savings for an electronic system with energy recovery.
    - Create specific value-based options just for a specific customer-need subgroup inside the residential segment. Example: external glass shaft option, for those builders who lack space for a lift inside the building plan.

All this requires an intense initial analysis with several inputs and relation between data, and data maintenance as the market and type of customers evolves. If the organization is big enough, it should have a "pricing manager" that maximizes this important area for the profit of the product-customer segment fit. If the organization is not big enough, this task will be taken either by the Head of Sales, the Product Manager or the marketing department.

4.3.3 Elevator sector – Sales structure

With the products and their pricing aligned with the customer segmentation, it's time to review the sales organization that will lead individually the customer purchasing journey for this installation business line.

First of all, it needs to be decided, now for each local branch or country, the level of "sales centralization" that works best, either Sales-centred or Segment-centred structure. The main differences are:

- Sales-centred structure: it's a sales organization with a common head of sales, and the sales team working together in the same space or department. This configuration focuses and improves the financial control on sales results, the accountability of each area, the alignment of the sales process and tools and the resource efficiency for small organizations.
- Customer-centred structure: it's an organization where the sales representative sits in clusters organized by customer segment. The sales representative will "sit together" with operations, technical and other support functions to make an independent team that supply end-to-end solutions to their customers. These teams will report, and report financially, as a cluster. This configuration will optimize collaboration and results for complex solutions, alignment for customer's needs and collaboration and handovers between the steps of the customer journey.

The solution is not necessarily the same for all the company, but the company can define general policies per segment with flexibility on final implementation for each region. Let's remember the main segments of the lift sector from section 3.2.4:

- Residential segment. Covered with the newly release "*Product A+*".
- Commercial segment. It's covered with "*Product B*".
- Infrastructure segment. It shares the "*Product B*" with small adaptations.
- Special segment. It uses the "*Product C*".

Residential and commercial segments have lower complexity. They are more volume-driven segments (especially residential) with lower prices and lower absolute margin per unit. Their lower prices and margins per unit require a stronger financial control to ensure their segment profitability. Also, well optimized processes and tools are required to manage the higher number of units. Due to these reasons, a department-centred organization (Sales-centred team) will provide better results for these segments.

On the other hand, Infrastructure and Special segment have higher complexity, higher price per unit and longer project times. The product personalization for each project and customer is high, and customer

modifications are common during each project. Due to all these reasons, a customer-centred independent structure is more appropriated for these two segments. The total market volume [€] for these segments is lower, so it could be that some branches of the organization wouldn't be able to maintain an isolated structure with specific resources; in this special cases, then it would make sense to integrate one or both segments in the "department-centred" organization of the residential and commercial segments.

It's important to notice that two different segments could share the same product (with minor differences), but have a different process and organization structure. These results and conclusions are possible when the organization is transformed towards a customer focused strategy.

The final step for each team would be to define the FTEs (number of Full Time Employees) required for each department. This will come from the expected SAM and SOM (see figure 13) defined in the company sales and financial strategy, and match with sales efficiency indicators such as "number of offers per sales per month", or "expected Order Intake [€] per sales per year". These indicators can be based on a benchmark with the sector or in a simulation for one or few sample(s) that is then extrapolated.

Key accounts

Before concluding the sales structure section, quite often B2B businesses require the management of Key accounts. These could be the causes:

- Big customers that require specific points of contact, and special processes to adapt from their suppliers (the business case company of the thesis) to their big companies and volumes (reactive key accounts).
- Certain key customers that have been identified as highly profitable, either in terms of absolute profit or relative profit per unit (proactive key accounts). This would be the last internal secondary category of customer segmentation that was covered in section 3.2.1, which is a type of segmentation normally known as "A-B-C customers".

In both cases, the best organizational set-up is to define a cross-business-line team that will manage the key accounts, in order to control and maximize the "Customer Value Lifecycle" (or total sales and profit per key customer).
For this setup, there are again two main options to choose from:

- Department-centred solution: A small key account team that control most of the communication with the key account customers, and have indirect responsibility over the selected professionals in the other departments of the company that will manage their projects.

- Customer-centred solution: a key account department that will have a cross-functional team capable of covering independently all the customer needs for each of the business lines that the company has.

The pros and cons of these two options for the organization are exactly the same as described previously for the organizational setup of each lift installation segment. The selected option for the sample business case will be a "department-centred solution" (indirect management of the resources). This is also influenced by the fact that some "reactive key accounts" are required in a global scale, but the sample business case organization has a global centralization "level 3 – coordination" (see section 4.2). This mismatch between customer and own organization allows only to keep the approach of "Department centred solution" when the key account managers have only an indirect management over the required resources.

4.4 **Operations setup**

The business of operations is mainly about keeping the product and service cost as low as possible. This is done via economy of scale, standardization and optimization of processes (Hagel & Singer 1999). How can this be compatible with a customer focused approach? Wouldn't that approach always increase the cost due to different and variable demands?

Looking at the original concept of customer segmentation made by Wendell Smith in 1956, as it's cited by Quelch and Jocz: "He insisted that the goal of differentiation and segmentation is always to minimize the joint cost of production and marketing" (Quelch & Jocz 2008).

Many companies operate under a customer's reactive operational approach which focuses primarily on their own internal business priorities and they just try to accommodate the customer demands on it. This approach applies to operations by trying to find a balance between:

- The (internal) necessity to standardize and streamline as much as possible the processes, and the avoidance of operational adaptations for those customer segments (which total lifecycle added volume and profit is not interesting).
- The operational (reactive) adaptations to match the key added values for each customer segment, with the hope that it will increase the sales volume per segment (with its decreases the operational cost per unit) or the margin for these features in a way that it worth the extra operational effort and complexity.

However, there also a customer's proactive operational approach that will provide a superior flexibility and financial performance, and it will make these customer adaptations less painful. This is based on the idea that an embedded customer orientation culture provides the company

with a customer knowledge that allows it to anticipate changes related with product or processes (Day 1994). Among the operational benefits are greater customer satisfaction, delivery to specifications, and delivery reliability (Ziggers & Henselerb 2015, 19). There have been two empirical studies on the relationship between customer orientation, customer integration, operational flexibility and financial performance. Before getting into their results, this is a brief description of the terms they use (Kotcharin 2012, 2):

- Customer orientation: company culture that "facilitates the understanding of targeted customers and allows for continuous creation of customer value".
- Customer integration: "the degree to which a manufacturer partners with its external partners (customers) to structure inter-organizational strategies, practices and processes into collaborative, synchronized processes"
- Process flexibility: company's capacity to "adjust the operational processes to speedily accommodate changes with minimal penalties in efficiencies"
- Financial performance: it's related, in this context, with the "operational cost performance. On product/service cost, cash flow and profit".

The empirical first study made in 2012 with 698 tier 1 and tier 2 companies of Thailand's automotive industry, run by Suntichai Kotcharin (Kotcharin 2012) shows that:

- There is a strong correlation between customer orientation and process flexibility. This is: the company operational flexibility capacity increases greatly when there is an embedded customer orientation culture.
- There is a strong correlation between customer orientation and customer integration. This is: once that there is a good customer oriented culture, there is a great improvement in processes and shared resources with its long-term customers.
- There is a strong correlation between customer integration and financial performance. This is: the financial result of the company is considerable better if it has a long-term partnership and bidirectional collaboration with its key customers.
- However, it's not statistically conclusive with the direct relationship between Customer Orientation and Financial performance. And it encourages the scientific community to work further on these findings.

The second empirical study on this matter (Ziggers & Henselerb 2015) made in 2015 with the procurement departments of 176 Dutch firms (from initial data of 1217 firms) from very different sectors. They checked different hypothesis both on customer orientation and on supply management. They confirm, via interviews with the firms, that focusing on both sales (customer orientation) and procurement (supply-base

focus) the company performance increases. However, the most interesting finding of the report, for this paper, is that the strongest parameter for a good customer-supply focus is the "long-term relationship focus". And its consequences are defined as "it fosters knowledge development and exchange, the willingness to share risks and revenues, and an aim for mutual gains". This definition fits exactly into the definition of the first paper for "customer integration". These analyses and their exposure seem to direct their finding in the same direction as the first paper: a good supplier-customer relationship helps greatly on financial performance, long-term relationship (previous associated with customer integration) is a vital part of that good relationship.

From these two studies it can be concluded that the path from customer orientation to financial performance seems to require the success on two middle steps:

- Customer integration. By building a strong long-term partnership with key customers, that will allow for common strategic goals with shared resources. This is easier once that a fully embedded customer oriented culture is stablished.
- Process flexibility. By adapting the processes to allow market changes, which is possible due to the customer orientation knowledge.

This can be seen on the following figure from the first study, where the important correlations that have been exposed are highlighted in red:

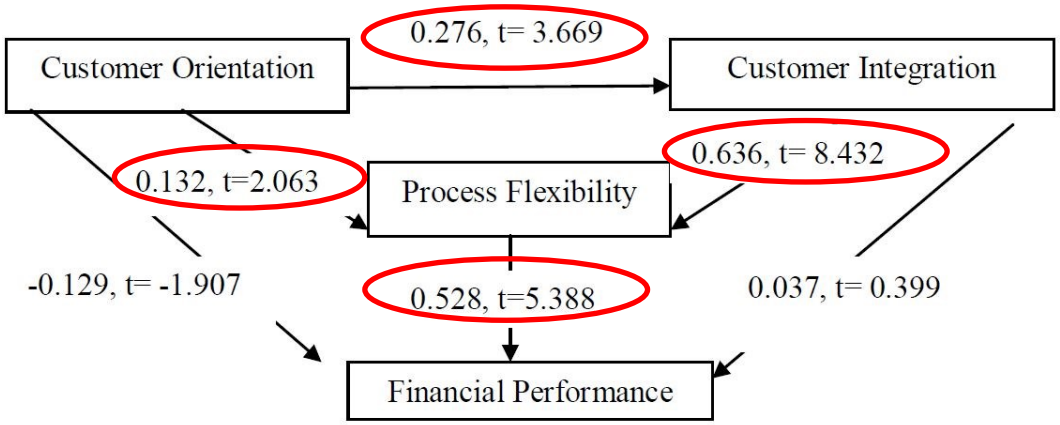

Figure 19. Structural model. The effects of customer orientation (Kotcharin 2012)

In the product section, specifically in section 4.1.3., the reactive approach to customer orientation was covered (aligning internal needs with the operational complexity increase of customer demands). The following sections will cover the customer's proactive operational approach for each important operational area of the business case. This proactive approach will re-align the processes to the market needs, to allow for market flexibility and customer integration.

The following sections will not focus on the core activities of any operations business, cost efficiency and processes streamline, as these are assumed to be working. Instead, they will cover only the activities that provide that extra flexibility and financial profitability when the operations department becomes proficient on customer orientation, integration and product flexibility, on top of its basic duties.

4.4.1 Elevator sector – Production

The core activities of production business are: adapt product design to production works, supply management, production and assembly, quality control and delivery. The lift sector has some specific challenges in the production area, these are:

- The product is not completed in the production centre, but on the installation destination (IKEA furniture model). This one affects specifically a number of others areas:
    - The R&D and production feedback have a “longer loop”.
    - The logistics may increase in complexity.
    - Quality control of the final product cannot be done in the production centre, only sub-products can be controlled.
        - Higher quality control on external suppliers
        - Extra control on components compatibility
        - The costs of poor quality and quality corrective actions have a higher impact and a higher cost
- The production complexity (materials and tolerances) are similar to other vehicles or big electro-mechanic goods, but the components volumes (specially in units/year) are normally lower, which, again, have certain consequences in other areas:
    - Economy of scale is possible, but only to a certain level.
    - Suppliers’ management have less leverage than other businesses that share similar suppliers.

This should have provided a contextualization of the production activities for the lift sector. Now it’s time to work on the areas that provide added value by using customer orientation. However that requires first to identify clearly the customers. The following graph explains the supply chain of the lift installation business line. The direct customer for each step is the next one on the supply chain, and this is the customer that requires the main focus (customer orientation). However, the indirect customer (steps after that one) would be important also for further alignment and business understanding (customer integration takes into consideration the next step). For production, the direct customers are the installation departments or companies, and they can be an internal or an external customer (same or different organization).

Figure 20. Supply chain for vertical elevator industry

The previous section has identified the three steps towards financial performance via customer orientation, now this will be applied to the lift production activities. The paper will cover the activities and its description (without all the implementation details), so they can be used as an example to apply to any other business.

Customer orientation: the main target of these actions is to improve the product/service value by adding features that will provide a positive impact for the customer. Also these features should improve and make smoother the processes supplier-customer, to stablish a good starting point towards customer integration activities, and to provide exit barriers for that customer to work with other competitors (long-term customer).

- Organizational shift from department-centred to customer centred (as it was explained in the sales section of 4.3.3). With good customer knowledge, it's possible to define the best possible segmentation. It will provide better support, it will build stronger long-term collaborations with the customers, and it will help on the streamline of processes closer to the customer's needs.
- Adjust logistics to installation needs. Most of the product assembly needs to be done on site (IKEA style). For that reason, it's important to align the logistic of the product as per the installation method. Both on product weight (Health & Safety) and also in installation steps ("one box per step"). This will increase manufacturing cost, but it will reduce the overall cost, so it's cheaper overall for the customer (installer) and the final customer (building company).
- Adaptation kits for key customers. As the installation will be done on site, the environment might be different from customer to customer (or even from installation to installation). The production centre can build a "key customer kit" that will include certain material that this key customer normally need. This will reduce the overall cost, streamline the customer's process (with a smaller impact on the production centre) and it will make stronger the relationship with that customer.
- Enhanced technical support. As the product will be both assembled and commissioned on site, the technical knowledge of the customer on the company's product needs to be higher than other type of manufacturing process. This will improve the customer overall cost, improve the customer satisfaction, and generate exit barriers for them to work with other products or competitors.

Customer integration: once that there are long-term customers that are satisfied with the company's products and its processes, then it's time to work on activities that will "integrate the customer". These activities should stablish common inter-organizational strategies, work with resource collaboration and/or work with synchronized processes (Kotcharin 2012, 2).

- Use customer's business cases for decision making on product releases, or on priorities for new product features. The company can also share the risk, or the cost, of certain developments if they are not aligned with its original strategy, or to compensate its cost of opportunity. This will increase its operational flexibility and generate a financial improvement (financial risk management).
- Provide documentation/certificate/tools re-developed with the final customers' needs. This is to use the already developed platforms/products to add some features, with the customer's data input, so they can use it themselves and save time/cost to develop it themselves. This will increase the company financial performance, as the "value-based pricing" for these features (pricing model that can be used, thanks to the acquired customer knowledge) will generate higher profits.
- Training and support in the name of the customer. The company can provide support on site, do the commissioning for its customers, or even provide training to this "second-level customers" in the name of the customer. This will provide an economy of scale on its own technical support resources, and it can provide higher margins for this extra service, using again "value-based pricing" to optimize the margins.
- Transparent sales offer, for key strategic projects. For strategic projects, for both of the companies, it is possible to make a "shared open sales offer data" that will optimize the margins and provide better chances to win the project. It can also add certain features in this key offer that are only possible with a combined offer between manufacturing and installation team, which will highlight the offer against the competitors.
- Spare parts of the customer. Possibility to add certain customer's items in the company spare parts catalogue, so the customer can purchase them directly from the company's warehouse, together with other product items that they will require. If this is done properly, then this will also end up improving the financial performance by warehouse economy of scale, and by growth of sales volume, as it should incentivize the customer to buy more spare parts from the company.

If these actions, both on customer orientation and customer integration, are correctly implemented, then they will build customers' long-term stable business relationship, and they will improve the company financial performance thanks to better margins and extra volumes.

Operational flexibility: Either via customer orientation, or via customer integration, the operational flexibility actions discussed in this list will increase the company's capacity to quickly adjust processes to the customers and markets, with minimal penalties on efficiency (Kotcharin 2012, 2):

- Align production milestones with customer's project milestones. This way the project changes required by the customer will have less impact on the production process. The alignment needs to be done on as many aspects as possible: data collection, product design, cash flow, etc. This implementation will be possible if the company has a good customer orientation (basic level) or good customer integration (advanced level).
- Possibility to offer shorter production time or partial deliveries, at a cost. This way the company can capitalize these changes, while it minimizes its impact – as they're part of the process – and avoid the necessity to take other measures when this situation happens (other worse measures such as: drop the project, or try to reduce the lead time with just personal effort of the team). The exact needs can be known from a good customer orientation and market knowledge.
- Build a process for project change, and a catalogue if possible. As a further evolution from the production milestones. This would also help the company customer on their own project change needs, and it would streamline the project change processes.
- Discuss frequently project priorities and dates with the customers. This would allow the production centre to absorb part of its own unexpected setbacks that any production process has. Of course, this works better when there is good customer integration.

If these actions are properly implemented, with good customer orientation and integration, then they will increase the company competitiveness against competitors. They will also increase its financial performance as the product value – thanks to this flexibility – will increase. And they will also improve the company financial performance by reducing cost on change management and production setbacks that any production project have in real life.

4.4.2 Elevator sector – Installation

The previous section of production has covered the examples together with additional notes that help linking them with the theory part. This and the next section will just cover the examples, which is the most relevant information for this business case.

The core task of installation business could really fall under the umbrella of installation project management. And this type of project has the main activities of: logistics, storage, resource planning, installation, test & commissioning, and customer handover.

The general challenges of this installation activity are shared with those of any project: scope, time and cost (Baratta 2006). However, there are few specific challenges that apply to the lift sector installation:

- Installation environment could be subject to unexpected changes. Even when the construction requirements are well defined towards the builder, it is quite common that there are areas that might not match either the shape or the dimensions, and they require modifications before the installation. Additionally, the conditions on site, for any construction activity, are subject to constant changes. These changes could be planned, as the building evolves, or unpredictable such as weather conditions or unexpected collision between construction activities.
- Health & Safety (H&S) is a major topic, as there are many common risk hazards involved. According to different H&S consultant companies, the lift activities need to work directly with 7 of the top 10 H&S risks in the industry, while the other 3 might affect them indirectly from the building environment (Alcumus Group 2014). Specifically, working at height – with a moving platform or with a scaffold, which are the two standards for installation method – is the number one risk in the construction sector.
- The product will be assembled, tested and commissioned directly on site. It provides specific challenges especially as these delicate activities are required to be done on a construction environment. This will require higher technical knowledge, better access to spare parts, adaptability skills for unexpected problems, and access to local materials and solutions.

After covering the key activities and risks of the operational step, it's time to review the activities that will bring financial performance via customer orientation, customer integration and operational flexibility. They will be based on the operational activities describes in gain creators and pain relievers of figure 11 "Customer-product fit for builders" of section 4.1.2, plus others more specific towards performance:

Customer orientation:

- Align project plan with the company customer. As it was discussed on previous manufacturing section, this needs to be done on all possible aspects: product design, time-plan, cash flow, etc. It benefits the builder plan, and it will normally save costs for the installer.
- Adjust scope of work. Review the activities that are responsibility of the installer/builder and come up with activities that are easily standardised by the installer that could provide an added value to the builder. This would increase the product value as it decreases the builders overall cost and effort.
- Scaffold-less installation. This is to use the elevator components as a working platform to install the elevator. This action provides independency in the installation method (less effort from builder) and

it isolates the works from 3rd party requirements such as a scaffold (increase installer operational flexibility).

- Temporal closure after the installation. Allow the builder to do works around the elevator without damaging the product. It increases the builder project management flexibility.
- Construction use elevator. It allows the builder to transport vertically goods in the building. It provides the installer a good value-based pricing option, as it provides important savings for the builder. If it's not done properly, it can generate conflicts due to damages in the elevator during construction use.

Customer integration:

- Definition of standard product or standard specifications. For well-stablished customers, this action will provide the builders an easier way to quote for offers, it will make the installer the preferred supplier for the project, and it will improve for both parties the offer cost, the operational cost and the risk of errors.
- Common meetings with final customer. This will ease the project planning and decrease the projects setbacks and their costs. For well stablished customers, this can be even done for technical meetings during the offer phase, increasing the offer to order conversion chances for both parties.
- Consultancy on vertical traffic. It is one of the activities that the builder normally needs to cover on the design phase towards their customer. It provides the installer (and the rest of partners in the value chain, such as the architects) higher possibilities to win the project offer.
- Stand-by option for the opening. It provides the builder additional tranquillity on their task of building handover. It increases the perception of long-term partnership which benefits repetitive sales and other customer integration activities.

Operational flexibility:

- Temporal closure after the installation. This action was already covered for customer orientation. But it is actually very important for operational flexibility, as it isolates most of the elevator construction works from the rest of the building.
- Local decoration. It provides better customer orientation, more options on product decoration and product features, and it reduces risk of errors between the manufacturing centre and the installation area. However, it's important to find a good supplier with sector experience; otherwise, this operational flexibility can be at high cost or even counter-productive.
- Local suppliers for each elevator component. This will provide local solutions for any installation setback, which is the key to keep the project timeline, and one of the most important causes of operational cost deviation.

- Options (at a price) to solve most of customer's responsibility scope of work. This will protect the installation time plan, as the installer won't depend on others to make their work. At the same time, it's an opportunity to sell the options to the builder at high margin, as it will normally have a cost saving for them and it will save them from possible delay penalties from either the installer or the property owner.

4.4.3 Elevator sector – Service

The core tasks of elevator service business are: customer management, preventive maintenance, repairs, callouts and entrapments. They are a mix between the standard customer communication on a service business, and the service and maintenance management of a technical product. However, there are specific challenges for the elevator sector:

- Entrapments. They involve people trapped inside an elevator cabin for a certain period of time, possibly with high anxiety or even claustrophobia, before they can be rescued. This requires the following areas of attention for this service business:
    - Responsiveness: to minimize response and rescue time.
    - Soft skills for delicate moments. The professionals in contact with the trapped users – either by phone or in person – might face very agitated users, and they will require a certain set of emotional skills to manage them.
    - H&S users. The same very agitated users might need to follow specific instructions to be rescued. In the most extreme cases it could even require them to go through a ladder to the top of the elevator cabin, and walk a runway between one elevator and another one, while they're at height. It's not just customer care; it's also H&S care.
- Huge variety of brands and models. This is shared with other services when it's about highly technical products, and it affects:
    - High technical skills required. It will require a scalable technical network, technical trainings, special tools, etc.
    - Difficult repairs. It will require a supply network of spare parts and compatibility solutions for a wide variety of products.
- The users are not necessarily the one who pay. This is also shared in other service businesses, and it affects the business model.

The activities toward financial performance via customer orientation – based on the operational actions of the figure 12 "Residential lift, product fit for users and owners" from section 4.1.2 – are the following:

Customer orientation:

- Service levels: basic/mid/premium. It provides service level options for the customer to choose from. It increases the possibility of future upselling, and it allows the service provider for higher profit via price anchoring techniques (Ciotti 2012).
- Focus on communication for each type of customer. This service will have different customers with different contexts and communication needs: property owners, property managers, users. It requires to train personnel on this ability, or to hire them with this innate skill. A directed communication for each of them will improve their customer satisfaction, and it will help the service provider to direct correctly its efforts.
- Spare parts. Possibility to keep customer's spare parts in the company's warehouse. This action and its benefits were already covered for the production activity.

Customer integration:

- Proactive repairs. The service provider repairs the issues without pre-approval from the customer up to a certain value, and then the customer is automatically charged after completion. It saves operational cost for both parties, and it improves service quality. It requires a good supplier-customer trust and relationship.
- Evacuation training. The customer is trained on basic evacuation operations for users entrapped in the elevator. This will build confidence in the customer, and save operational cost by the service provider. It requires transparency between parties.
- Multi-year repair and modernization budget. The service company provides for free a multi-year budgeting calculation with the estimated costs, on top of the basic preventive maintenance, that this specific group of elevators will have based on a technical assessment. It helps the customer to make their financial forecast, or re-sell the information to their final customer. It provides the service company opportunities for upselling (change to the premium package, with all included), or for better operational costs (proactive long term time-plan of works, instead of reactive quick planning after breakdown).
- Maintenance messages shown in the lift screen. The property manager could write messages and announcements to the tenants in the elevator cabin screen. This reduces operational cost for the property manager as they might not need to drive to allocate a specific announcement paper in the building. It increase exit barriers for this customer to change service provider.
- Share with customer geolocation of technician once that the technician is on his/her way. This would reduce the workload of the property manager, as they don't need to pass the information back and forward between service providers and users. This will increase the perception of the service value, allowing for better prices in the long term, and it will build trust in all parties.

Operational flexibility:

- Multi-year repair and modernization budget. Covered in customer integration, but it's a vital action also for operational flexibility. The customer agreement of these preventive replacements would provide not-urgent works to the service company; works that they can use to cover workload gaps in their resource planning.
- On the shelf repair kits. It's a "prêt-à-porter" reparation kit for the most common products under maintenance (it requires proactive customer segmentation sales). It allows for better price margins due to high quality service and it streamline the processes reducing the overall operational cost.
- Local suppliers for each component. Covered in installation section. It provides fast service response and reduces operational cost.
- Remote control. Possibility to make certain remote actions in the elevator, such as auto-reset, or to read remotely the status of the elevator. It reduces greatly operational cost.

The proposed actions for the three different operational steps of this business case should provide a good sample base to be applied in other businesses. It's important to highlight one more time the importance of their implementation: a good implementation will be the key to obtain the potential financial benefits enclosed in each action. In that sense, the company requires to have an overall planning for internal projects, like the ones described. A planning that will prioritize the actions, control their required resources, control their progress, and increase with it the ratio of a successful implementations.

5 CONCLUSIONS AND NEXT STEPS

This paper has presented a sample business case on how to adapt, step by step, an organization towards customer-focus, using the customer segmentation as a starting point and a driver of this change. A customer oriented organization has always provided benefits, but it's becoming vital for the survival and success of businesses, mainly due to:

- The world keeps rapidly evolving and accelerating. The changes in the society, boosted by the exponential growth of technological innovation, are changing all the habits and culture of the consumers, and even their beliefs.
- Most of the traditional business models have been disrupted in the last two decades, due to the changes brought by digitalisation. This market force, that has affected most of the businesses today, sooner or later will also disrupt to a certain extend the infrastructure and construction sectors.

The only way to keep up is by increasing the business flexibility, but specifically the flexibility towards the markets and the customer needs.

This is only obtained by a good customer orientation and integration, which provides the key know-how to understand and predict the evolution of the markets where the companies operate. This will prepare a company towards the different economics periods, digital disruptions, climate changes, political changes, and toward any other market influence that will continue appearing in the next decades.

While this paper has covered the most important customer focused changes required in an organization, it has just touched the surface when it comes to implementation. The real change happens when the whole organization adapts its work culture and habits towards the new reality. The next section will cover briefly the most common reasons for change resistance in the organization and a methodology that might help to accelerate this transition, while making the process as effortless and independent as possible. And the section 5.2 will provide a glimpse on the future of elevator sector due to upcoming digitalisation changes.

5.1 **Company's cultural changes**

Resistance to change is a very well-known issue in the business environment. It started to be more visible from 1960s. That was the time when the markets started to be more dynamic with the rise of international competition, and when the technology started to request major adaptations in the organizations. The change management has been a hot topic since then, with different methodologies and even university degrees in the recent years. However, the core challenges remained the same as it has always been a social and human nature problem. This brief section doesn't intent to cover all the theories, but to provide some basic ideas and methods that might help in the context of customer focused change management.

The main reason of failure for change management has been the resistance of the people in the organization. They normally don't fear the change itself, from a rational or business perspective, but they fear the social changes that it might bring with it (Lawrence 1969). This finding highlight that the importance for a change is not the technical knowledge on the change benefits, but the social understanding of its impact. This section provides first a step by step method, and then influence anchors that will support the change.

There are well documented 8 strategic steps to bring organizational change in companies on any size or culture (Kotter 1995):

1. Create a Sense of Urgency. This is: getting the message that no-movement will be worse than moving into the change. It requires full engagement of senior management and all involved teams.
2. Build a Guiding Coalition. This is a good amount of members from different management levels with high influence in the company who are committed to engage against external future pressures.

3. Form a strategic Vision & Initiatives. A vision from the guiding coalition that is clear, easy to explain in 5 minutes or less, that catches the interest of any audience, with its initiatives behind it.
4. Enlist a Volunteer Army. The vision needs to be communicated in every possible available channel to reach hundreds or thousands: meetings, newsletters, training catalogue, etc. It's not only sharing words, but also behaviours changes and personal stories.
5. Enable Action by Removing Barriers. In this phase the project is still not strong enough to settle down; so it's important to resolve the most important barriers that will allow the project to avoid early failures. There can be several types of barriers that need to be changed for positive influencers. An example list is below.
6. Generate Short-Term Wins. The change project will take long time, so it's important to plan and obtain certain short-term wins within 12-24 months from the start of the project. They need to be planned and targeted, and they need to be measurable.
7. Sustain Acceleration. After few years in the change management process, managers can be tempted to declare victory. If there is still enough people resisting the change, they will use the opportunity of the "tired promoters getting relaxed about the project" to jeopardize and revert the wins and taken actions.
8. Institute Change. The change culture sticks only when it's fully embedded in the organization. When it's clear that the change culture bring sustainable benefits, and when the successions plan for the company include change culture promoters in the plan.

In order to support step 5, and also other steps, these three categories might help to identify barriers or positive influencers. This is based on the book "Influencer: The New Science of Leading Change" (Grenny, Patterson, Maxfield, McMillan & Switzler 2013, 78–81):

- Personal influencers: based on personal believes, typically related with social status change (Lawrence 1969).
    - Example: a manager who doesn't buy into the change, and doesn't implement it, or make demands against it.
    - How to address it: work with the manager/s and treat them fairly, in the context of the new company vision.
- Social influencers: based on the influence that others have on a person.
    - Example: a doubt or disappointment is raised on the project team due to a specific action; it expands as a rumour until it starts to put the general perception of the project at risk.
    - How to address it: the guiding coalition needs to have enough influence to overcome part of this issue, also they can't be blinding absorbed by the project vision until a point that they are not aware of feedback and critics.
- Structural influencers: based on physical/virtual barriers that will affect the individuals. It can be IT tools, office locations, factory plans, etc.

- Example: an organization wants to become more customer-focus, but the company stays in a full centralized sales and operational setup for organization and offices.
- How to address it: identify these influences and try to solve them in early phases, use them to promote change.

5.2 **Elevator sector – Digitalisation**

The final important next step to cover is how digitalisation is expected to affect the elevator business. This would be a decisive external changing factor that will force the sector to adapt quickly, and possibly change their business models with it. Specifically, there are three areas where a certain digitalisation starts to show up:

- Predictive Maintenance solutions, that started in 2015 by using Internet of Things (IoT) and machine learning in the elevators under maintenance. The biggest elevator companies have signed exclusive partnerships with some of the biggest Tech companies – such as Microsoft, IBM and General Electrics – to add sensors and analyse the data of their elevator portfolio, with the objective of finding patterns that can predict when an elevator is about to breakdown, so preventive targeted actions can be taken that reduce the operational cost and increase considerably the uptime of the elevators.
- Urban mobility solutions, under progress. The urban mobility is slowly linking together over the Internet: public transport network, with bike and car sharing, with taxis… and also with elevators and escalators. A leading elevator company has synchronized the elevators in a metro station with the trains, so they optimize the evacuation of passengers. Another leading elevator company has already developed tools to help users navigate and find the fastest route *inside* a building, with the purpose of linking it together with other urban mobility solutions in a seamless user digital experience that will continue in the next years.
- Advertisement on the lift, under progress. In the current modern capitalist societies, the hyper-consumerism is already a new reality. It was estimated that an average American in 2017 was exposed to 4000 to 10000 digital ads daily (Simpson 2017), and this number is just getting higher since then. The elevator screens are suitable for such digital advertisement – either to be monetized by the elevator company or the property manager – and with the further connectivity between platforms, it could be that these displays will be able in the future to show personalized ads for the specific users that take the lift.

These are just the first solutions of digitalisation for the elevator sector, which will continue to develop rapidly together with the rest of the infrastructure and public building sector in general. And only the companies with change management and customer focus in the core of their company culture will be able to identify and adapt to these changes.

The next section will cover how the digital marketing works, as an epilogue of this thesis. It should provide a wider vision on digitalisation, with the purpose to complement and give further examples on how digitalisation may affect any other sectors.

6 EPILOGUE. ONLINE MARKETING, FROM HYPER-SEGMENTED CUSTOMERS SEGMENTATION TO FULL PERSONALIZED MARKETING

From the historical development of customer segmentation covered in this paper, this epilogue tries to look ahead and tries to predict what will happen in the next years and decades. It is expected that customer segmentation will continue being a key tool on B2B businesses, but possibly it will become a less relevant tool in most of the B2C businesses, especially those related with mass consumption. It is expected that the development of "hyper-segmentation" (Tedlow & Jones 1993, 8–36) will lead even more into a "full personalization". At that point, it will not be possible to talk anymore about "customer segments", but a full "personalized marketing experience".

In order to arrive there, more personal data is required, and this comes from a further digitisation, both for businesses and for all areas of life, with an impact for marketing in three main areas: data collection, big data analytics, and data use.

6.1 Future of market data collection

There are two types of marketing data collection:

- "Classic" consumer data collection: surveys, government official data, consumer profiles in supermarket, etc.
- "Digital" user-based data collection: emails, smartphones use, wearables, CCTV cameras, etc.

The interesting part here is that online marketing has reached a point where the current bottleneck of digital data collection is not anymore the technology, which has developed exponentially for decades (see graphs below), but the "society habits change resistance"; this is, the transition, boosted by the big digital corporations, for the users to adopt new Apps and devices that provide them an immediate increase in comfort with the disadvantage of the loss of their own privacy. This is happening in every aspect of the digital life. But it provides especially useful personal marketing information when it comes to social networks.

The following three graphics show the development of:
Figure 21 - World number of internet users, with a linear steady growth.
Figure 22- Active users per social network, with a linear growth per platform, but with an increase in the number of platforms used by user.
Figure 23- World data traffic, with an exponential increase.

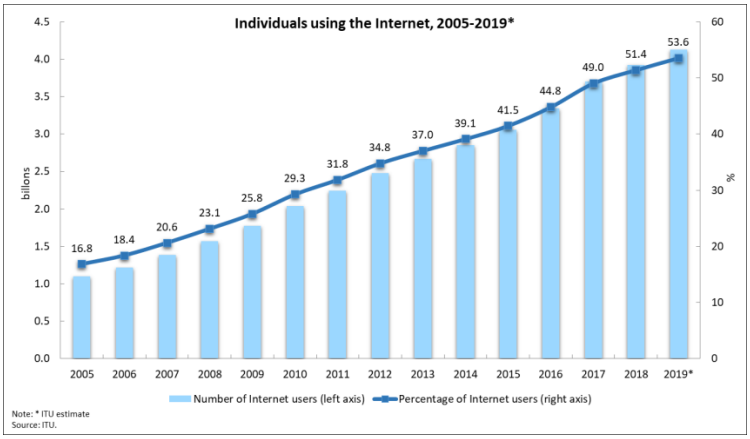

Figure 21. Development of worldwide internet users (ITU 2020)

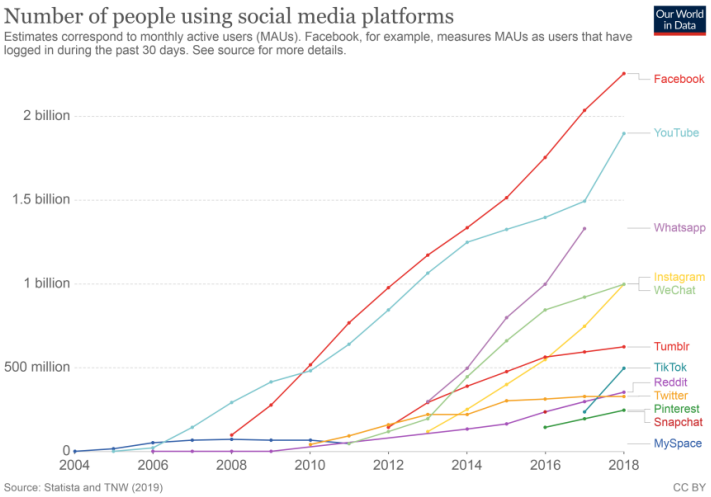

Figure 22. Number of active users in social media platforms (Statista & TNW 2020)

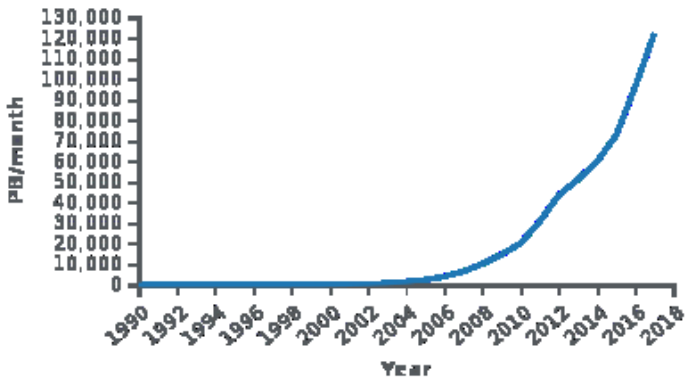

Figure 23. Global Internet traffic (Cisco 2020)

As it can be seen from the graphics, while the number of users is growing steadily, the data they share and the amount of social networks they use is growing rapidly. The information shared is more personal and private as more aspects of the personal life are being digitised:

- In the 2000s there were only business emails (managed centrally by tech corporations) and voice and SMS (managed by telecom providers, not Tech Corporations).
- In the 2010s it started the era of smartphones that centralized in the same few Tech Corporations the use of phones, geolocation, the keyboard input, etc. And the social networks and the voice over IP made that all the personal information, by text and call, were also digitised in centralized environments.
- The early 2020s is adding up (among others) personal face recognition to unlock the latest smartphones, a 24/7 audio recording to be able to use the smartphone's embedded assistants, and a big amount of health and nutrition habits data from the increasingly popular wearable technology – as the world moves from 526 million worldwide connected wearable devices in 2017 to a projection of 1.1 billion for 2022 (Holst 2020).

There are some counter-movements towards the protection of the users' data privacy. There are some governmental initiatives, such as the privacy policies implemented in May 2018 in the European Union (European Commission Regulation 2018/1725) but it's difficult to apply it in a digital globalized world against the few globalized multinationals (Satariano 2020). There are also companies which promote and use as selling argument the protection of the users' data, such as Firefox for Internet Browser, or Telegram for instant messaging. However, they can't compete with the almost zero user entry barriers of "free apps" and with the financial income strength provided by selling the users' data and personalized ads. Therefore, it is expected that the trend of private data sharing will continue growing, despite of these efforts, in volume and in level of privacy, during the coming years and decades.

Furthermore, at the time of this thesis' publication, the global pandemic of COVID-19, the infectious disease caused by a family virus called "coronavirus", has forced most of the world population to stay at home during several weeks (as a way to slow down the pandemic spread until other solutions are available), and a further development of digital use is already visible after few weeks of this new reality for the society. The graphic below shows the increase of mobile use for different countries, categorized in colours by the date where the confinement measures started.
Also, most governments in different continents are implementing the use of geolocation apps in all the population, in collaboration with Tech Companies such as Apple and Google, as a way to try to restrain the pandemic outbreaks (Janssen & Anton 2020).

This unique historical event is accelerating again the implementation of digitalisation and data collection in all private aspects of all societies, and it's not expected to move backwards after the pandemic crisis ends.

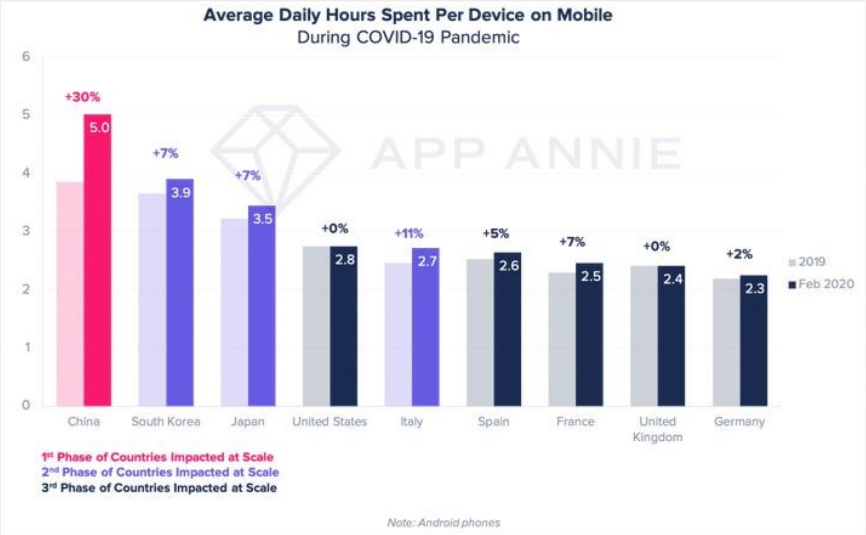

Figure 24. Mobile use increase due to COVID-19 confinement (Sydow 2020)

6.2 **Future of big data analytics**

All this data needs to be analysed and categorized in order to be used for marketing purposes on potential or existing consumers.

First of all, the data needs to be aggregated. In that area, there are mainly the following players:

- Few big Tech corporations try to provide a complete package of all standard digital services to cover all the areas of the digital life of their users – via purchase of other companies, or release of new services – and then aggregate all that information themselves to be able to provide personalized ads, without external aggregators.
- There are companies that trade with ads, and combine the data from the different sources (IAB 2017) and sell it to the companies that require it. This can be done in a single use of data, or with a live implementation. This can be done in two ways:
    - Simple platform, where the content platform contacts an agency ad server that prepare and provide the advertisement, based on the user's metadata.
    - Bidding platform, where ads for different agencies bid on the user's display, and the highest bid is selected in few milliseconds.

  In all of these externalized cases, there is a key player called "Data Management platform" that receives personal and behavioural information from the user – such as: age / gender / has it been here before? / etc. – and define an "ad profile" based on that information

for the ad agencies to personalize and do the bidding of their ad content.

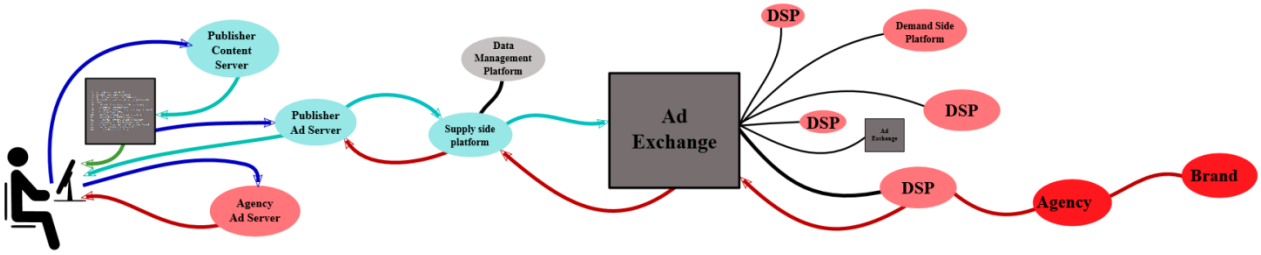

Figure 25. Online advertising serving process using online bidding (Nagle 2015)

For any of the ad management system explained above, the use of all this new data – that has an exponential growth – requires the development of new machines, technologies and mathematical models to be able to analyse it and make use of it. There are two areas that have received a big amount of research for this need:

- Scalable mathematical models to analyse the relation between users. In the last 20 years, with the start of the social platforms, a new need was found: the data size collection and computing needs had grown exponentially with the linear growth of their user base. In other to solve it, mathematical models and new data computing rules were implemented, most of them based on "Graph Theory" applied to social networks (Otte & Rousseau 2002, 450) and then to other areas such as digital marketing.
- Mathematical models to find co-relations in the aggregated data, so it can be used to predict future behaviours, both on individual level and in global level. Most of these efforts are under the research umbrella of "Big Data" for data storage, and "Machine Learning" for correlations and extrapolations; which are two areas that will continue developing in the next years.

6.3 Future of marketing data use

After the information is collected, correlated and categorized, then it is ready for targeted marketing. This hyper-segmented information is very valuable for the market. The bottleneck on this case is once again the resistance to change by the users on receiving such personalized advertisements, and the data privacy policy for some markets.

China, India and Russia are the countries in the world with the worst data privacy regulation (Bischoff 2019) and they accumulate, at the same time, a third of the total internet users Worldwide (ITU 2020). In those countries, their governments are, in most cases, doing a surveillance of their citizens instead of protecting their right for data privacy. Some of the examples there are: use without protection of data biometrics in CCTV, standardized use of digital censorship, no maximum time limit of

users' private data storage, etc. In these environments, the population is quite used to this lack of digital privacy, and the users are more willing to receive and use the personalized ads provided by this marketing methodology. This volume of users is leading the global trend for digital rights and digital advertisement practices, a trend that the rest of the world follows at different speeds.

The unique digital profile for each individual is shared across platforms as a "unique ID". Sometimes this ID is directly identified by the user, with their login information. Other times it's identified automatically with information such as IP address, cookies, Wi-Fi network, or geolocation. This means that the personalized digital marketing will be consistent across platforms and devices

Currently the most common ads display channels are the smartphones and the desktops. However, there is a strong growth on social media and multimedia formats such as smart TVs (see graph below) and this will allow in the future the development in display formats: smart glasses, Virtual Reality devices and smart public screens.

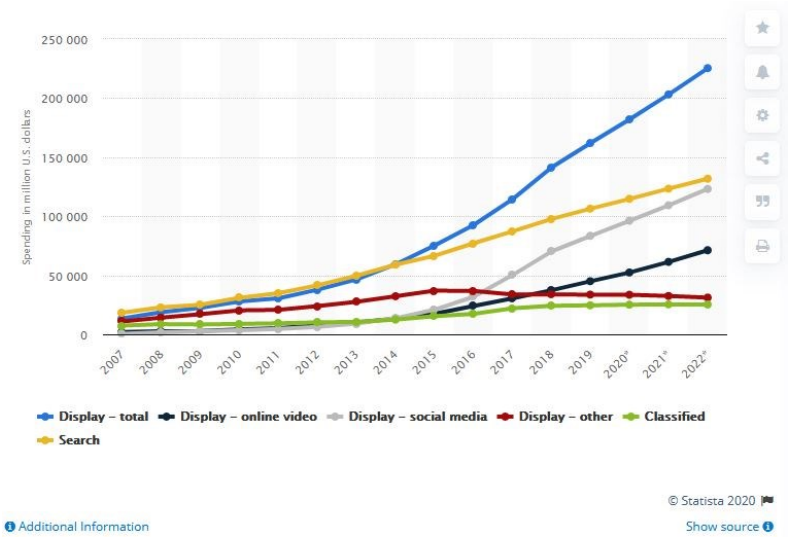

Figure 26. Internet advertising spending worldwide, by format (Guttmann 2020)

The digital advertising revenue is mainly centralized in two firms: Google (mobile Apps, email and Video Streaming) and Facebook (social networks), they accumulate more than 50% of total digital ad global market (Enberg 2019). It's a strong oligopoly, where the top 10 companies accumulate more than 75% of the total market size (PWC 2019, 15) and this trend of strong accumulation of user's data, ads revenue, and oligopoly digital power is expected to continue in the coming years.

For the not-digital-native sector, like the elevator sector covered in this paper, the general digitalisation trend will slowly bring them into this online marketing model, either partially or completely. There is a change

for these sectors to keep their previous power balance, but the most probable scenario is that there will be a transition of power, either partially or totally, to these few digital big techs. In the same way as the users are giving up their data privacy for an immediate comfort via the Apps, there is a chance for the companies to lose their power, at least on the power of data management, when they transition into digitalised solutions. However, this risk will not stop the companies to go ahead, in their need to pursue steadily growing benefits, as requested by the markets. And the global digital transition that is taking place will therefore continue for every stakeholder in the business world: companies, users and tech companies.

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