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**The Launch of a New Product:
from the NPD Models to the Luxury World
with the Ferrari S.p.A. Business Case**

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*'A mio Nonno,
mio padrino e forza dal cielo'*

Index

| | |
|--|----|
| <i>Abstract</i> | 6 |
| <i>Introduction</i> | 7 |
| <i>Chapter 1 - Literature Analysis: the New Product Development Models</i> | 12 |
| 1.1 - Evolution of the NPD Models..... | 13 |
| 1.1.1 - The Stage-Gate and Activity-Based Models | 14 |
| 1.1.2 - The Simultaneous/Overlapping Stage Models and the Spiral Development Processes.. | 17 |
| 1.1.3 – The Interactive or Network Models..... | 19 |
| 1.2 – The most important Stage-Based Models | 22 |
| 1.3 - The Booz, Allen and Hamilton NPD Model..... | 26 |
| 1.3.1 - Stage 1: New Product Strategy (NPS)..... | 26 |
| 1.3.2 - Stage 2: Idea Generation | 27 |
| 1.3.3 - Stage 3: Screening and Evaluation..... | 28 |
| 1.3.4 - Stage 4: Business Analysis..... | 28 |
| 1.3.5 - Stage 5: Design and Development | 29 |
| 1.3.6 - Stage 6: Testing | 30 |
| 1.3.7 - Stage 7: Commercialization | 30 |
| 1.4 – The revised BAH Model | 31 |
| 1.5 – The risks of the NPD Models | 33 |
| <i>Chapter 2 - How to launch a new product in the today's world</i> | 35 |
| 2.1 - Stage 1: New Product Strategy (NPS) | 36 |
| 2.2 - Stage 2: Idea Generation | 38 |
| 2.2.1 - Stage 2: Idea Generation - Opportunity identification | 39 |
| 2.2.2 - Focus: Idea Generation techniques..... | 40 |
| 2.3 - Stage 3: Screening and Evaluation..... | 42 |
| 2.4 - Stage 4: Business Analysis | 44 |
| 2.4.1 - Stage 4: Business Analysis – Focus on economic evaluations | 45 |
| 2.4.2 - Stage 4: Business Analysis – Focus on financial evaluations | 47 |
| 2.5 - Stage 5: Design and Development | 49 |
| 2.5.1 - Focus: Conjoint Analysis | 52 |
| 2.6 - Stage 6: Testing..... | 55 |
| 2.6.1 - Stage 6: Pre-test Market | 58 |
| 2.7 - Stage 7: Commercialization | 59 |
| 2.8 - The Adoption Process | 62 |

| | |
|--|-----|
| 2.9 - Key factors to product effectiveness | 64 |
| 2.10 - Product Lifecycle | 65 |
| <i>Chapter 3 - How to launch a new product in the luxury industry</i> | 69 |
| 3.1 – The luxury world | 70 |
| 3.1.1 – Stage 1: NPS through the Balance Scorecard (BSC) | 72 |
| 3.1.2 – Stage 2: Idea Generation | 74 |
| 3.1.3 – Stage 3: Screening and Evaluation | 77 |
| 3.1.4 – Stage 4: Concept Development and Testing - the Unique Selling Proposition (USP)..... | 80 |
| 3.1.5 – Stage 5: Business Analysis through DSS (Decision Support System)..... | 83 |
| 3.1.6 – Stage 6: Design and Development according to the VRIO Model | 86 |
| 3.1.6.1 – Stage 6: Focus on The House of Quality (HOQ)..... | 89 |
| 3.1.7 – Stage 7: Testing the marketing mix..... | 91 |
| 3.1.8 – Stage 8: Commercialization | 94 |
| 3.4 – The Product Lifecycle in the luxury industry..... | 96 |
| <i>Chapter 4 – How to launch a new product in the luxury automotive industry: the Ferrari S.p.A.</i> | |
| <i>Business Case</i> | 99 |
| 4.1 - The automotive industry | 101 |
| 4.2 - The luxury automotive industry | 105 |
| 4.3 - Ferrari S.p.A..... | 108 |
| 4.3.1 - Premise | 110 |
| 4.3.2 - The core dimensions exploited by the Prancing Horse | 112 |
| 4.3.3 - The evolution of the process | 117 |
| 4.3.4 – Financial and economic considerations of the process..... | 123 |
| 4.4 - A real case: the Ferrari’s 488 Family..... | 126 |
| 4.5 - The winning elements of Ferrari S.p.A..... | 131 |
| <i>Conclusions</i> | 134 |
| <i>Bibliography</i> | 142 |
| <i>Sitography</i> | 145 |
| <i>Acknowledgments</i> | 149 |

Abstract

This thesis focuses on the launch of a new product in multiple contexts, by assuming a funnel structure that starts from a wider view and it ends on a very specific reality.

The introduction summarizes the most relevant factors capable to highlight the importance of the main topic: social and historical evolution, together with macroeconomic evaluations, provide support in order to understand why the launch of a new product is a daily critical matter.

The first chapter discusses the literature review of the thesis: by starting from the NPD models depicted during the last 50 years, the focus shifts from the evolutions of these processes to the identification of one ‘universal’ approach: the Booz, Allen and Hamilton (BAH) model.

The second chapter is dedicated to the BAH process just identified: it explains why this model may be suitable in the mass-industry, not taking into account differences arising by the nature of the sector or specific companies.

The third chapter shifts the focus towards a more specific context: the luxury industry. A rapid overview helps to understand the dynamics of this particular world, before to investigate the process of development of a new product by re-adapting the same BAH model, which assumes an higher degree of detail and analysis.

The fourth chapter reveals the fulcrum of the thesis: thanks to the internship experienced by the candidate in the company Ferrari S.p.A., the main topic is now discussed by highlighting the huge reality of this enterprise which dominates the luxury automotive segment. Differently from both the BAH model and other specific engineering approaches mentioned in the same chapter, in this part it will be underlined the real process the company daily faces: both examples and the real case of the 488 Family will support the discussion.

Finally, the conclusions will reply to the research questions exposed at the beginning of the thesis: at the same time, critical factors of the nowadays reality will be highlighted, together with the winning elements the company Ferrari S.p.A. daily exploits.

Introduction

The launch of a new product has always been a critical matter in the whole business environment. Unlimited reasons of financial nature or strategic and competitive perspectives are behind firms' decisions to introduce a new innovation. Especially in the unpredictable nowadays reality, what is better known as NPD (New Product Development) is becoming more and more relevant.

Today's world is dramatically different from the past: globalization, combined with other infinitive factors, is responsible of the economical exponential growth capable to impact even on the NPD. In the past, reasons to launch a new product mostly focused on fulfilment of customers' needs in order to increase their satisfaction: today, consumers' happiness is a simple pre-requisite to activate the NPD model.

Generally, these processes are pushed by decisions focusing on the following dimensions:

- Market: company launches a new product to react competitors' moves in order to defend own market share or erode rivals' position, to conquer leadership of the market or to increase profitability and recognition;
- Demand: firm introduces a new product because customers show new unfilled needs or fields to improve. Even in case of abundancy, managers might decide to propose an innovation to strategically anticipate future wants or create potential wishes;
- Supply: company understands that an innovation might direct to internal economic advantages thanks to the entrance of new competitive providers. Raw materials are purchased at more convenient conditions and production efficiency increases;
- Environment: management exploits the birth of new technologies to introduce an innovation, obtaining both production efficiency and processes improvements. External environmental conditions such as new laws or economic cycles might be both opportunities or limits to the development.

As the motivations to launch a new product increased, the entire development process evolved: studies, methods and techniques further discussed have the goal to support any phase where the four aforementioned dimensions play a decisive role. Indeed, they reflect the main actors of the NPD process, respectively: competitors, customers, suppliers and technology.

Unfortunately, today these dimensions are necessary conditions to examine but not sufficient in the attempt to successfully launch a new product. The actual business world is surrounded by lots of mysteries: researchers, managers and even marketing's fathers such as Philip Kotler, Al Ries or

Jack Trout gave important contributions to define some guidelines or best practises but, at the end, no mathematical principles or universal laws emerged.

Practically, common (and unsolvable) questions might be:

- Why any new product doesn't gain the same success of the first iPhone or a Ferrari?
- Why some past innovations are still sold and appreciated, while others old products have already disappeared?
- Why there are products that supported by expensive marketing campaigns fail, while others easily penetrate into the market (almost) without money?
- Generally, is it easy for a new product to survive? How long it lasts its lifecycle?

Theoretically, from a pure economic perspective, some logic answers, respectively, might be:

- The first iPhone was a radical innovation and Ferrari has a strong brand positioning behind;
- Companies which offered historical products continued to massive invest in their projects, while others decided to stop own economic efforts moving out from the market;
- Costly marketing campaign doesn't guarantee success, while a coordinated digital plan might conduct to higher results;
- Survival of new products greatly depend on the management and company behind, while lifecycle depends on industry's speed.

Clearly, because no mathematical rules around this fundamental subject were revealed, through the crude reality and true business cases, it's easy to negate those logic answers provided above.

Respectively:

- ❖ Innovation is not synonym of successful introduction: the 'Dvorak' keyboard was a radical innovation as well the first iPhone or a Ferrari, with high improvement in terms of performance. Shortly, the writer would have composed a text faster than using the common 'Qwerty' keyboard: unfortunately, just because of its radical impact, the invention was too complicated for the users. Someone might discuss about the brand's importance behind the innovation as a driver to success, but thinking about Coca Cola another negative case arises: when the American company decided to launch its new nail varnish, the project poorly failed because of, again, its controversial nature;
- ❖ Continuous investments don't guarantee success: IBM has always been pioneer of the computer industry, by offering lots of services and devices. But nevertheless continuous investments, there are almost no segments in which, today, its products are leaders. From the other side, looking at different R&D's investments rankings, Apple occupies last positions,

resulting a company that doesn't invest as the competitors: by the way, yearly, its products continue to be sold more than the rivals;

- ❖ Costly marketing campaign is a double-edged blade: often it brings to successful results, other times it conducts to failure. Xerox spent 25 billion dollars to enter in the computer industry and, after some years, decided to abandon it: as result, anyone understood its efforts and Xerox is considered still today in the consumers' minds as the historical photocopier;
- ❖ Management experience and company's history are not enough where there is no comprehension of the market, able to modify each rule, lifecycle included. In the 1980's, Coca Cola decided to launch a new product: the so-called "New Coke". Considering the one billion dollars of free advertising received, plus the hundred millions dollars spent by the company to launch the brand, the new product had to be the most successful innovation in the world. Just 60 days later (definitely not the predicted lifecycle) the New-Coke was retired from the market. Coca-Cola understood its complete misunderstanding of the market: no new need emerged and the existent product was already the right one. Finally, the company re-introduced the original formula ("Coca-Cola Classic") and it sold 15 times more than the "New Coke".

These business examples have the goal to offer a rapid overview of what can be considered a 'field without rules'. No money or brand or managerial teams can survive in whatever condition: all these factors critically arise probabilities of success, but no mathematical results can be ensured a priori.

Unpredictability is the common unknown, but it is not the only variable to change. The entire channel of communication, crucial at any stage of the NPD process, lived a revolution in the last decades: senders¹ increased exponentially through the emergence of concrete possibilities to open up a new business, such as crowdfunding, EU and extra-EU projects, partnerships, joint-ventures, etc.; receivers² became more and more exigent and difficult to reach: in the past they shyly asked simple requests, today they pretend complex products at their conditions. Moreover, they don't have time and attention to understand all the senders' messages and efforts, and it complicates a lot the communication effectivity; channels³ are overload of information: according to the data published by the *Reuters Guide to Good Information Strategy*⁴, at its birth Internet was accessible only at 70 million of new users. Today, Internet reaches the same amount of new users every 81 days. Moreover, from its birth on 1997, the quantity of information available on the web, in just 30 years,

¹ Senders refer to every business actor who sends a message to the receivers: there are no distinctions among enterprises of each dimension (companies, start-ups, ...) or social right (S.p.A, srl, ...) and autonomous entrepreneur or own businesses.

² Customers, consumers, users and, generally, all those people in the market to which the message is directed.

³ Media, magazine, journal and especially Internet and social media. All those tools used to filter and diffuse the information that the senders communicate to the receivers.

⁴ According to data published by Jane Bird, 1997.

is higher than the total produced during the last five thousand. Separate mention to the social media that today are playing a crucial role. On 2017, Marco De Veglia, in his book⁵, offers interesting examples by investigating what happened on the online environment in just three seconds:

- ✓ 3 new blogs are open and 75 new blogs' articles are written;
- ✓ 8,5 million of emails are sent;
- ✓ 30 new videos are published in YouTube;
- ✓ 35.000 new status and 25.000 comments on Facebook are published.

This growth might seem a great advantage for the NPD process to accelerate the introduction, instead it generates dangerous counter-effects: from the senders' side the competition increases exponentially, from the receivers' point of view there is more and more confusion because of the amount of information received. Moreover, because subjectivity and perceptions make different a receiver from another, positive or negative feedback towards the same new product are sent to the company that finds difficulties on extracting coherent and truthful data.

Due to the evolution of the entire flow of communication described above, today the NPD process is very challenging: as the four crucial dimensions⁶ surrounding the launch of a new product changed, the rate of failure dramatically increased. Always the development of an innovation begins with an original idea: Booz, Allen & Hamilton affirmed that, for every seven new product ideas, only one succeeds; Griffin reveals a more pessimistic proportion, saying that in order to have at least 15.2 winning projects, there should be generated an average of 100 ideas; others researches show worse scenarios, by indicating only one winner on a funnel of hundred ideas. Again, no universal laws exist results change depending on the variables introduced: clearly, different industries have different percentages of failure.

By the way, nevertheless these negative evidences, NPD's efforts are continuing to increase: as will be discussed in the first chapter dedicated to the literature analysis, many researchers developed models able to support any stage of the process. At the same time, tools, methods and techniques are constantly implemented to gather any type of data, CSF (Critical Success Factors) are examined to maximize the understanding of any single phase and metrics are continuously tracked to measure both impacts generated and progress achieved.

Always NPD models have been fundamental and discussed topics in the literature. First hints arose on 1950s thanks to the contribution of forerunners like Conway and Steward, who drafted the primordial 'first generation' processes: the so-called departmental stage models. Researches,

⁵ Title: 'Zero concorrenti: come usare il brand positioning per differenziarti e farti cercare dai clienti'

⁶ Competitors, customers, suppliers and technology

discoveries and especially critics were fundamental to highlight weaknesses of these raw models, decisive to successively evolve towards more powerful approaches. Lack of internal cooperation and coordination formed the basis to shift from departmental processes to the activity stage models. Several authors specified the importance of mutual contribution and collection of initial feedbacks: however, these additions were considered simple improvements and further renovations were required.

Evolution of the activity approaches conducted towards the decision stage models: these processes opened up to possible variants and go/kill decisions were peculiarly examined in order to move on the following stage or, differently, to block the entire process. At the same time, models evolved by adding many other steps to the basic structure: one of the most important was the focus on strategy and objectives to pursue, that with Booz *et al.* appeared in the 1980 at the very beginning of the model, together with checks and revisions that, subsequently, were placed at the end of the process.

Later, new critics focusing on time inefficiency, slow processes and lack of interactions with the external environment pushed authors to ideate and formalize more complex models based on overlapping⁷ and networks⁸ and sharing: these processes opened up to new opportunities and possibilities, further discussed. Among the models provided by both textbooks and other references⁹, a critical selection is advanced in order to provide the concrete base on which to build the subsequent work.

Finally, a wider view is integrated by focusing on the specific engineering literature, in order to reinforce the coherence between the main topic of the thesis and its most interesting object of analysis: the Italian luxury automotive company Ferrari S.p.A.

Last but not least, it's important to underline the general economic impact that the development and launch of a new product may generate on fields not directly linked with private businesses. Indeed, the entire economy benefits from the launch of new products. Simply looking at the Keynesian perspective, the introduction of new technologies heavily stimulate investment opportunities that increase his famous equation formed by output, income and employment. NPD is then capable to create employment, to speed up applied and pure research, to stimulate technological evolution, to incentive economic growth and to improve standards of life.

⁷ Chapter 1, paragraph 1.1.2

⁸ Chapter 1, paragraph 1.1.3

⁹ JPIM (Journal of Product Innovation Management)

Chapter 1 - Literature Analysis: the New Product Development Models

This section provides an overview of the key topic of new product development (NPD) model, main pillar of the present thesis. The first part touches upon the history of primordial and basic models previously adopted to develop new products; the second part focuses on precise and more recent models that will form the solid basis of this work.

At the end, the thesis should provide answers to the following research questions, object of discussion of the entire work:

- Does exist universal guidelines to develop and launch a powerful new product?

First question discusses the possibility of finding a common NPD model among the multitude of processes developed along the history and illustrated in this first chapter. Incongruences emerge due to the nature of the industry and the strategy pursued by any company. In this thesis, the Booz, Allen and Hamilton NPD model, developed and revised in the 1980s, is considered the most addicted to the topics further debated. The authors were forerunner in understanding the pivotal role played by the formulation of a clear strategy at the very beginning of the process. Moreover, in the last chapters, the subsequent revision of the BAH model with the addition of the concept stage was a decisive improvement in order to match the massive industry discussed in the second chapter, with the particular luxury world, object of analysis of the third.

- How the BAH model may be considered suitable even in the luxury industry?

There are several factors that differentiate an industry from another: nature of the sector, market reference, target audience, product type, degree of innovation, kind of technology, level of competition, etc. In this varied context it is not easy to find a common NPD model, especially when emerging differences are relevant as in the comparison between the mass-market and the luxury world. However, the BAH model already discussed in the second chapter and protagonist of the general thesis, in its further revision of 1982 was empowered of a new additional phase capable to make it suitable to this specific sector: the concept generation. As it will be debated in the third chapter, luxury goods focus on intangible aspects rather than tangible features: the superfluous nature of these products is a critical characteristic that is powerful communicated just through the realization of meaningful concepts elaborated in the fourth stage of the revised BAH model.

- Why the BAH model may be adopted also in the engineering industry by revealing more effective than specific engineering models?

In the last chapter the focus shifts towards a specific context: the luxury automotive segment. Due to the nature of the industry, some NPD models with a more engineering perspective might be more addicted than others. However, a full technical focus may cause important economic and financial gaps: as discussed along the thesis, a complete orientation towards the engineering world may generate a very powerful but complicated product. Moreover, very frequently engineers don't take into account important financial requirements that are relevant constraints for marketers. For these reasons the already mentioned BAH model, capable to resume both critical perspectives, results very effective even in huge and complex companies like the one further examined in the last chapter: Ferrari S.p.A..

1.1 - Evolution of the NPD Models

On 1976 Schelker suggested that, if all the variations of models and methods were considered, over 600 could be identified (*Nijessen & Lieshout, 1995*). Daily, this figure increases due to the growth of the NPD literature. Primitive concrete references to new product development models appeared in the 1950s: during that period, processes were really simple and initial contrasts among number of steps and degree of affordance to consider during the execution.

Throughout the history, beyond slight discrepancies arising among different processes, general and common phases shared by these typologies of NPD models are:

- 1) Idea Generation: this first stage mainly includes gaps and opportunities identification, customer unmet needs investigation, market researches and analysis, examination of competition and evaluation of external variables;
- 2) Idea Screening: second common phase conducts to a critical selection among the opportunity and inputs identified, in order to highlight the most promising ones that will be finally translated into physical products;
- 3) Business Analysis: alignment and coherence with financial and economic parameters is mandatory to ensure the business from bankruptcy and reduce chances of failure in case the new products will not achieve the performances estimated;
- 4) Product Development: raw prototype are realized in order to concretely evaluate the selected ideas. Designing, development time, involvement of external parties and production organization are all aspects continuously evaluated and monitored at this stage;

- 5) Testing: trials and tests are carried out in order to measure raw results and collect initial feedbacks from the market. Marketing plans should heavily support this phase that is responsible of the upcoming introduction;
- 6) Launch: the last category focuses on the specific period or occasion to finally introduce the new product. It includes all the activities carried out to constantly monitor and support the phases post-launch to verify the alignment with pre-fixed objectives and forecasted results.

Generally, the greatest majority of models diffused may be summarized into these three macro categories, further discussed:

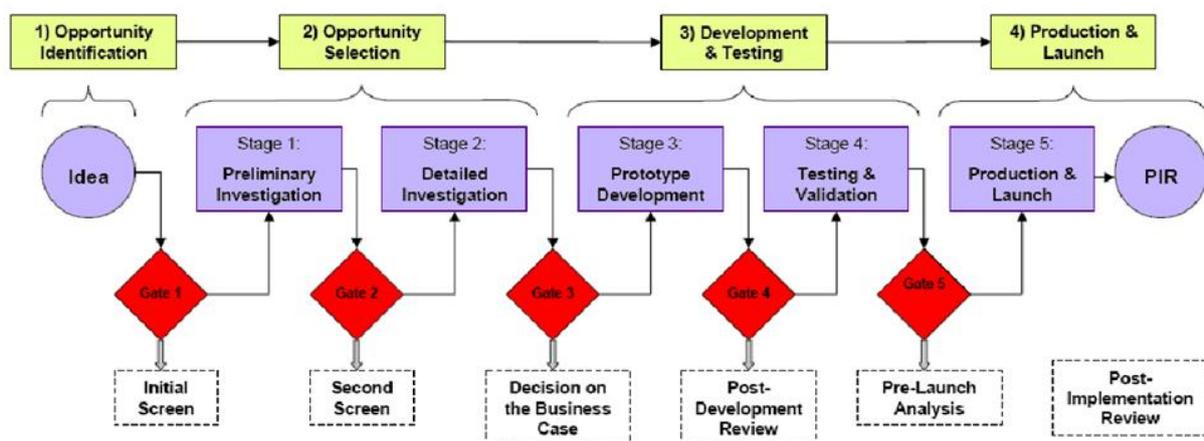
- Stage-Gate Models and Activity-Based Models;
- Simultaneous or Overlapping Stage Models and Spiral Development Models
- External and Network interactions Stage-Models

1.1.1 - The Stage-Gate and Activity-Based Models

The majority of researches and studies focus on this kind of models: improvements along the decades were implemented and nowadays these processes are the most adopted and diffused to effectively launch a new product.

Historically, both stage-gate and activity-based models follow a sequential path that conducts from one phase to the following: in 1994 Cooper, supported by Kleinschmidt, carried out important studies and finally introduced the critical and revolutionary concept of “Gate” in their primordial models (Exhibit 1.1¹⁰).

(Exhibit 1.1) - The Stage-Gate Model (*Cooper, 1994*)



Robert G. Cooper, 1993

¹⁰ Personal source

Along four-key dimensions¹¹, the NPD Stage-Gate Model evolves step by step through the acceptance of any gate: the idea comes from a preliminary investigation that is subsequently deepened and evaluated, until concrete raw prototypes are developed in order to formulate valid proposal to test. Once any challenging gate is passed, before the introduction several analysis pre-launch are conducted to support the next stages. The NPD process ends with careful monitoring of eventual discrepancies from pre-fixed objectives.

Step forward about the primordial Stage-Gate Model moved from independent departments to strong multi-functional coordination. In the following years, the same Cooper improved its Stage-Gate Model by implementing four relevant “*Fs*” capable to speed up the entire process.

- *Flexibility* was the primary addition implemented in the process to adapt the model to the elaborated project and its respective level of risk;
- *Fluidity* was the second factor that should pervade the whole flow to facilitate eventual overlap among the stages;
- *Focus* assigns the right allocation and evaluation of projects to support future decisions;
- *Fuzzy gates* is the last aspect introduced by Cooper to accept even conditional decisions (rather than absolute choices) in order to accede to the next stage.

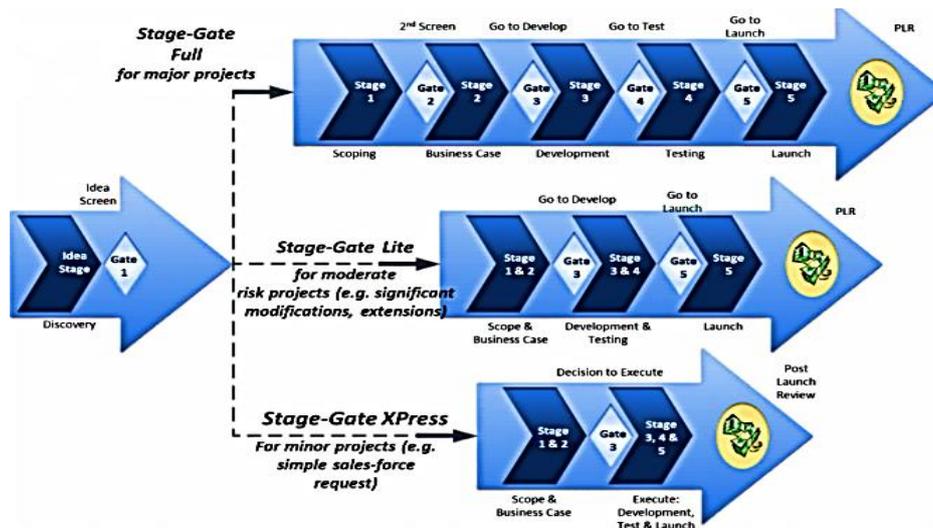
Cooper proposed some variants taking into account the implementation of these *Fs*: however, if from one side these improvements speed up the process efficiency, from the other they complex the model and its feasibility. In the figure below (Exhibit 1.2¹²) the author proposes two versions beyond the traditional one described above:

- a. The Stage-Gate Lite model, applicable for moderate risk projects such as line extension or considerable modifications. It exploits the *fluid* requirement to allow overlapping between following stages before to move to gate evaluation;
- b. The Stage-Gate Xpress model, adopted to minor changes or projects with lower impact on the general company’s business. It is more addressable to marketing activities or salesforce requests.

¹¹ Opportunity Identification, Opportunity Selection, Development & Testing, Production & Launch

¹² Personal source

(Exhibit 1.2) – The Stage-Gate Lite & The Stage-Gate Xpress Models (Cooper, 1995)



However, although the improvements proposed by Cooper, its model was object of severe critics: Dosi *et al* on 2005 and Balcani on 2010 pointed out that Stage-Gate Models were not able to reflect the reality, supporting Jewson who in 1991 sustained that there is no unique definitive NPD process. Critics focused on the huge risk to oversimplify the process due to illogic overlap in order to save money and speed up the production. Moreover, the sequential approach is generally seen as slow and commonly considered a dramatic weakness because of the frequent waits and lack of coordination. Furthermore, decisions are more directed to move on the next stage than to focus on a global vision towards the process or the company’s objectives. This last point is connected to initial critics carried out by Van Der Ven (1988) who highlighted the lack of an holistic approach. Finally, bureaucracy may lead the model to slower and slower performances, especially when the company is planning to develop a very complex product.

Generally, Cooper’s Stage-Gate Model is based on a screening process: on 2008, Trott renamed this approach as the “*Development Funnel*”, one of the most diffused definition in the nowadays reality. Today the evolution of this model is still going on, due to its frequent usage on industries, among the others, like automotive and aerospace (Ettie and Elsenhach, 2007; Baback and Holmes, 1999). To the purpose of this thesis, these models will be peculiarly considered and further examined: beyond the critics received, these processes evolved more and more by refining own weaknesses to reinforce the basic structure. Thanks to accurate implementations and additions, today these models are the most effective to develop and launch powerful innovations.

1.1.2 - The Simultaneous/Overlapping Stage Models and the Spiral Development Processes

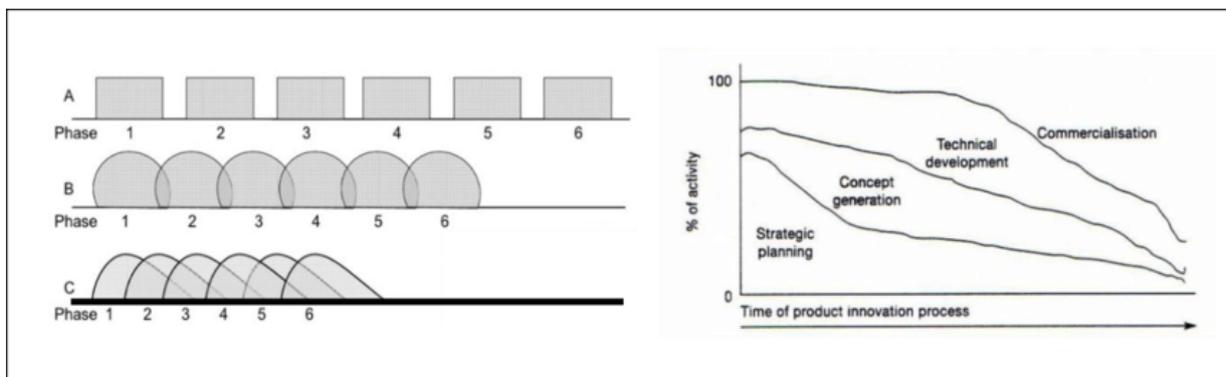
Severe critics to Stage Gate Models principally focused on its linearity. The same Cooper catch problems arising from the sequential approach its aforementioned *Flexible* variant was an attempt to shorten the development time and speed up the entire NPD process.

Steps forward saw the introduction of models distinguished by simultaneous and overlapping nature. In general, the literature underlines two categories capable to resume the evolution faced by these processes: the former emphasizes the concurrent nature of stages, the latter breaks the future new product down and links the requested activities to develop it.

These initial modifications conducted to significant improvements and evolutions of the two main aforementioned categories: about the former, the most significant contributions were offered by the so-called “*Activity-Stage Models*” and “*Spiral Models*”, dominant between the end of the past century and the beginning of the new one. Recognized as really capable to incorporate the overlapping nature of the emerging models, these models became more and more frequent in the business world.

About the first typology, on 1997, Crawford proposed its process (Exhibit 1.3¹³), as follows.

(Exhibit 1.3) – Activity-Stage Model (Crawford, 1997)



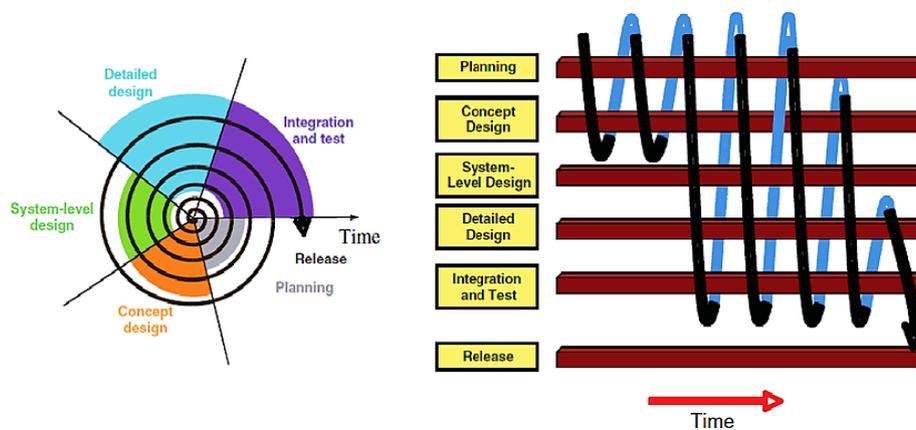
On the left side it is represented the main critics to the Stage-Gate Model: the sequentially (A). Phase B evolves towards a more overlapped but still sequential approach. Finally, through phase C, an higher level of simultaneously is achieved and the entire process might be faster. On the right side there is the Crawford’s view: his model identifies four activities occurring concurrently with diverse degree of importance determined by the project carried out. It is a full-overlapping approach, and this is the main topic faced by the author: according to the new product to develop,

¹³ Personal source

some activity may be more relevant than another, however the simultaneous nature completely pervades the model.

The other great contribution falling into the first category of concurrent stages is offered by the famous “*Spiral Models*”. These processes evolved especially during the years antecedent the crisis: on 2006, Mac Gregor *et al* drafted primordial spiralling processes by focusing at the centre projects carried out through iterative activities. However, more effective results arrived in the following years thanks to the studied carried out by Unger and Eppinger: authors proposed several evolutions of the model represented below (Exhibit 1.4¹⁴) in its version released on 2010.

(Exhibit 1.4) – Spiral Product Development Process (*Unger & Eppinger, 2010*)



Key benefits of both spiral and simultaneous models were not only limited to the overlapping: indeed, exchanges between departments and especially cross-functional nature of the process let these processes evolve more and more to finally become some of the most diffused and adopted, especially in the computer and software industries.

About the latter category consisting on breaking down the future new product and analysing its peculiarity, other representations emerged. Always based on concurrent activities, even if not completely focused on overlapping, Smith and Eppinger’s “*Design Structure Matrix*” (Exhibit 1.5) was a powerful model spread and adopted in many industries.

¹⁴ Personal source

(Exhibit 1.5): Design Structure Matrix (*Smith and Eppinger, 1997*)

| | A | B1 | B2 | B3 | B4 | C | D |
|-----------------|-----|-----|-----|-----|-----|-----|-----|
| System Design A | (X) | | | | | | |
| Component 1 B1 | X | (X) | X | X | | | |
| Component 2 B2 | X | X | (X) | X | X | | |
| Component 3 B3 | X | X | | (X) | | | |
| Component 4 B4 | X | X | | X | (X) | | |
| Prototype C | | X | X | X | X | (X) | |
| Testing D | | | | | | X | (X) |

On 1997, the authors realized this matrix able to highlight the modular nature of the NPD: the model considers the relations among technical parameters and it is based on a structure with specific task required to create any component of the future new product. Specifically, any individual component is analysed to understand its precise role in the activities carried out and its final adaptation in the entire system design. The structure is peculiarly analysed by taking into account all the phases of the development, from the basic configuration to the physical tests: this more technical approach was particularly appreciated in engineering and electric industries.

However, the same Cooper, on 2008, was a visionary by understanding not only the importance of simultaneous and iterative activities, but going even deeper: by noticing the absence of external feedbacks, especially coming from customers, he developed its Spiral Development that opened up to the third category, further discussed.

1.1.3 – The Interactive or Network Models

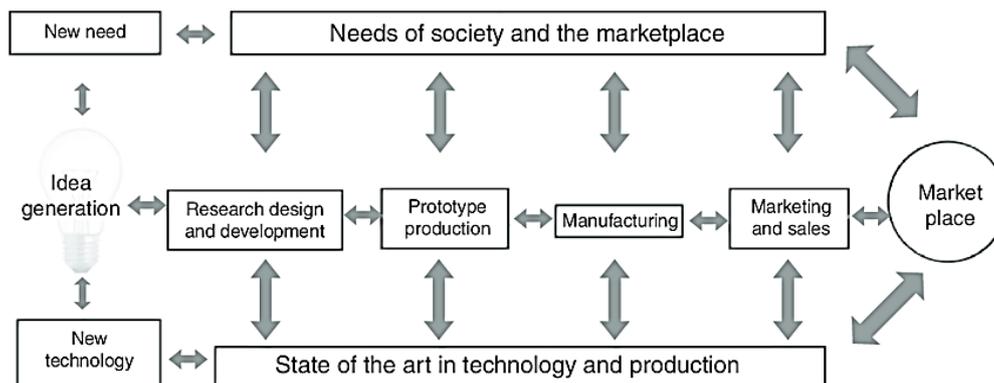
Overlapping and simultaneous models presented step forward in order to increase process efficiency and results. However, heavy critics against these approaches were focused especially on the lack of interactions with the context outside in which the company is more and more immersed.

Solutions arose by the successive and last category of the NPD literature: the network models. Customers’ feedbacks and external inputs result fundamental as the business and the market grow: these framework allows to absorb all these information through complex flows of communication between the internal functions and the public audience. Rothwell, in its *interactive or coupling model of innovation* (Exhibit 1.6¹⁵), resumes the importance of the external environment by proposing a model that constantly interact towards any direction: needs of society and the

¹⁵https://www.google.com/search?q=rothwell+the+interactive+model&rlz=1C1GCEU_itIT843IT843&source=lnms&tbm=isch&sa=X&ved=0ahUKEwjCrN_OtLHiAhUHsKOKHU0kBAQ_AUIDigB&biw=1600&bih=1089#imgdii=9-Jgar2ffchW3M:&imgsrc=CiFVWIqZsCJkwM;

marketplace are constantly monitored after to be decisive to ideate new ideas, at the same time technology evolution is peculiarly examined to eventually implement eventual innovation is the process. Moreover, this process evolves though a bi-directional internal flow, by allowing to move on and back from one stage to the following or precedent.

(Exhibit 1.6) – The Interactive or coupling model of innovation (*Rothwell*, reproduced from Conway and Steward, 2008)

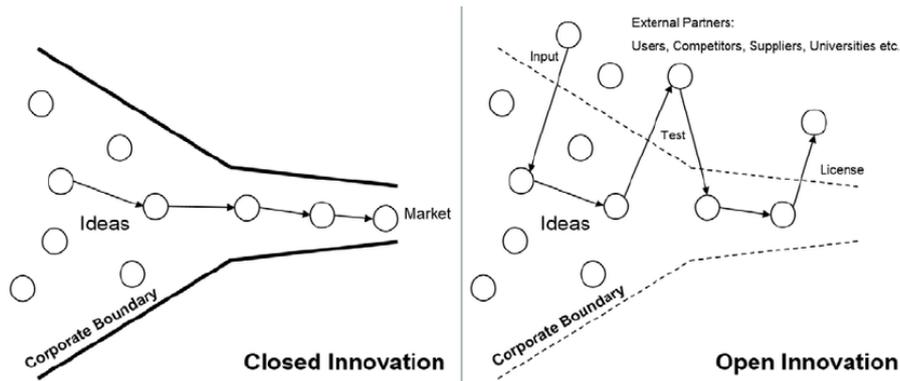


Rothwell interactive model was a breakthrough that inspired other authors: Kline proposed its *Chain Link* model that underlined the importance of the external science and research, always maintaining strong interaction and feedback loops.

In general, Rothwell’s model opened up to the most decisive step forward of this period: the evolution from the closed innovation to the open one, both represented in the figure below (Exhibit 1.7¹⁶) that shows a double Trott’s *Development Funnel*. On the left side the company is completely closed into its corporate boundaries and it completely excludes inputs and feedbacks coming outside. On the right side the external environment has a strong impact in all the stages of the NPD process: corporate boundary appears more flexible, graphically represented by dashed lines capable to extend the connection between the company and its external partners such as competitors, suppliers, users, universities...

¹⁶https://www.google.com/search?q=rothwell+the+interactive+model&rlz=1C1GCEU_itIT843IT843&source=lnms&tbm=isch&sa=X&ved=0ahUKEwjCrN_OtLHiAhUHsKOKHU0kBAQ_AUIDigB&biw=1600&bih=1089#imgdii=T3ETjounJ0zxFM:&imgcr=X69sLKKwvBUJM:

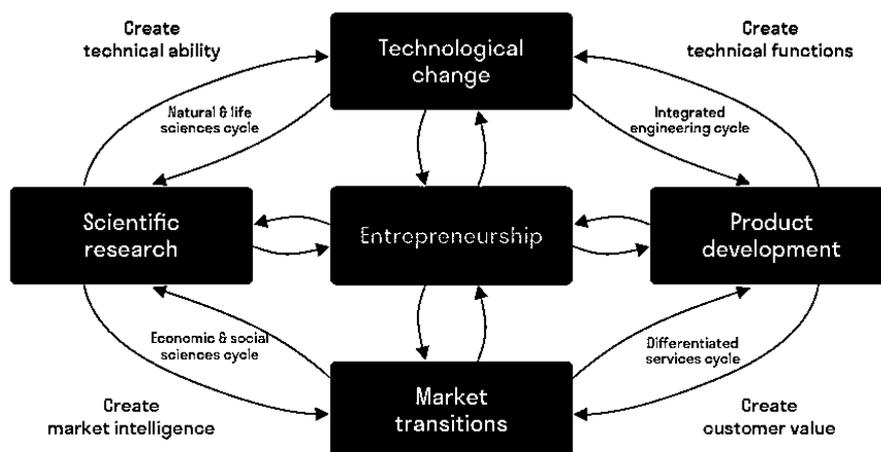
(Exhibit 1.7) – The Closed and Open Innovation (reference to *Trott, 2008*)



Based on a wider open innovation vision, network models evolved and diffused more and more: companies applied modifications to own stages in order to improve the internal/external communication flow. Moreover, not only it includes external perspectives, but it also reinforces the interconnection between stages: Rothwell’s model diffused the possibility to reciprocally support different temporal stages to repair eventual weaknesses or limitations.

The specific focus on external environments allow networks model to catch other aspects, especially directed towards product’s receivers. Today’s concept like added value, customer satisfaction, differentiation and some primordial forms of positioning appeared yet in the last decade, when newest models were not only able to powerful connect the main stage among themselves, but even to exploit own principle benefits. In 2011, Berkhout, Harmann and Trott created the Cyclical Innovation Model (CIM, Exhibit 1.8): according to the authors, the CIM is generated by a circle of changes. Horizontally, the model faces, on the left scientific research and on the right industry variations; vertically, the process detects at the top changes in technology, while at the bottom market evolutions.

(Exhibit 1.8) – The Cyclical Innovation Model (*A.J. Berkhout, Harmann & Trott, 2011*)



As shown in the figure, any interaction between stages involved is able to produce different results: for example, technological change may improve human's skills from scientific side, while it develops new function on future product perspective. A key aspect is revealed by the interaction between market and product development: as anticipated, customer value is a concept introduced during these years and spread worldwide nowadays due to its importance and diffusion of customer-centric approaches.

Generally, the open innovation arena aforementioned above is characterized by a "*circle of change*" perfectly represented by Unger and Eppinger in the Cyclical Innovation Model. Product design and manufacturing, scientific insights, technological capabilities and market evolution are the key variables to mark the clear difference between these processes and the traditional ones evolving sequentially. All these changes are interconnected among them and especially with the main newness of this model: the entrepreneur. In this sense, Berkhout was a visionary to finally insert the figure of the responsible of the company, by including in this category even the top management for the larger enterprises: the author recalled a Schumpeterian belief, who historically recognized the company's success as dependent on its entrepreneur (1934).

1.2 – The most important Stage-Based Models

In the historical evolution of the NPD processes the dominant role is played by the Stage-Based Models: across the years, many authors proposed own version about what is considered the most relevant category. Differences arise especially in terms of stages and steps to follow: activities, requirements, typology of new product, reference industry and target audience are responsible of some discrepancies among the most recognized Stage-Based Models.

The importance of these NPD processes is underlined by many authors thanks to its great impact towards any business direction: for managers, these models assist portfolio planning and risk management, aiding the allocation of resources to the right projects at the right time (Oorschot et al., 2010; Cooper, 2008; Cooper et al, 2001). For organizations, their adoption can be beneficial, as in many cases, managers have little confidence in their ability to effectively manage NPD (O'Marah, 2004; cited in Koudal and Coleman, 2005). Finally, utilising these models can help avoid the omission of critical activities from the process, which is not uncommon (Cooper & Kleinschmidt, 2000).

Both textbooks and literature offer infinite NPD processes aimed to develop and launch new powerful product. The most influential NPD Stage-Based models, by looking back at the recent forty years, come from two different main sources¹⁷:

- 1) Journal of Product Innovation Management (JPIM): interdisciplinary journal that advances theoretical and managerial knowledge of innovation management and product development. It includes articles of authors across diverse perspectives and disciplines and it refers to any typology from quantitative to qualitative nature. Methods are focused on enterprises of any size, from start-ups to large businesses. The most diffused and known Stage-Based models published in the JPIM are represented in the table below (Table 1.1). Cooper proposed his model on 1994, later revised in 1998, 2001 and 2008: the evolution from the initial version consisted on a deeper screening process aimed to select only decisive ideas. As discussed above, Cooper was really sensitive about the conversion of promising ideas into powerful products, then he concluded his proposal by inserting two full dedicated phases to correctly select. Moreover, in the last version of 2008, the author introduced the go/kill decisions in order to eventually block a project once it is not compliant with all the requirements. In 1997, Griffin published his model: together with Barczak *et al.*'s model, he catch the importance of the business analysis stage to measure and estimate the feasibility of the project. Griffin's model is one of the most frequently mentioned in the JPIM, even cited by Durisin *et al* in 2010: his process is applicable especially in primarily manufactures goods industries¹⁸. Song & Montoya-Weiss model, on 1998, is one of the most used in the American high technologies industries due to its technicity and typology of tests conducted to finally commercialize the new product. It is one of the smartest model thanks to the initial consideration of a strategic planning aimed to lead the entire process. Finally, Barczak *et al.* model is applicable both in the fast moving consumer goods (FMCG) industry and high/mix/low tech firms. Specificity of this recent model is the very last phase post-commercialization: the so-called "success" phase should not simply measure the results obtained after the new product is introduced, but it aims to boost the innovation and support its diffusion.

¹⁷ Models adapted from Francis' (2008) and Eveleen's (2010) papers. Other sources: Journal of Product Innovation Management (JPIM)

¹⁸ According to the article on JPIM, the model is applicable at 35% high tech, 35% mixed and 30% low tech

(Table 1.1) – NPD Stage-Based Models published in the JPIM (*Journal of Product Innovation Management*, 1994 – 2009)

| <i>Cooper (1994)</i> | <i>Griffin (1997)</i> | <i>Song & Montoya-Weiss (1998)</i> | <i>Barczak et al. (2009)</i> |
|------------------------|-------------------------|--|------------------------------|
| | | Strategic Planning | |
| Idea Generation | Idea/Concept Generation | Idea Development & Screening | Idea Generation |
| Preliminary Assessment | Idea Screening | Business & Market Opportunity Analysis | Idea Screen |
| Concept | | | |
| | Business Analysis | | Business Analysis |
| Development | Development | Technical Development | Development |
| Testing | Test & Validation | Product Testing | Test & Validation |
| Launch | Commercialization | Product Commercialization | Commercialization |
| | | | Success |

2) Textbooks: mostly based on product management and marketing literature, these models strongly influenced the evolution of the NPD models in the last years. In the table below (Table 1.2), there is an important temporal distance among the selected processes. The Booz, Allen and Hamilton model, even known as Booz & Company, was ideated in 1980 and further revised in 1982. As visible in the comparison with the most recent models dated back from 2007 and 2008, it can be considered very addicted to the nowadays reality even if it was developed almost forty years ago. Other models proposed in the table below are signed by deep marketing features. Kotler, one of the most important marketing's father of the today's literature, together with Armstrong, developed in 2007 a model where marketing plays a pivotal role by having a own specific stage in the NPD process: authors' aim is to underline the huge importance of this subject in the nowadays world. In the next chapters of this thesis, other marketing authors like Al Ries and Jack Trout will be sporadically mentioned thanks to their contributions on relevant matters of the actual reality. On the same year, the aforementioned Crawford, who in 1997 developed the Activity-Stage Model (Exhibit 1.3), and Di Benedetto proposed a simpler approach based on management and marketing by starting from the identification of opportunity and ending with the final launch. Trott, cited in the previous paragraph by referring to the Development Funnel, on 2008 promotes his NPD Stage-Based model that show clear marketing aspects, especially in the sixth stage of testing when the focus is directed into the famous four Ps and other

variable directed towards the correct investigation of the market before to introduce the product.

(Table 1.2) – NPD Stage-Based Models on Marketing/Management Textbooks (1982 – 2008)

| <i>Booz, Allen and Hamilton (1982)</i> | <i>Crawford & Di Benedetto (2007)</i> | <i>Kotler & Armstrong (2007)</i> | <i>Trott (2008)</i> |
|--|---|--------------------------------------|---------------------|
| New Product Strategy (NPS) | | | |
| Idea Generation | Opportunity Identification and Selection | Idea Generation | Idea Generation |
| Idea Screening | | Idea Screening | Idea Screening |
| Concept Development and Testing | Concept Generation and Evaluation | Concept Development and Testing | Concept Testing |
| | | Marketing Strategy Development | |
| Business Analysis | | Business Analysis | Business Analysis |
| Product Development | Development | Product Development and Testing | Product Development |
| Testing | | Test Marketing | Test Marketing |
| Commercialization | Launch | Launch | Commercialization |

To the purpose of this thesis, the NPD model developed by Booz, Allen and Hamilton is the most addicted to discuss the main topics object of analysis.

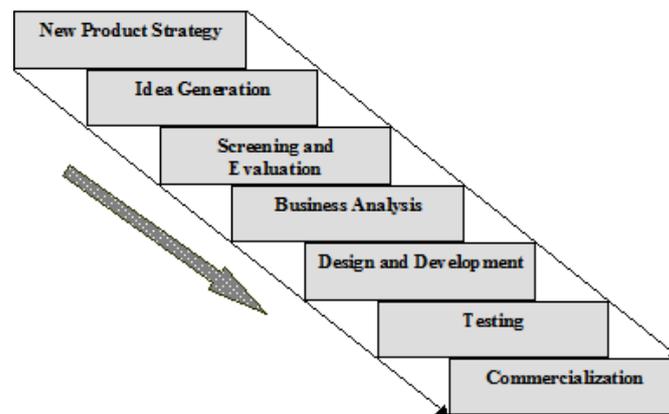
First of all, it starts from an approach that is more managerial than completely focused on marketing: in this way, no differences concerning budget constraints or financial resources emerge and almost universal guidelines may be identified independently from company’s sizes. Second, the key role of defining a primordial strategy reflects the nowadays reality of constantly examination of any individual move and detail in order to avoid risks coming from the external unpredictable context. Third, this model includes an internal flexibility capable to lead the company to change or repair its orientation without damaging all the process: this characteristic results fundamental in a reality dominated by high modularity, customization and attempts to shorten the development time. Finally, the authors proposed an evolution of this model by introducing a further stage that will be discussed in the third chapter: thanks to this additional phase, the BAH model results suitable even for particular market like the luxury industry, object of analysis.

1.3 - The Booz, Allen and Hamilton NPD Model

In 1982 Booz, Allen and Hamilton, managers of the consulting firm currently known as Booz & Company, published one of the most recognized and spread NPD framework: the famous and further discussed BAH model.

By studying the contribution of pioneers like the aforementioned Cooper during the previous years dominated by the Stage-Gate Models, the authors converged into this powerful seven stages model able to reduce the risk inherent in new product development, represented as follows (Exhibit 1.9¹⁹).

(Exhibit 1.9): The BAH New Product Development Model (*Booz, Allen and Hamilton, 1982*)



The same Booz, as highlighted in own precedent researches and papers, concluded that probability of failure are vertiginously higher than chances of success. However, through the implementation of a consistent framework capable to focus into a 360° vision, especially driven by a very first stage full dedicated on strategy, the process opens up to external networks and environment. In this way minimization of risk may be achieved and new product introduction may guarantee long-term growth and eventual profits.

Thus, through seven stages, the BAH model evolves from the strategy definition to the idea generation and the final launch: to the purpose of this thesis, the stages are here discussed by following an approach that highlight the consistency with the next chapters.

1.3.1 - Stage 1: New Product Strategy (NPS)

The first stage described by the authors was a revolutionary phase: for the first time, companies that selected the BAH process were driven by the formulation of a clear path to follow.

¹⁹[https://www.google.com/search?rlz=1C1GCEU_itIT843IT843&biw=929&bih=636&tbm=isch&sa=1&ei=CCnlXPzoOcCHwPAPqoWnsA0&q=BAH+model&oq=BAH+model&gs_l=img.3..0i19l2j0i5i30i19j0i8i30i19.3999.3999..4190...0.0..0.97.97.1.....0....1..gws-wiz-img.T5l_ImTKwV8#imgrc=5sCH_OA8S9bL1M:](https://www.google.com/search?rlz=1C1GCEU_itIT843IT843&biw=929&bih=636&tbm=isch&sa=1&ei=CCnlXPzoOcCHwPAPqoWnsA0&q=BAH+model&oq=BAH+model&gs_l=img.3..0i19l2j0i5i30i19j0i8i30i19.3999.3999..4190...0.0..0.97.97.1.....0....1..gws-wiz-img.T5l_ImTKwV8#imgrc=5sCH_OA8S9bL1M;)

In the previous years, NPD models didn't focus on precise objectives defined at the very beginning, rather results were adapted according to the subsequent stages. Indeed, one of the main critics against the Stage-Gate Models was the complete focus on the following step in order to pass the tests required to move on to the next phase of the process. Authors catch the importance of strategic guidelines and a global vision able to make clear the entire process and support the players involved in its realization. Booz *et al* underlined the importance of company's identity: consistent part of the strategy is the coherence with firm's values and concepts. Management should clarify mission of the introduction and objectives to pursue, by constantly monitoring the alignment between the ongoing NPD process and the goals. Moreover, roles and benefits that the new products should bring must be identified and specified in order to justify the investment in its development.

To the purpose of this thesis, the NPS stage is fundamental: nowadays, due to the globalization and the constant unpredictability mentioned in the introduction, companies are required to provide clear strategies before to proceed to develop the innovation. Moreover, the consistency with corporate identity and values is a decisive requirement to the selection, among the unlimited NPD processes, of the BAH model. In the following chapters will be discussed the importance of formulating a precise strategy: especially in the second and third chapter, due to the focus on luxury (automotive) companies, the reminding towards firm's values is critical in order to successfully represent the famous and respected reputation.

1.3.2 - Stage 2: Idea Generation

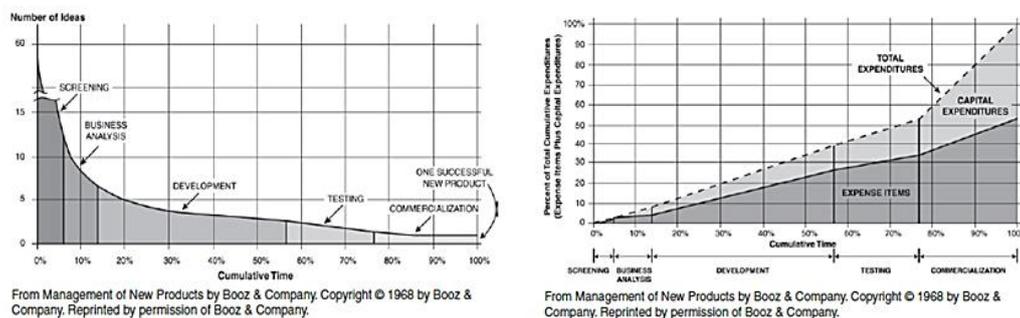
The second stage of the BAH model is the most common in any product development process. Whatever the NPD model, idea generation is the first step to create something new. Ability of the authors was the immediate connection between these ideas with the goals and objectives defined in the previous stage. Moreover, by moving deeper into this phase, Booz *et al* imposed a filter compared to other NPD processes: instead of opening up to any potential ideas and upcoming opportunity, authors firstly suggested to identify concrete categories of primary interest. The same Booz, in order to reveal principle causes of failure, concluded that the identification of interesting but not coherent ideas was one of the most common mistakes shared by companies of any industry. Authors recommend to focus on any kind of source, from external feedback by stakeholders and fixed targets to internal employees and vendors. Moreover, Booz *et al* strongly evidences the approach of full-openness and the "*can do basis*" to maintain by all the players involved in order to consider any arising idea, without discrimination about the derivation source (a concept already

mentioned in the introduction and strongly contested on the following decades by marketing's fathers like Philip Kotler, Al Ries and Jack Trout).

1.3.3 - Stage 3: Screening and Evaluation

The third stage of the NPD model developed by Booz, Allen and Hamilton includes both screening and evaluation of the ideas collected into the previous phase. Analyses and investigation of the collected proposals are carried out by taking into account the potential contribution they may have once in the market. Practically, by thinking at the graphic representation of the *Development Funnel* mentioned by Trott in 2008, this stage represents the part where the number of emerging ideas is dramatically reduced to let the most promising ones to accede to the following phases. Contrary, as the number of proposals decrease, the expenses associated with new product development increase: both situations were graphically represented by the same authors (Exhibit 1.10) in order to understand the consequences these decisions have on the entire business.

(Exhibit 1.10) – Management of New Products (*Booz & Company, 1982*)



On the left side, only the most promising ideas have the possibility to move to the business analysis stage: the others are discarded or, if the company still considers them potential thanks to their coherence with market emergent needs, they are further evaluated. On the right side, the financial projection takes into account not only economic aspects but even the temporal variable: capital expenditures are not enough to concretely evaluate the selected ideas. In general, authors were forerunner in this sense by focusing on aspects not directly related to revenues and performances.

1.3.4 - Stage 4: Business Analysis

The fourth phase of the NPD process described by the authors examines the financial nature of those ideas considered as the most promising ones. Feasibility is the essential requirement in order to proceed to its real development: according to the BAH model, economic and financial

projections should be estimated on both short and long run. In the second chapter, by discussing about the introduction of a new product from a general perspective with no distinctions among industries or companies, ‘universal’ and diffused methods consider the next five years period²⁰ to estimate the feasibility of the idea. Coherence with economical business indexes²¹ is mandatory to understand the alignment with the NPS fixed in the first stage. Analyses, methods and techniques are daily activities carried out by any company of the actual context, especially on the luxury industry where financial aspects are priority to justify own public results and involve new investors to support the business.

During this phase, companies have to focus even on market analysis by understanding the potential target, barriers to entry, current competitors, but even product attributes and eventual marketing campaign to support its future launch and diffusion. Moreover, in the nowadays reality, predictions and forecasts are becoming from one side more difficult, but from the other really indispensable: companies daily try to anticipate the future demand in order to gain competitive advantages over the competition. In order to collect all these information, top managers should redact an hypothetical business plan able to justify all the economic and financial efforts the company is planning to make in order to translate the selected idea into a powerful new product.

1.3.5 - Stage 5: Design and Development

According to the authors and in alignment with other diffused NPD models, the design and development stage is the most important phase of the process.

Its impact on both money and time is huge: managers must be sure of the feasibility of the idea to don’t collapse and ensure the advantages the future new product should deliver to the company. As Booz *et al* affirms, it is not only a simple matter of assembly and manufacturing: into this stage enters all the decisions concerning raw materials availability, supplier’s relationships, design and production, personnel, equipment and physical space. All these requirements are critical to influence the most important variable of this stage: the development time. As debated in the following chapters, in order to take advantages over the competition and to introduce own new products earlier into the markets, companies focus all the efforts towards this stage in order to reduce as much as possible the development time.

²⁰ E.g.: Pay-back period, etc.

²¹ E.g.: ROI (Return on Investment), EBIT (Earnings Before Interest and Taxes), EBITDA (Depreciation and Amortization), etc.

According to the authors, it is not only a matter of competition: as shown in the third stage in the Management of New Product proposed by Booz & Company (Exhibit 1.8)²², as the time variable grows, on parallel all the expenses increase. However, the same authors pointed out that extent of development time clearly depends on degree of innovation: the more complicated the idea, the larger the development time.

1.3.6 - Stage 6: Testing

On the sixth stage, Booz, Allen and Hamilton focus on the importance of experimentation and simulation. Step by step, earlier projections are validated in order to arrive to the final results that will be introduced in the market. Tests may be executed in some laboratories through external support or partnerships with universities or consultancies.

First of all, tangibility of the product is verified in order to be compliant with all the laws and restrictions of the industry: in the last chapter it will be investigated the Ferrari's case where emissions and other requirements are severally limited and peculiarly monitored by the experts. Tests and trials aim also to determine marketplace suitability: marketing plans are drafted during this phase and successively experimented in order to understand initial reactions of the market. Differences at this stage evolves more and more from the second chapter to the third, when all the marketing Ps variables, due to the different realities of the respective industries, are subjected to different simulations. Sometimes, beta tests and samples of future new products are given away in order to both collect customers' feedback and increase general awareness about the upcoming newness: thanks to the opinions gathered, the company have the possibility to improve more and more its original proposal in order to launch an already appreciated product.

Even at this stage, the degree of innovation is directly proportional to the amount of tests to execute: at the same time, other evaluations concerning the development stage are deepened in order to ensure an effective introduction. Inside this category, especially suppliers and components availability, geographical distribution and employees training are the most critical variables.

1.3.7 - Stage 7: Commercialization

The last stage of the BAH new product development model is the commercialization. This phase includes all the efforts made by the company to powerful introduce the new product. At this stage, especially the marketing function plays a decisive role in order to effectively support the launch:

²² Screening and Evaluation, Exhibit 1.10

campaigns, events or presentations are great occasions to impress the target audience. Generally, the exploitation of important events is common into the luxury industry, as it will be discussed in the third chapter and, deeply, in the last one by focusing on Ferrari S.p.A.: usually, the Prancing Horse²³ is used to present own latest models during occasion like the Geneva Salon, an historical occasion preceded by press conferences and presentations.

Plans and scheduling support any phase of the launch to avoid problematic blocks, while analyses and researches contribute to estimate initial results and feedback in order to repair any eventual gap. Timing is a critical variable to understand when is the right moment to insert the new product compared to the competition: rivals' moves are constantly monitored to promptly react to some changes. According to Booz, Allen and Hamilton, this last stage may be longer than the development time due to the continuous monitoring it includes once the product is launched into the market. Checks and re-alignment to those objectives designed in the very first phase and declared on the NPS are constantly verified.

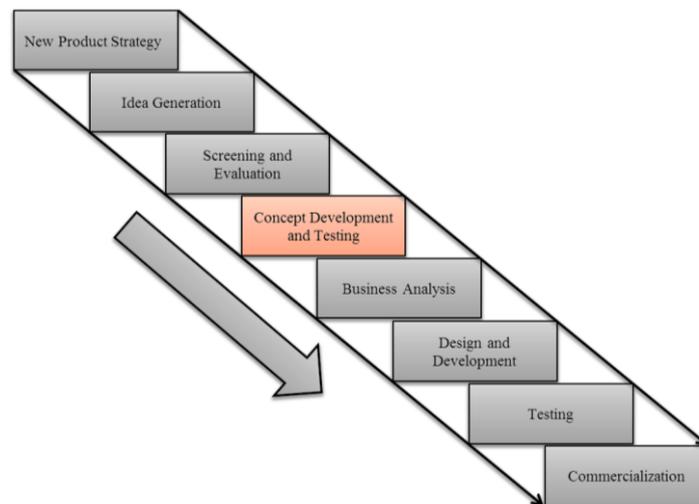
1.4 – The revised BAH Model

Once developed the primordial NPD model, Booz, Allen and Hamilton continued own studies and researches to examine the evolution of the market: emerging differences focused on discoveries, new technologies, degree of innovation and, above all, industry differences.

Authors understood that no models might be adopted with the same results in any segment, due to natural discrepancies and target reference. Especially the luxury industry, a never in crisis market as discussed in the third chapter, was a segment that deserved peculiar attention: Booz *et al.* examined the specificity of the market and especially the superfluous nature of its products, as further discussed by Czellar and Dubois. The result was the addition of an intermediate stage between the screening/evaluation phase and the business analysis: the concept development and testing (Exhibit 1.11).

²³ Famous and historical name assigned to Ferrari S.p.A., by recalling to its trademark and traditional symbol

(Exhibit 1.11) – The revised Booz, Allen and Hamilton NPD Model (*Booz & Company, 1982*)



Once the screening and evaluation phase ends, the survival ideas still into the funnel are those considered really interesting and with high potential value. By the way, they are still general and it emerges the necessity to resume them into meaningful concepts capable to rapidly highlight their strengths. Through the concept development the company pursues a double aim: from one side it clearly defines what the new product promises to the customer, from the others it offers both emotional and rational reasons to stimulate consumers to buy or use the product. Usual concepts focus on customers' unmet needs and the efforts made by the company in order to solve, by explaining why the firm is better than competitors both in terms of satisfaction and reliability. Clearly, the core message of these concepts focus on key benefits proposed by the new product: these innovation must be capable to strongly differentiate the company from the competitors. At the end of the fourth stage, powerful concepts will support new products in order to reach those strategic objectives established in the NPS.

To create effective concepts suitable with company's goals, firm should first analyse all the dimensions to which the new product refers. Basic questions are:

- What are the most important attributes of the product? What are its main benefits?
- Who will use the product? Who will not use it?
- Where it will be used? When it will be used?
- Does already exist product like it? What about competitors' similar products?
- Which kind of positioning the company desires to reach through its introduction?
- Is the product consistent with the corporate identity? Does the concept recalls the company?

For example, if the firm is introducing a new product directed to the B2B²⁴, the concept has to recall retailers or sellers' attention; otherwise, if the company is referring to its customers, the concept has to be capable to attract them; differently, if the goal is to improve reputation and social recognition through environmental causes, the concept has to underline these social initiatives.

Whatever the reason or the final target, during this stage is crucial the variety: answers to previous questions are important but they have not to limit the space explored by the company. Business history underlines the great impact generated by creative concepts against those considered 'common', 'usual' or 'not relevant'. In order to stimulate variety, techniques such as brainstorming²⁵ or brain-writing²⁶ are generally adopted to develop powerful and effective concepts. Physically, concepts can assume different forms: usually they are generated as one-page statements or few words capable to absorb and communicate all the benefits the new product contains. In other cases, concepts are resumed into raw prototypes or, as happened recently, they can be virtually represented by videos or images. Independently from the physical form, after to be defined, concepts must face the validation stage: this evaluation is based through quantitative and qualitative methods such as customers surveys, marketing intelligence and market analysis.

1.5 – The risks of the NPD Models

As any field related to the business, lots of risks occur even in the development of new products. Blocks may happen at any stage, but consequences may vary dramatically: the reality depicted by Booz & Company (Exhibit 1.10) reflects the huge impact faced by the company once the development process move on. The table below (Table 1.3) resumes some general causes of failure underlined by the authors.

²⁴ Business to business

²⁵ Highly creative approach focused on considering useful and smart even those topics almost unrealistic, in order to stimulate as much as possible the creativity. During the debate among the members of the team selected to define the final concept, it is strongly forbidden to criticize any ideas. The purpose is to avoid fear of judgements and other usual negative effects usually emerging during group's interactions and discussion.

²⁶ Alternative approach which offers more freedom than the precedent. Participants, after be disposed in a circle, write down on a card two or three ideas. Then, they pass it to the adjacent person who has to continue the elaboration or exploit the received input to generate further ideas. Cards are continuously passed from one participant to the following for a pre-fixed time lapse. At the end, team evaluates the results: usually the majority is impractical, but finally some of them might be shaped into valuable concept ideas. Continuous anonymous nature of this approach plays an enormous advantage in order to stimulate members' creativity.

(Table 1.3) – Causes of New Product Failure (*John Wiley & Sons, Inc., 2001*)

| Causes of New Product Failure | |
|------------------------------------|---|
| 1. Market/marketing failure | Small size of the potential market No clear product differentiation Poor positioning Misunderstanding of customer needs Lack of channel support Competitive response |
| 2. Financial failure | Low return on investment |
| 3. Timing failure | Late in the market Too early—market not yet developed |
| 4. Technical failure | Product did not work Bad design |
| 5. Organizational failure | Poor fit with the organizational culture Lack of organizational support |
| 6. Environmental failure | Government regulations Macroeconomic factors |

Source: From Jain, D. (2001). Managing new product development for strategic competitive advantage. In D. Iacobucci (Ed.), *Kellogg on marketing* (pp. 130–150). New York, NY: Wiley. Copyright © 2001 by John Wiley & Sons, Inc. Reprinted with permission of John Wiley & Sons, Inc.

First of all, market and marketing failure may be caused by wrong analyses and forecasts: the company might overestimate the market potential or negatively positioning the new product. In both cases, sales are very lower than what is expected and the company might be not able to recover the initial costs. Other causes of failure highlighted by the authors and related to the market are misunderstanding of customer needs²⁷, lack of channel support, competition response and no clear product differentiation. Financial failure, according to the authors, are especially driven by low ROI: however, once a product is finally developed the company faces a dramatic trade-off phases that may conduct even to the bankruptcy²⁸. Late entrance in the market or very early moves are causes of failure even in the luxury industry, as it will be discussed later. Negative results might have technical origin due to bad designs and product inefficiencies, but even because of a weak organization behind. Finally, another cause of failure might come from environmental issues: unpredictability and externalities play a critical role in all the stages of whatever NPD models.

²⁷ This point was strongly discussed especially by Jack Trout and Al Ries who contested the common attitude of the top management to select own ideas instead of real customers' needs.

²⁸ Trade-off will be further discussed in the second chapter.

Chapter 2 - How to launch a new product in the today's world

The introduction proposed an overview of the nowadays world and it touched upon the importance of the NPD in the actual context. Daily, firms of any industries carry out different activities driven by a common goal: the development and launch of successful new products. As discussed, reasons to act towards this direction include improvements in terms of both internal efficiency and external performances: inside the company, the development of a new product opens up to competitive advantages, creates an important ground to future decisions and increases management knowledge by raising their curves of experience; outside the company, the NPD's efforts sustained to meet customers' needs and market requests empower intangible aspects directly connected to the firm, such as recognition and reputation.

On 1934, Schumpeter defined the product innovation as “the introduction of a new good (...) or a new quality of a good” (*The Theory of Economic Development, J.A. Schumpeter, 1934*) and affirmed that its development process and eventual success depended on many variables such as forms of organizations, market availability and emergence of new materials: above all, he stressed the concept of process as critical factor. Around this central topic, as discussed in the first chapter, from 1950 onwards an indefinite amount of NPD models have been created with the purpose to effectively develop and subsequently launch a new product.

As anticipated, incongruences arose towards many directions: Italian marketing literature usually refers to six simple stadiums, American articles talks about only five phases. The selected NPD process to the purpose of the thesis, the aforementioned BAH model (1982), counted seven stages. Generally, the length of any phase might vary because of industry's speed or company's strategies: however, the Booz *et al.* NPD model shows common traits that lead to universal guidelines.

Obviously, it is not guaranteed that a company is capable to resist to the dramatic negative impact generated by wrong decisions made during the development. Any stage of the NPD process requires lots of efforts in terms of money, time and human resources: what is spent and then abandoned it will never be refunded, at the same time to persist towards an useless but expensive direction might conduct out of the market, to closure the activity or even to declare bankruptcy. Again, in order to minimize as much as possible these risks, any phase requires continuously and iterative control.

Once discussed the importance of developing and launching a new product, especially in a controversial reality as the today's context, in this chapter we describe any stage of the Booz, Allen and Hamilton NPD model, with no distinctions among industries, product's typologies or services.

2.1 - Stage 1: New Product Strategy (NPS)

The first stage of the model proposed by Booz, Allen and Hamilton views as protagonist the main responsible of the NPD process: the company.

Any move the firm decides to act must be related to the core business: mission, vision, values, financial assets, human resources and, above all, strategic and tactical objectives. To specify and carefully clarify all these aspects is crucial before to start the NPD process: in this way the company is sure to follow always the right path and it prevents future blocks once the project is activated.

Thus, the New Product Strategy (NPS) is the best initial step of an NPD process because *'it identifies the strategic business requirements that the new product should comply with, and these are derived from the corporate objectives and strategy of the firm as a whole'* (Booz, Allen & Hamilton, 1982).

Generally, at the beginning, company's focus is completely business-oriented and it doesn't enters on specific peculiarities: the firm starts by revealing awareness of itself and its own resources, then it outlines both short and long-term objectives coherent with the strategy elaborated to develop the new product. This initial evaluation can't be abstract and undervalued: financial parameters might immediately support it. Forecasts focusing on potential benefits the new product might generate has to be supported by ROI benchmarks detected during previous launches: in this way the company may have an easier understanding of the resources needed to develop the product and the requirements to respect in order to achieve the expected results. Yet from this very first stage the company might request an external support from consultancies to understand the feasibility of the project.

Once passed the financial requirements, the company states on the NPS the boundaries of action. First, the management studies the real context to launch the product and the variables included. Usually, the most relevant fields to examine are:

- **Market:** the company decides if the new product is directed to the mass, to some segments or to a specific niche. Once delimited the area, the managers study its potential and accessibility: business cases teach that lots of products were abandoned because directed towards markets without potential or due to high entry barriers. This analysis requires time

and it is critical: even strong brands can't survive to wrong market evaluations. Definition of target audience, availability of suppliers, estimation of raw materials and competitors' analyses are considerations already activated at this stage and furtherly examined in the following phases;

- **Product:** beyond the Schumpeterian definition, today it's not enough to introduce a slight variation to obtain success. Not always incremental innovations guarantee great profits, while radical improvements might be too expensive. In this scenario, as suggested by many marketing experts, neither pricing wars are able to recover all the costs sustained and, paradoxically, they accelerate the failure. Due to these dangerous and realistic reasons, the product deserves the most relevant analyses, in order to make decisions as effective as possible throughout the entire NPD process;
- **Technology:** breakthrough as those occurred during the industrial revolutions are becoming more and more frequent because of globalization and Internet diffusion. Today, these effects entered inside any industry: 'Internet of Things 2.0', big data, digital era, fast-delivery and electric revolution. To draw up a concrete NPS, it became necessary to perfectly know all the facts of the available technologies in order to maximize production efficiency, organizational improvements and costs saving. Therefore, forecasts of future trends and new progresses require a dedicated section of evaluation because it might open up new routes in terms of survival and lifecycle extension.

Once these theoretical evaluations are completed, the company has to face the most difficult challenge of the first stage: the translation and implementation of the NPS. The entire firm must have clear why the management wants to develop a new product, which objectives are expected to reach thanks to the innovation, what are the specific steps to follow and the degree of involvement of each player.

Initially, the strategy is translated into daily actions coherent with the objectives fixed in the earlier analyses. On parallel, a clear communication is implement throughout the company, in order to increase both managers' recognition and employees' understanding and participation. Then, strong coordination across the functions and inside any department is activated and continuously monitored. A committee formed by the most representative members of each function is proposed with the role of accepting or rejecting any decision concerning the NPD process and product evolution.

Usually, the material output of the NPS implementation is a physical report, a clear and well-documented plan filled with financial data, business requirements (according to the fields described

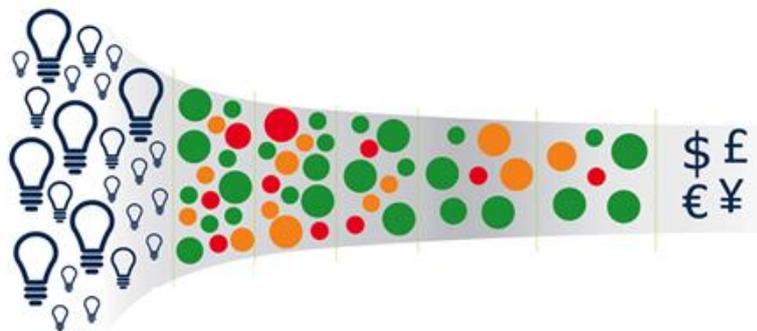
above) and other further specifications with organization nature, such as distribution of responsibilities and coordination.

2.2 - Stage 2: Idea Generation

Once the first stage is concluded and the NPS is correctly defined, well implemented and effectively communicated, it is finally possible to proceed with the following steps of the BAH new product development model, by entering into the second phase: the idea generation.

The image below (Exhibit 2.1)²⁹ is a graphic representation of the famous Development Funnel³⁰ proposed by Cooper and Kleinschmidt: in the figure is possible to appreciate the fundamental role played at this stage. The funnel represents the entire NPD process: on the left there is the entrance to all the ideas proposed. Moving step by step to the right, any following stage reduces drastically the total amount and select, at the end, only those ideas that can concretely add value to the customers and bring positive results to the company.

(Exhibit 2.1) – *New Product Development Funnel (Cooper & Kleinschmidt, 1986)*



The aim of this stage is to enlarge as much as possible the funnel's entrance, by producing huge quantity of ideas in order to let the company to choose among infinite possibilities and select the most suitable and promising ones. As anticipated in the introduction, it doesn't exist a precise number of ideas able to guarantee a successful new product: however, the higher the amount of ideas produced, the larger the funnel's entrance and the greater the possibilities of valuable launches. Clearly, the positive effect to exploit infinite quantities doesn't mean that whatever proposal has to be taken into account. Differently, continuously deep focus and opportunity identification must be carried out in order to consider only those ideas coherent with the NPS.

²⁹https://www.google.it/search?q=new+product+development+funnel&source=lnms&tbm=isch&sa=X&ved=0ahUKEwju-JeB58_hAhUCsKOKHZZsCZIQ_AUIDigB&biw=1366&bih=632#imgrc=HoCQmXxVMnPBPM:

³⁰ In the first chapter dedicated to the literature review the Development Funnel was cited by Trott, 2008

2.2.1 - Stage 2: Idea Generation - Opportunity identification

The first human beings needed a tool in order to illuminate the dark, to protect themselves from the animals and to satisfy the necessity to eat: after some even involuntary attempts, the solution came from the discovery of fire, capable to solve all these three primordial needs.

This historical example is not so far from actual reality: the connection point is given by the recognition of what Herbert A. Simon, in his *'The Sciences of the Artificial'*, calls "Gap" and the generation of what the same author defines "Solution". Today those gaps are mostly known as "unmet customer needs", while solutions are just the new product ideas based on their identification.

Generally, there is not only a bi-directional relationship between companies and consumers. Indeed, firms identify gaps and opportunities by exploiting different resources:

- External sources: company detects unmet needs by analysing the competitive scenario and the market to serve. Moreover, daily the entire environment opens up to new opportunities identification: firm's geography through the physical distance from universities, consultancies or agencies might help collaborations, researches or studies capable to highlight interesting possibilities; environmental volatility due to political or economic issues, technological evolutions, cultural changes or new trends might cause the emergence of new needs or wishes;
- Internal sources: company should exploit as much as possible the R&D department, personnel competencies and experiences, management expertise and historical data.

Once completed the investigation of this first front, company continues to identify opportunities by relying on its main human resources. In order to find other potential original ideas coherent with the NPS, the most important human resources are:

- Customers or future users of the company's product: anyone better than them can identify what is wished and which problems need solutions, thus they must be carefully taken into account. The history is full of product's failures because of wrong market analyses or management's beliefs against customers real needs. Principle tools to reach receivers during opportunity identification are questionnaires, interviews, focus groups, projective or creative activities and observational methods. All these techniques will be further discussed;
- Firm's employees or dealers: actors who daily interact with customers and specifically know business activities must be considered during this phase. Personal interactions with all the public around the company it's decisive: they might observe customers' behaviours or

reactions and collect feedbacks, complaints, recommendations, sensations and thoughts not catchable through normal quantitative researches. Al Ries and Jack Trout stressed especially the employees' perspective: in their "*The 22 Immutable Laws of Marketing*", it was strongly contested the nowadays reality. According to the authors, the top management refuses effective ideas because coming from "lower levels" due to the following illogical reasons: 1) the powerful idea doesn't bring enough recognition to the company, even satisfying customers' needs; 2) the same notion doesn't ensure direct benefits to marketing managers or CEO's career, because of its source of derivation;

- Competitors: always rivals might offer right inputs to generate successful ideas. Deep observation and imitation of competitors' products and innovations is a phenomenon diffused worldwide: raw materials, new technologies, scientific methods, strategic packaging or advanced techniques. Any aspect, opportunely redefined and improved, might be a powerful starting point. Timing is an important matter and not always an imitation strategy is capable to recover the first-mover advantages gained by competitors who faster introduced their innovations;
- Analysts or marketing experts: researches, database, projections and specific analyses, combined with human skills and expertise, might highlight quantitative aspects capable to identify new unmet needs. Departments such as customer relationship management (CRM), marketing intelligence and market research have to work jointly to form a common ground and share evidences about new opportunities. These researches are useful especially in the following stages, both to understand the right target audience through clustering or ranking methods and support final decisions through conjoint analysis or regression models.

2.2.2 - Focus: Idea Generation techniques

Generally, company's golden rule is to offer to its customers '*what they want and not what the company thinks they want*'. Unfortunately, practical application is not easy as it might appear. One day customers express preferences that, the day after, are completely diverse: of course, it has negative consequences because once the NPD process is activated it becomes very difficult and expensive to modify and correct it. Sometimes, instead, customers are not capable to clarify what they really need and the result is a product that will never be bought; other times they are even able to declare something fake or far from what is really desired.

Then, because both customers' subjectivity and illogical purchasing behaviour complicate a lot chances to create concrete winning products, final objective of this stage is to reduce uncertainty as much as possible, in order to avoid future blocks once the NPD process begins. To reach this aim,

firms developed different tools and techniques capable to detect qualitative and quantitative results: as follows a panoramic of the most relevant qualitative techniques commonly used:

- **Deep Interview:** the simplest and most useful technique. Firms interview their customers, by phone (CATI³¹), by internet (CAWI³²), by directly and interpersonal interaction (CAPI³³). Any method includes both advantages and disadvantages: for example, to contact customers by phone or by internet from one side let the firm to rapidly reach a huge number of people, but from the other only a small number of replies is collected. Moreover, calls might be interrupted and physical reactions are hidden because of the indirect contact. Experts prefer direct contact: it let collect lots of replies filtered from external pressures, it let understand customers' emotions and through the interpersonal relationship is possible to reach a deeper degree on quality's answers. Counter-effects of this method are costs, both in terms of time and money and no universality: one-to-one interviews are very personal and these poor samples cannot represent the whole population;
- **Focus Group:** the most diffused technique, recently available even on Internet. During an interval from one to five hours, a moderator has to manage a group of 6-12 experts who are continuously stimulating through video or activities about the specific topic discussed. Costs and time are really expensive: experts who participate at the meeting are selected through questionnaires; moderator who plays a crucial role, has to be trained in order to be both effective communicator and deep observer; a clear structure has to be defined to help the moderator to effectively manage the debate towards pre-fixed objectives. Finally, results must be elaborated and measured by taking into account different subjects and personalities in order to have reliable findings;
- **Observations:** firms, through salesman or personnel, examines customers' behaviour inside the marketplace and their reactions once exposed to company's products. The aim is to understand some hidden or emotive factors that might emerge during their first interactions. It is a technique which requires an high degree of interpretations because it doesn't lead to objective answers: it is really useful because it opens up to new future experiments during the testing stage, such as creation of particular atmosphere and different allocation of specific objects.

³¹ Call Assisted Telephone Interview

³² Call Assisted Web Interview

³³ Call Assisted Personal Interview

2.3 - Stage 3: Screening and Evaluation

The second stage, through the intermediate steps of identification and its techniques, conducts to almost infinite opportunities able to produce hundreds potential ideas: now it becomes necessary to compress this great amount by focusing only on those considered really worth. Both the careful evaluation and selection are the main purposes pursued during the third BAH's new product development stage, known as 'idea screening'.

Souder examined causes of NPD success and failure and highlighted two key results: 1) internal generated ideas had lower rates of success than externals; 2) ideas generated from customers have higher rate of success than those driven by businesses' purposes. For this reason, during the screening stage more and more companies are integrating both customers and employees from the very beginning and throughout the entire NPD process, in order to identify and select really effective ideas.

Clustering methods are activated to re-arrange all the opportunities identified and finally form small groups of 20-30 potential ideas depending on similar concepts or attributes. Once completed the first screening, a second round of evaluation starts to connect any group with 4-5 relevant tactical needs. Practically, assuming the development of an innovation in the automotive industry³⁴, initial groups might show customer's need of comfortable drive or intuitive devices, then a common association might be a product 'easy to use'.

Company may also adopt decision criteria based on the firm's strengths. In the software industry, for example, firms possess product platforms: these are set of common elements shared across products. From one side, by sharing equal parts, companies cut both waiting time and costs and the general NPD process benefits of its usage, even by increasing its flexibility. From the other, as usual, these platforms conduct to basic and simple products and the risk is the introduction of useless innovations.

Generally, a first application of some filters is mandatory in order to understand which survival ideas might be seriously considered and which, instead, has to be discarded. Influence of company's goals or customers' wishes might be controlled, while a further evaluation of excluded ideas is recommended to don't make underestimations. For all the ideas finally selected, a short presentation from 2 to 5 minutes is prepared and later exposed to the committee, a decision team formed by experts capable to make primordial considerations. Ideas which passed the exposition move on: in this way it is possible to manage many proposals through short sections. Risk to avoid very

³⁴ Discussed in the fourth chapter

powerful ideas is persistent and, for this reason, excluded opportunities are stored and they continue to survive on virtual database or storage.

Screening stage exploits different methods to deeply examine ideas and inputs received. Commonly, the most diffused techniques are:

- Morphological Analysis: method adopted to identify the total set of interesting new combinations of product attributes and features. Key attributes of the potential new product are listed, then all the possible versions are proposed into a table which contains infinite combinations among the attribute. Thanks to this modular attitude, the analysis might evidence solutions not immediately clear;
- Forced Relationship: smart and rapid technique diffused worldwide. By associating advantages coming from different unmet customer needs, it is possible to create consistent linkage capable to empower separated ideas: in the past, the necessity of making pictures added at the pleasure of listening music was the field to develop early cellular phones, while the emergence of internet combined to those previous advantages conducted to the nowadays smartphones. Thus, identification of interdependent inputs not immediately associated to the core idea might contribute to generate and select new successful ideas;
- Systems approach: company studies the entire context where the future new product will be introduced. Depending on which specific target audience, experts may deduct consequences generated by the innovation customers' lives, both in terms of usage and frequency. Techniques already exploited such as interviews or observation might help to define the most realistic scenario where the new product will be launched;

Once the first part of screening is completed, a deeper level of analysis starts to connect survival and potential ideas with those strategic objectives declared in the NPS: the aim is to understand the feasibility of the project in terms of business coherence.

Ideas are now evaluated based on three dimensions directly related to the company: strategic role played by the new product; economic impact generated by its development and launch; probability of success once it is introduced into the market.

Practically, usual 'driving-selectors' are:

- Firm's goals: the selected idea that will activate the NPD process perfectly must fit company's objectives. Depending on the company's achievements, the chosen idea: 1) should guarantee compliance with the target audience to which refers; 2) may show relevant

attributes capable to overcome the competition and conquer new markets or segments; 3) has to revitalize company's brand; 4) might be the solution to other causes. Whatever the reason, the strategic planning established during the first stage plays a pivotal role during this phase;

- Financial parameters: survival ideas are evaluated according to primordial raw financial evidences such as volumes estimation, sales percentage, costs, revenues and profits expectations. Simple indicators contribute to the analysis: trivially, if the total NPD cost expectation is around 10 million dollars, the idea will be selected if able to guarantee EBIT³⁵ higher or equal to 25 million dollars. Usually, marketing assumptions concerning prices, mark-up or eventual promotions still not enter at this round, but initial assumptions may be added to have a more realistic base before moving on the stage of pure scientific analysis;
- Target: as mentioned above on the famous golden rule, consumers are the final users of the new product, then a strong customer-oriented strategy might focus company's efforts towards their unmet needs or relevant wishes. Probably, this is the most significant 'selecting driver' in order to choose a winning idea, because it reflects what customers really want and expressed during the previous steps of interviews and investigation. Clearly, counter-effects of full focus on users' perspectives might be negative financial performances and competitive risks.

Finally, no methods are able to guarantee future success: what is crucial during the third stage is to make effective evaluations. Looking at the most frequent causes of NPD failure, proper lack of strong considerations associate bad results: wrong sales or profit predictions, overestimation of customers potential or materials' availability, underestimation of competitors or external forces.

Company has to activate iterative processes with ideas considered the most powerful: simulation of different scenarios is strongly recommended yet at this stage. Because of the continuous unpredictability surrounding customers, market and environment, failure causes are almost unlimited: for this reason, a cyclical review of opportunity identification and further screening and selection, well supported by realistic analyses, are decisive in order to implement very powerful and effective NPD processes.

2.4 - Stage 4: Business Analysis

In the fourth stage of the BAH's model ideas are evaluated using quantitative performance criteria. Market researches and other scientific analyses were used during predevelopment phases, but now

³⁵ Earnings Before Interest and Taxes

that the process is going deeper and deeper is fundamental a strong financial support to confirm the validity of the idea.

The aim is to measure and validate the feasibility of the idea: to abandon already selected ideas is a dolorous double loss in terms of time and money, but the damage might be almost irrelevant if compared to the possibility of persistently focus on it. Any stage of the NPD process has a cost, moreover the more the process go on and the more increase both expenses and risks: for these reasons business analysis becomes a must in order to promptly block those ideas not effective as expected.

After screening, the business analysis is the detailed investigation stage that clearly defines the product and verifies the attractiveness of the project prior to heavy spending (Bhuiyan, N., 2011). According to Cooper (2000), the most dominant method used by 40.4% companies to measure performance results is a financial approach, followed by strategic approach and scoring models. Then, in the most cases, the NPD process is driven by pure financial reasons: if the project is able to respect and preferably perform over specific indicators, then it might be seriously developed.

Generally, key indicators and parameters estimated during the business analysis focus on both economic and financial aspects. Evaluations of the main tools adopted are further discussed.

2.4.1 - Stage 4: Business Analysis – Focus on economic evaluations

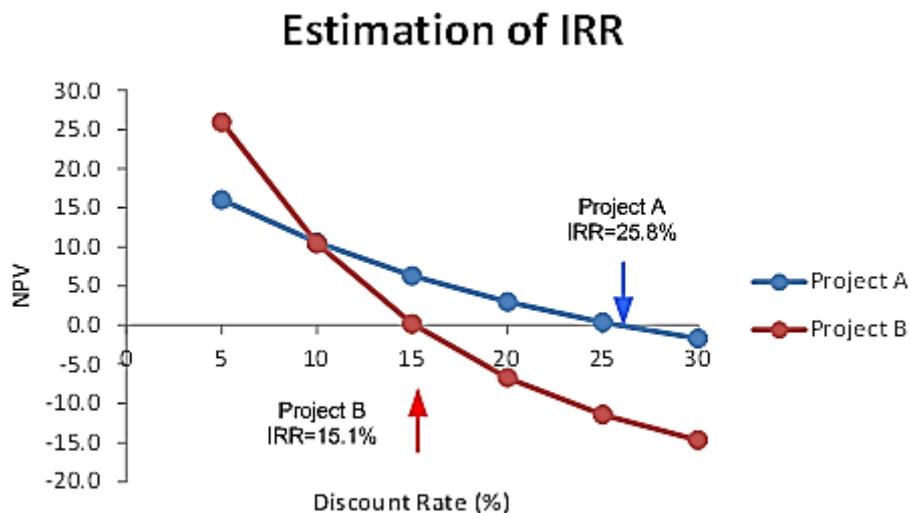
At this stage, analyses go beyond previous and common projections of future incomes, costs and profits: generally, parameters took into account have the purpose to evaluate selected potential ideas as conventional investment decisions. Most used indicators are:

- Expected Commercial Value (ECV): index which measures project value based on expected financial returns. It focus on company's commercial and strategic objective. The method determines the value the ideas to the firm by maximizing the commercial worth of the project and defining eventual risks and probabilities. The calculus starts from pre-fixed budget constraints and it is based on a decision tree analysis which considers future flow of earnings generated by the new product and probabilities of commercial revenues against commercial costs and development costs;
- Net Present Value (NPV): measurement of project feasibility. This method calculates, as shown below both the amount of expected outflows generated during the global NPD process and the amount of expected inflows resulting from operations concerning the

project. At the end, only those ideas with NPV higher or equal to zero pass this criterion and move on next evaluations;

- Internal Rate of Return (IRR): evolution and more accurate version of the NPV. The index works as the same described above, but it takes into account even the effects caused by taxations: it equates the present value of the expected after-tax cash inflows with the present value of the after-tax cash outflows. Thus, if the IRR equals or exceeds the required rate, then the project is acceptable. The graphic below (Exhibit 2.2³⁶) shows an example of two projects with different NPVs: both require diverse IRR to return from the investment. At the end, projects are ranked according to their respective IRR's: the highest a project is ranked, the most profitable its promise and its future development;

(Exhibit 2.2) – Graphic representation of Internal Rate of Return (IRR)



- Profitability Index (PI): by definition, *it is a measure of a project's profitability per dollar of investment*³⁷. It is used to rank projects of varying costs and expected economic lives according to their profitability. It starts from the results obtained by previous indexes: through the simple ratio between present value of after-tax cash inflows and the equivalent of outflows, it gives answers according to the following results: a ratio equals or greater than 1 declares the validity of the project. Finally, as in the IRR index, projects are rank-ordered according to the respective productivity index to generate the preferred portfolio;

³⁶https://www.google.com/search?q=IRR&client=firefox-bd&tbn=isch&tbs=rimg:CVGZtNqIW_1UNIjhShLklaHDWpHsO_1CcyfmmTkogix6KR6JzTb6YFcSKISzuSd5mv4DMelPnxvSN_1OYi3MI5FceH1vvoSCVKEuSVocNakERRCo_wBqvwwjJKhIJew78JzJZMRyzEVu_1EsCsqEgmSiCPHopHonBGgCBhM6msP8yoSCdNvpgVxIohLEYWRgWOXsnEGKhIJO5J3ma_1gMx4RJuNH1CXsGsg8qEgmUfG9I385iBHGNcsQvDhrKCCoSCbcyXkVx4fW_1EfIbpRfXjBjp&tbo=u&sa=X&ved=2ahUKEwi20drFiObhAhVGsKQKHR5GBSIQ9C96BAgBEBs&biw=1138&bih=527&dpr=1.2#imgrc=HqicbeVk7IGIOM:

³⁷ <https://www.sciencedirect.com/topics/engineering/profitability>

These metrics ensure that project ideas can be carefully screened even according business analyses and financial requirements. These indicators support project selection in order to maximize both the value proposed to the market and the achievement of company's objectives. Clearly, all the indexes include advantages and disadvantages: the NPV method ignores probabilities and risks, by assuming that financial projections are accurate and financial goals are fundamental. The ECV index, instead, considers the factors ignored by the NPV, but it depends exclusively on financial and other quantitative data. Finally, because there are no perfect indicators able to give universal and mathematical answers, it is important to combine these metrics to obtain clearer details about projects feasibility and further selection in order to realize the most promising one.

2.4.2 - Stage 4: Business Analysis – Focus on financial evaluations

Once completed economic measurements, it comes the time to evaluate peculiar financial aspects. Short and long term estimations are projected towards the next five years: it is required continuous alignment with company's objectives along the whole period considered in order to plan and examine future investments.

Starting from sales, company first needs to specify which kind of product aims to introduce. Usually firm propose three genres of products to the market: 1) something unique like an house; 2) infrequent purchase like computers or cars; 3) simple commodities like groceries. By clarifying the type, company can detect truthful sales data: respectively, for those 'one time purchasing products' firm needs to compute just the first time sale to collect useful information; for unusual purchases, first time sale requires the support of the replacement sales to make concrete analysis; for common products it is necessary a count of both first time and repeat sales.

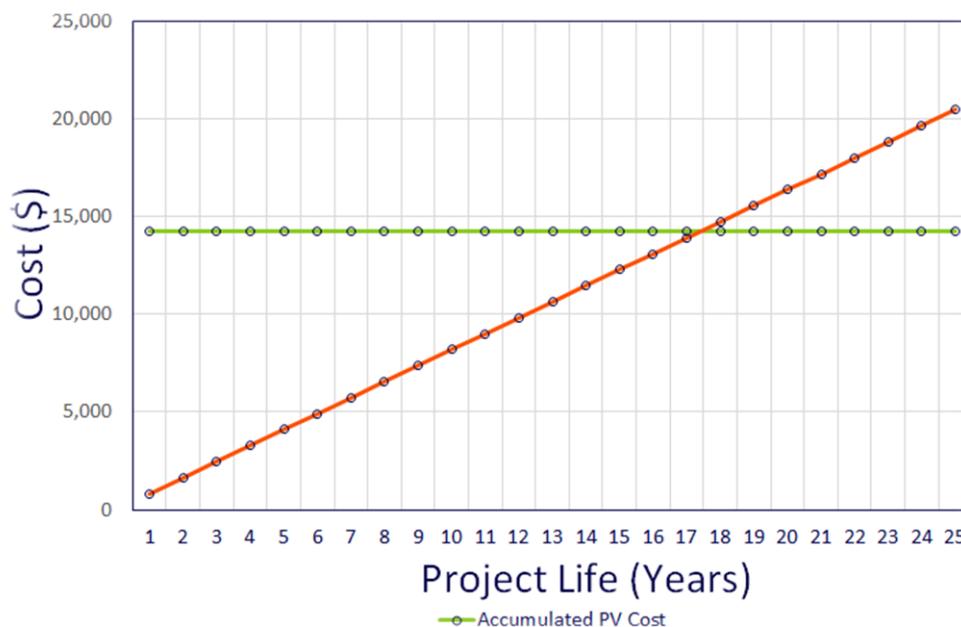
On parallel, cost evaluations are activated by considering the same time lapse: for the next five years, company will accumulate the expenses of interdependence functions such as manufacturing, logistic, administration, marketing, finance, organization... The key-function of R&D usually deserves a specific analysis because of its great importance given by both technologies and human resources involved.

Practically, calculus starts with the so-called "maximum investment exposure", a worst case scenario which estimates the highest possible loss that the project might create. Then, deeper costs analyses focuses on predictions about possible amount of both R&D and marketing costs, usually the most expensive along the entire NPD process. Company has to consider all the resources already available, their future allocation and eventual supplementary contributions required to

complete any task or activity. Planning and deadlines become crucial matters to effectively conduct these analyses, then the company should adopt some of the following techniques to receive correct inputs about timing and process length:

- Payback period: method which offers indications about the time needed to return from the investment required by the NPD process (Exhibit 2.3³⁸). Differently from the indexes computed in the economic analysis, the payback period is a temporal analysis and it assumes constant present values (PV). The crossing point indicates the right moment in which the company equals the investment sustained: moving on from the intersection, the company may forecast when the new product is able to generate profits.

(Exhibit 2.3) – Graphic representation of the Payback-Period



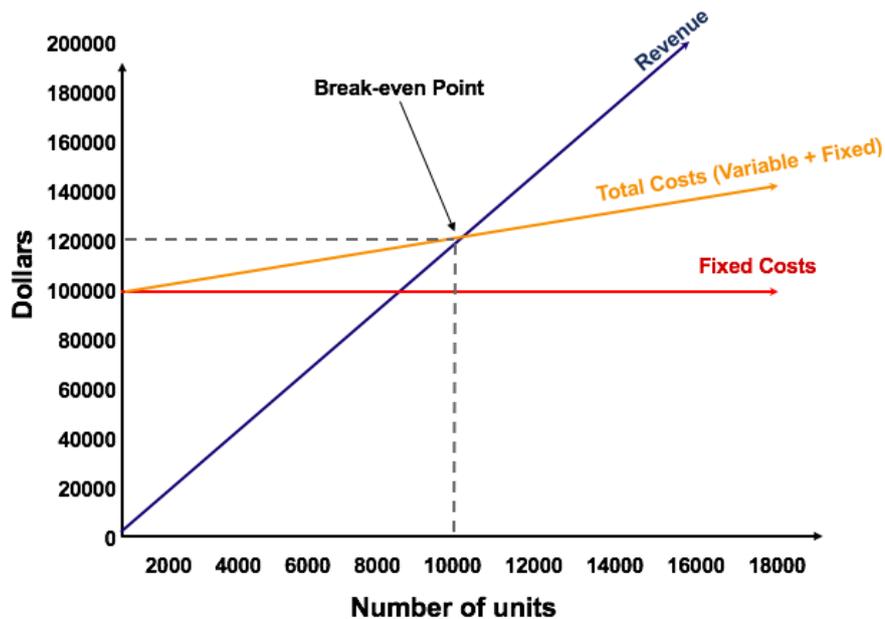
- Break-even point (Exhibit 2.4³⁹): method which take into account all the costs generated by the company during the NPD process, specifically divided in variable and fixed components. Costs are considered both separated and jointly, then they are projected against predicted revenues. The crossing point (break-even) indicates the exact quantity needed to equal the efforts sustained during the investment. A production greater than this number conducts to profitability, while lower quantities than the intersection are translated into losses.

³⁸https://www.google.com/search?client=firefoxbd&channel=crow&biw=1138&bih=527&tbm=isch&sa=1&ei=_Fa7XMa8A4e8kwWL3KJY&q=payback+period&oq=payback+period&gs_l=img.3...122173.124121..124258...0.0..0.0.0.....1....1..gws-wiz-img.GKPBjFG-NFY#imgrc=DhB4NABI596QsM:

³⁹https://www.google.com/search?q=break+even+point&client=firefoxbd&channel=crow&source=lnms&tbm=isch&sa=X&ved=0ahUKEwj14cq019_hAhUusaQKHSSAhcQ_AUIDigB&biw=1138&bih=527#imgrc=uyChoKt49plGYM:

Differently from the payback period, this method doesn't give temporal indication, but the combination of both techniques may offer clearer indications. Of course, the same method, by supposing an eventual price applied to the units to sell, it might express indications even in terms of money to provide further specification to the company.

(Exhibit 2.4) – Graphic representation of Break-Even Point (BEP)



Whatever the analysis or the index, experts should provide clear indications about the assumptions or hypothesis behind any calculus and, above all, they must be able to predict any potential risks in front of the company.

2.5 - Stage 5: Design and Development

In the previous stages, ideas lived phases of identification, screening, evaluation and business feasibility, both in terms of economic impact and financial requirements. The most relevant were translated into concepts capable to reflect their effective potential and lots of analyses supported them along further tests. Now, once the product concept has been accepted and the project seems financially profitable to return on the investment, it comes the time to physically realize it.

The fifth stage is the core of the new product development model proposed by Booz, Allen and Hamilton: it includes activities such as prototype realization, product development, simulation and marketing test. According to Cooper (1999), in this stage are invested, on average, more than one third of the total NPD expenditure, mostly of which directed to the R&D department which has the specific role of turning product concepts and ideas into physical entities.

Generally, the crucial interaction is played by technologists and engineering teams with marketers: the formers elaborate prototypes by following guidelines received from previous stages. They don't care about costs potentially generated by materials, technologies, equipment, personnel and training, utilities and other factors; the latter takes continuously into account financial requirements and budget constraints to realize outputs capable to reach company's goals and profitability. Due to their complementarity, strong collaboration among these players is mandatory to obtain successful results: verification and coordination are executed by NPD operating committee formed by managers, experts and product specialists.

First of all, the NPD committee validates the business analyses. Then, a team formed by technologists or engineers submit development proposals about precise prototypes to another team formed by pure economists, who have to deeply analyse it by focusing on financial requirements such as costs of future realization and profits possibilities. The more complicated the idea, the more detailed has to be the prototype: not only it has to answer to all the questions emerged during the precedent phases, moreover it has also to provide technical and detailed information about feasibility and timing. If the company selects more than one product concept, the former team must develop one prototype each: clearly, it is very expensive both in terms of time and money and budget constraints may be very restrictive. Finally, once the proposal is accepted, the prototype is developed and analyses are validated, testing must be started to examine product functionalities, features, design, psychological aspects and marketing mix rules.

Beyond the structure, generally the execution of the process might require even years: during this period, some dramatic changes of the environment may happen exactly when the development stage is still in progress.

The company spent time and money in the previous stages to collect truthful information about the market and, once the final output is generated, customers are not attracted anymore. Faster competitors might have already satisfied them, more relevant unmet needs might be emerged, vital suppliers failed or it became impossible to make efficient agreements, new laws banish critical materials or technologies integrated in the new product turned on obsolete. Whatever the reason, all the company's efforts converted in a huge failure: in these cases the risk of completely disappearing is real and enormous.

Nowadays lots of firms concentrate all the resources in the generation of one single product but, if the conditions changes so badly, they are automatically out of the market, sometimes even in bankruptcy. To avoid these dramatic epilogues, firms must reduce development time as much as possible, in order to minimize the unpredictable impacts coming from the external context. In this

way there are less probabilities that the market changes radically: quicker the company to introduce the new product, higher the possibility of meeting the predicted target, the established supplier, the same political environment and competitive scenario. Especially on the market, shorter development times bring advantages over rivals in the case they plan to introduce similar products. Moreover, this speed might also be translated into profitability: company that provides quickly the new product gains the so-called first-mover advantages, then it is capable to impose premium prices, to reach market leadership and to increase own reputation.

According to Booz, Allen and Hamilton, key issue of this stage concerns how to reduce the critical development time. First of all, it has to be clear what includes this period because there is not an unique definition and its length varies from one company or project to another. Basically, it covers the time to develop a new product, from the end of the business analysis stage to the beginning of the commercialization phase. Some companies exclude phases of market testing because of its variability which depend on diverse techniques adopted by the team.

The aim to shorten the development time can be reached through different paths:

- **Parallel processing:** by overlapping activities the total development time is highly reduced. Rather than sequentially, the company compresses many activities by working on parallel and it deletes useless and expensive waits. This method needs strong coordination throughout the functions and continuously involvement of responsible: in this way, one activity has not to wait the end of the precedent, differently both are carried out simultaneously. Clearly, not all the NPD activities can be overlapped and sometimes risks may increase. Advantages obtained by parallel processing, beyond the shorter development time, are translated in improvements about activities coordination and communication, by solving potential problems across the functions. The adoption of this method implicates continuous measurement of progresses ongoing: plans are essential to successfully manage all the functions involved, while reverse scheduling is decisive to respect fixed deadlines and activities coordination;
- **Cross-functional integration:** strong collaboration among teams formed by representative members of different functions involved in product development, such as R&D, engineering, marketing, etc. From the fifth stage, when the team of expert engineers propose first raw prototypes to marketers, cross-functional integration is strongly recommend to efficiently work together in order to speed up the entire NPD process. Through this approach all the knowledge required are around the same table and continuously in touch each other: their frequent communication is essential to both shorten development time and

immediately react to eventual problems. The degree of team cohesiveness is decisive: members coming from different functions have transversal competencies and responsibilities, thus they must rapidly share true and transparent information. Collaboration must include even technologies, software and know-how, while hierarchical matters must be passed;

- Make-or-buy and outsourcing: pure economic move of the company in order to faster the NPD process. By studying the composition of the new future product, the firm is able to understand the amount of time and money that each activity or specific part require. In this way, company may study the presence of these components on the market and it detects if it is more convenient to acquire them externally (buy) or, instead, it is more profitable to produce them internally (make). The same possibility is evaluated by examining the activities involved in the NPD process: if tasks are very complex, knowledge are superficial or technologies are obsoletes, then the company may consider more convenient to ask an external support through what is known as ‘outsourcing’. Clearly, once the company decides to collaborate with a third part, a very high degree of coordination and trust is mandatory.

Finally, a strong recommendation and common practise to face the external unpredictability is to include from the early stages and throughout the NPD process both customers and suppliers. As the innovation evolves from one step to the following, company should reassess benefits, shape, market, position, technology and marketing conditions in order to increase chances of introducing a successful new product. Then, continuously interaction with key protagonists such as receivers and providers might be decisive in order to understand what are the concrete variables to change and which aspects, instead, are assessed.

2.5.1 - Focus: Conjoint Analysis

Throughout the whole fifth stage lots of techniques are used in order to design and develop the most effective product. Beyond those described above, there is a valuable tool diffused and adopted everywhere thanks to its reliability and simplicity: the conjoint analysis.

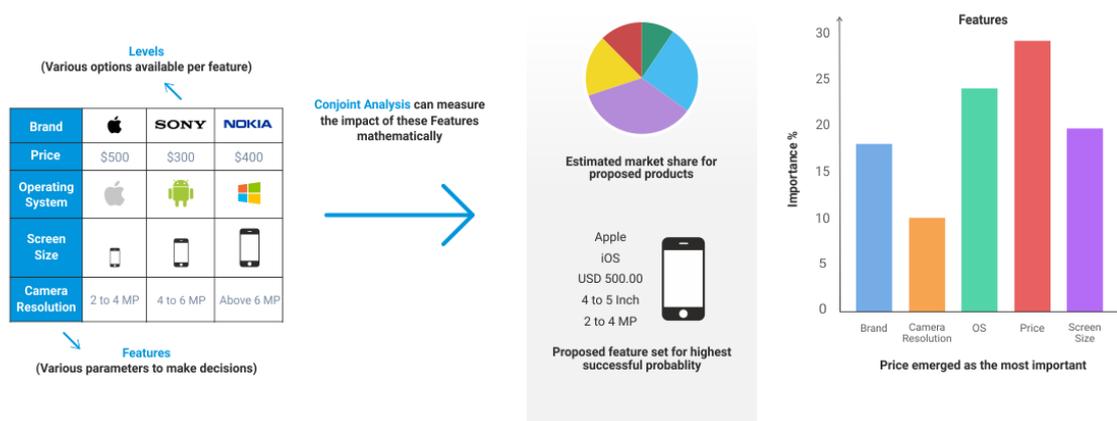
Generally, it aims to deeply understand customer’s needs to both satisfying them and introduce profitable products: for this reason this method is capable to influence decisions concerning market segmentation, competitive scenario and marketing mix 4Ps⁴⁰. Its main purpose is to give reliable indications of the market to organize an effective launch. From a quantitative perspective, it

⁴⁰ Product, Price, Place, Promotion

clarifies which product the customers prefer and which features are the most relevant for them: based on these indications, at the end, the company should be able to select the right product empowered by those features decisive to conquer the right segment.

The original product is initially decomposed on a set of most relevant features, called “attributes”. The example below (Exhibit 2.5⁴¹) shows a conjoint analysis executed on the smartphone industry where the features considered are: brand, price, operating system, screen size and camera resolution. Each attributes include different modalities, called “levels”: according to the example, looking at the attribute “Brand”, modalities proposed are: Apple, Sony and Nokia. Finally, a combination among levels of different attributes generate several versions the company asks to evaluate to the customers: these are called ‘profiles’ or ‘stimuli’. One profile shows an Apple smartphone with an iOS operating system, a small screen size and a camera resolution from 2 to 4 MP, for a total cost of \$500. Clearly, different profiles are evaluated at the same time: according to the traditional conjoint analysis based on the additive model, the winner is the profile whom the sum of the levels of each attributes produces the highest utility. Obviously, thanks to the decomposing nature of the conjoint analysis, it is possible to apply also the so-called “full-profile method”, a reverse approach which starts from global evaluations of the already completed profiles and successively estimates preferences towards single attributes and levels.

(Exhibit 2.5) – Example of Conjoint Analysis in the smartphone industry



Whatever the case, to obtain correct indications about the importance customers assign to each level, attributes or profile, they are asked to numerically express their preferences through single marks, ordering methods or ranking classifications. In this way, experts can easily understand which aspects deserve more attention for the identified segment of customers, by gaining a better

⁴¹https://www.google.it/search?q=conjoint+analysis&source=lnms&tbnm=isch&sa=X&ved=0ahUKEwjvkvMEz-3hAhXR_qQKHf18DM0Q_AUIDigB&biw=1366&bih=632#imgrc=HpWTjBZ7CiUQTM:

comprehension of the market and focusing its efforts on the right direction. In the example above, at the end, the product with the highest chance of success would should be an Apple smartphone with an iOS operating system, a screen size from 4 to 5 Inch and a camera from 2 to 4 MP, for a total cost of \$500. It appears very similar to some profiles already proposed, but differences in screen sizes helped the company to understand customers' wish of bigger smartphones capable to offer a more comfortable visualization: then the company refines and improves its initial proposal.

Conjoint analysis offers many advantages: first, the firm can simultaneously ask for different versions of the same product and, at the end, the company introduces a product with very high chances of success. Second, thanks to its internal algorithms, it helps to select only those attributes considered 'interesting': if a company plans to introduce totally new product with extravagant features, conjoint analysis automatically selects the 4-5 most relevant capable to attract the highest percentage of receivers. In the example above, it appears evident that customers are not interested to which games are into the smartphone or which is material was used during the production. Indeed, this selection is useful for other reasons: usually the more attributes are in the product and the more stimuli are generated, but customers may be unhappy and annoyed to reply to unlimited profiles. Last but not least, the company is pretty sure that all the feedbacks received can conduct its efforts towards the right direction. Of course, statistical method such as multiple regressions have to support the conjoint analysis, while huge database are important to collect feedbacks and recommendation which need further examination by analytical experts. Moreover, as seen in the example above, attributes can touch even aspects not physically linked to the tangible product: investigation sometimes asks about different level of prices, packaging materials or brand names. Prototypes, models or images might be presented to customers to facilitate their choices.

As any method, even conjoint analysis has negative aspects. Because of the huge amount of information provided, problems may emerge especially during the steps of translation and codification of the inputs received by the customers. Sometimes receivers are not clear in their indications or neither on assuming an evident position. Moreover, some appreciated attribute may be linked to another which received only negative feedbacks. Indeed, it is true that conjoint favourites the recognition of the 4-5 most relevant features, but it persists the risk of excluding some decisive ones: usually customers are really interesting about smartphone's battery length or processor speed, but in the example above these features don't appear. Finally, especially by adopting another kind of conjoint analysis based on pairs evaluation of partial profiles, customers preference may bring a double counter-effect: 1) they don't like both profiles proposed but, because of mandatory responses, they may give fake indications to the company; 2) they might appreciate

both pairs, but forced to express only one preference, the result might be the exclusion of powerful attributes.

Recently, it emerged the possibility to exploit the conjoint analysis potential online: through Internet is now possible to reach simultaneously huge number of respondents, with the main advantage to let them to answer by home and when they prefer. Moreover, web-based conjoint analysis offers the opportunity to better understand innovations proposed thanks to animations, images, videos or other modalities of visualization and support. Finally, it lets also select specific samples of respondents based on demographical aspects previously filtered and registered.

2.6 - Stage 6: Testing

Together with the fifth stage, the sixth is the most important of the entire NPD process.

Once collected all the inputs received from the market, the company has to simulate product acceptance in the segment to which refers, by considering all the marketing and sales variables that influence the reality. All these tests are executed before the launch: objective of this stage is to provide, at the end, a full and complete validation of the entire project.

Testing is not focused only on product's features or customer needs, but it verifies many aspects such as concept validity, prototype efficiency and marketing effectiveness. Tests and probability of failures are linked by an indirect relationship: the more the number of tests executed, the lower the chances to face unsolvable problems during the introduction. Some primordial tests are conducted even during the fifth stage in order to rapidly correct potential incongruences which arise on the development phase: on the sixth phase tests become extremely intensive.

Generally, analyses focus on aspects concerning the product itself: physical features, packaging, perceived benefits, new functionalities and added value to the customers. Testing goes beyond these dimensions: not only tangible aspects, but also marketing conditions, brand name, market size, consumer's behaviour, economic risks, competitive scenario and rate of adoption. For each field, tests markets are capable to catch quantitative results through empirical researches and qualitative feedbacks about customer satisfaction, preferences and purchase intentions.

Clearly, because of the diverse typology, these tests are conducted in different moments: the greatest part is executed before the introduction of new products, in order to have more comprehension of the market in terms of concept potential and data consistency according to the analyses computed in the previous stages. Market behaviour studies, consumers purchasing

attitudes, concept evaluation, product name and packaging testing are all simulations activated before the introduction. The aim of these analyses is to ensure that all the necessary requirements and product specifications meet both customer needs and company's goals.

Another part of studies, instead, is conducted after the introduction and it focuses on the impact generated by the new product once presented to the market: advertising strategies, financial measurements and statistic investigations are part of these other tests. Especially, usability is recorded according to frequency of usage and rate of adoption. The goal the second front of testing is to comprehend how the new product is performing in the final environment.

Generally, market tests are based on marketing aspects such as:

- Target: deep identification of segment or customers to whom the product is directed. Receivers must be identified according to different dimensions: eco-demography, through criteria like sex, age or purchasing power; psychology, by studying their lifestyles and purchasing behaviour; geography by focusing on where they live and which services or infrastructure are available in those locations; culture, through the investigation of their values, beliefs, customs and social attitudes. The peculiar examination of these criteria let the company determines market's boundaries to correctly introduce the new product and increase chances of receiving faster positive acceptance;
- Product name: key element which deserves full attention of the company. Business history teaches that many products failed just because of wrong naming. First, company must create consistency with its brand: colors, letters, typography, symbols and eventual pay-off should be transferred to the new product during the phase of naming identification. Language variations must be taken into account: many firms introduced products with different meanings from one Country to another and in some cases they were forced to revise or even retire their proposals. Naming should be able to immediately connect the product both with benefits offered and company behind. Best suggestions in order to make the right choice are: short, easy to memorize, distinctive, coherent and intriguing. Clearly, it should be legally compliant and, once selected, it is recommendable to protect it through patents. Brainstorming or internal surveys are useful methods to evaluate many proposals empowered by creativity and reliable feedbacks;
- 4Ps: firm critically evaluates all the marketing mix variables. Experiments on price's strategies are based on historical data or market researches: usually, company asks directly to customers which price should be the most suitable. Lots pricing techniques exist, from the

psychological one which exploits ‘the power of 9⁴²’ to others combined with sales methods, as described later. Company must have clear the specific type of product to make decisions about production, packaging and transportation: it has to be sure to introduce the right quantity at the right conditions. Excesses or scarcity of stock need to be avoided, while tests on humidity storage conditions and temperature should be implemented to guarantee a positive introduction. The new product might be launched through company’s own channels or by wholesalers and retailers: logistic decisions focusing on internal or external resources are evaluated together with a peculiar examination of the environment outside in terms of infrastructure and linkages. Promotion may be implemented according to both budget constraints and management decisions. It should help during the early stages of introduction but its costs may be dramatic especially during the trade-off phase. Moreover, its implementation may late the launch and then it might also be ignored by customers;

- Production efficiency: once the company has clear the new product, it has to understand how to increment profitability. Through the developed prototypes evaluations concerning production improvements may be carried out by focusing on the possibility to exploit product platforms or create component-by-component systems. Through modular approaches the company gains higher manufacturing flexibility, which is translated in higher response to the market and lower risks: moreover, component-by-component systems lead other services like customization capable to bring competitive advantages over the competition. Other strategic and evaluated opportunities to increase production efficiency might be: postponement of some activities to reduce inventory risks and increase prompt reactions; vertical integration with suppliers to gain powerful economic advantages, both in terms of price reduction and delivery speed; outsourcing of costly activities to improve process efficiency and avoid blocks of production and useless waiting time.

Company, based on its strategy, decides the kind of test to execute: different industries need diverse typologies, but there are realities where both pre-launch and post-launch tests are mandatory. Recently, companies are converting more and more towards the so-called “Green design” : based on ethics and social causes, they develop environmentally friendly products, capable to increase firms’ recognition and, consequently, financial performances. Usually, companies which pursue these routes may apply two strategies to reduce environmental negative impacts: 1) actions against pollution executed during the production and development of the new product, such as careful respect of social protocols or exploitation of ecological materials; 2) actions computed after the utilization of the new product, such as recycle optimization or re-usage of product’s components.

⁴² Some Countries like Spain adopt, differently, ‘the power of 7’

Obviously, a continuous integration of customers' feedbacks and inputs is critical in order to fight a common cause and not a niche's problem who might find the negative opinion of the majority.

Testing depends on the degree of innovation introduced: if the company is experimenting a totally new product, tests become more and more complex because of the huge level of information that has to provide. To overcome the obstacles, the company may elaborate, thanks to external specialists, beta testing to stimulate customers adoption especially during the early stages. In more complicated cases, instead, the company may even decide to plot customers in futuristic environments: this approach is known as Information Acceleration (IA) and it is able to transfer the receivers in particular context with new different perspectives.

2.6.1 - Stage 6: Pre-test Market

The most front of testing is effectuated before the introduction of the new product, in what is better known as pre-test market or pre-launch forecasting. Always the companies reach true and reliable data once it has introduced the new product into the market, but differently they are not able formulate definitive conclusions before the launch. For this reason, further considerations are carried out through different methods. First, when the product concepts and prototypes are refined, many analyses try to simulate the purchasing experience: advertising, magazines or whatever media appropriate to the product category is exploited to evaluate initial consumers' reactions by asking them perceptions and preferences. Incentives, place promotions and pricing techniques are applied to create a market environment as real as possible. Practically, some diffused techniques are:

- Simulated test marketing: basic method which carefully examines company's real and potential receivers. After a deep analysis, it extrapolates customers who are considered very 'hot' for that specific product category where the new proposal will be introduced. Once completed the investigation, company invites the chosen ones and it offers them coupons for shopping. When customers come to the stores or the POS⁴³, company catches if their choice is directed to the new product or competitors' proposals: thus, salesmen offer free samples to those who still prefer competitor's product, in the attempt to both change their purchasing intention and diffusing firm's recognition;
- Sales Wave Research (SWR): pure strategic technique where the company experiments the new product by starting with free samples offered to the consumers. Successively, the product is proposed to the same respondents on a discounted price for a specified time period, usually from one to three weeks. Finally, the product is introduced to the market at

⁴³ Point of Sales

an higher price, coherent to what established during the precedent stages. On any phase, researchers analyse consumers' behaviour by measuring their satisfaction and their purchasing intention;

- Market tests: geographical repartition of the market where the new product has to be introduced. The firm identifies specific cities or regions: these places are able to guarantee a rapid coverage of all the areas selected. Once selected, they are ranked according to company's objectives. Tests duration is coherent with the importance of any city: according to each area are applied different marketing techniques by respecting cultural, psychographic and geographic aspects. Finally, through consumers panel surveys, marketing researches and dealer or retailer store audit, it is possible to collect truthful information;

Other simpler marketing tests and techniques may be applied directly at the company's shops or stores: shelf allocation to gain visibility, strategic display through well-designed and meaningful packages, local advertisement or premium promotions capable to catch both customers' attention and retention towards the new product and the company behind. Colours, shapes and other indirect attributes are examined several times in order to comprehend the diverse degrees of excitement and curiosity they are capable to generate in consumers' minds: in this way it is possible to understand both levels of interest or preferences and their intent to purchase.

Overcoming these tests greatly increase chances to have rapid and positive feedbacks from the market once the product will be finally commercialized.

2.7 - Stage 7: Commercialization

In the last stage, when Booz, Allen and Hamilton concludes their NPD model, there is the commercialization.

The original idea became a physical product by passing throughout the NPD stages which refined and analysed its potential and adaptability in the nowadays reality: once all the tests are completed, it comes the time to finally introduce the product into the market. This phase, which concludes the entire NPD process, starts from all the market researches and tests conducted in the previous stages: it has the aim to conduct towards the most effective key decisions capable to generate both positive financial performances and customers satisfaction. If the NPD process has provided reliable data while analyses were rigorously executed by facing the crude reality and respecting significant parameters, then chances of successful introduction are high; otherwise, if many variables were

ignored and there was poor comprehension of the externalities, possibilities to make the right choices dramatically decrease.

What are these key-decisions the company should make to successfully introduce a new product into the market?

Based on marketing analyses computed in the previous stages, company needs to answer to:

1) Timing - When to launch?

Everyday new products come into the market. Their rates of success depends on different factors: one of the most relevant is timing of introduction. Indeed, not always the product is launched once completed because the company may prefer to wait for several reasons. There are different timing strategies: 1) First-mover advantage: in the fifth stage was highlighted the crucial matter of reducing as much as possible the development time in order to anticipate the competitors. In this way the company can present own proposal before the competitors to gain advantages such as: being the first to show its innovation to the customers, the company might immediately conquer an important market share; receivers might really appreciate the new product on a level to ignore future similar proposals coming from competitors; if the product is really effective, company might become the market leader and dictate the rules on the short-run; 2) Parallel entry with competitors: even if the development time was shortened to guarantee a faster entrance, the company might decide to wait the competition as well. First-mover move has also disadvantages, especially it let competitors to spy new product and collect relevant information about early market's reactions. Moreover, the same innovation might be copied and successively proposed at lower prices, with the final result of creating an enormous advantage just to the competitors than the company's original producer. To avoid any positive or negative effect generated by first-mover entrance, firms prefer synchronize the introduction with competitors' launches: they believe own new product superior than the rivals and, by arriving into the market at the same time, there is no time to copy its best features; 3) Last-mover advantage: reverse approach based on the experience learned from faster competitors. It resumes both advantages and disadvantages mentioned above and it is the most used technique of the leaders. Based on own high market shares, giants prefer to wait first customers' reactions and competitors' proposals in order to develop and launch effective new products.

2) Location – Where to launch?

Marketing analyses computed during the testing stage exploited demographic and geographical criteria capable to highlight the most recommended areas where to introduce

the new product. Anyway, location has to take into account many other aspects: first of all, if the company is directing its products to mass market, selected segments or specific niches. Then, boundaries have to be clarified: some zones are more profitable than others, then decisions might consider to cover the entire Country or just some precise regions or cities. Then, diffusion strategy has to be implemented: there are areas where the new product has to be immediately introduced, while in other place it is planned to arrive later. Decisions may be linked to strategic goals pursued by the company: some markets are classified as ‘not relevant’ or the strong presence of competitors may complicate positive introduction of new products.

3) Strategy – How to launch?

All the marketing mix aspects tested during the sixth stage are agglomerated to form the most effective background and support the new product launch. Promotion, through the coherent media of the referred industry, is studied and analysed by respecting budget constraints; place is organized on parallel with location: massive introduction opens up to worldwide distribution, market segmentation orients to exclusive channels; pricing, coupons, discounts and other dynamics linked to sales are examined against expected volumes and possibilities to gain both economies of scales and distribution. Social initiative, public relations, training personnel and ethic politics should have relevant impacts to formulate and design the final strategy.

4) Receivers – To whom?

Finally, the key question is always the same. Target definition was provided during the previous stages and it evolved on the sixth: now, it is required to deeper comprehend product’s rate adoption after the launch. The company must have to be clear the amount of information needed to accelerate the diffusion of the new product and the level of knowledge required to favourite the full comprehension. Higher the degree of innovation applied to the product, higher the amount of information the firm should provide: the less the product is understood, the lower its rate of adoption. Company should also understand which factors incentive the acceptance and which ones discourage it: ineffective communication, wrong media or bad testimonials might be causes of new product rejection.

Once the company answers to these crucial questions, the innovation is ready to be commercialized and finally launched: it might be introduced through special ceremonies, press conferences, virtual presentations or simple invitation to the store. Modality depends on both resources availability and previous decisions. Independently by the form, once the new product is into the market it becomes

crucial to check and measure the results. Techniques such those post-tests market aforementioned on the sixth stage might help the investigations, while surveys should continuously monitored. Always incongruences from the expected reality arise: whatever the case, the faster the reaction, the lower the damages. Moreover, checking might assist further refinement and better comprehension of the market, in order to empower the already introduced product and prepare the field for those which will be launched in the future.

2.8 - The Adoption Process

The key question companies face during the commercialization stage concerns how the new product's receivers behave when the innovation is finally launched. Many studies focused on rates of adoption and answers were found on by looking at one process passing through different stages, as shown below (Exhibit 2.6⁴⁴).

(Exhibit 2.6) – Graphic representation of the Adoption Process

| Stages in the Adoption Process | |
|--------------------------------|------------|
| 1 | Awareness |
| 2 | Interest |
| 3 | Evaluation |
| 4 | Trial |
| 5 | Adoption |

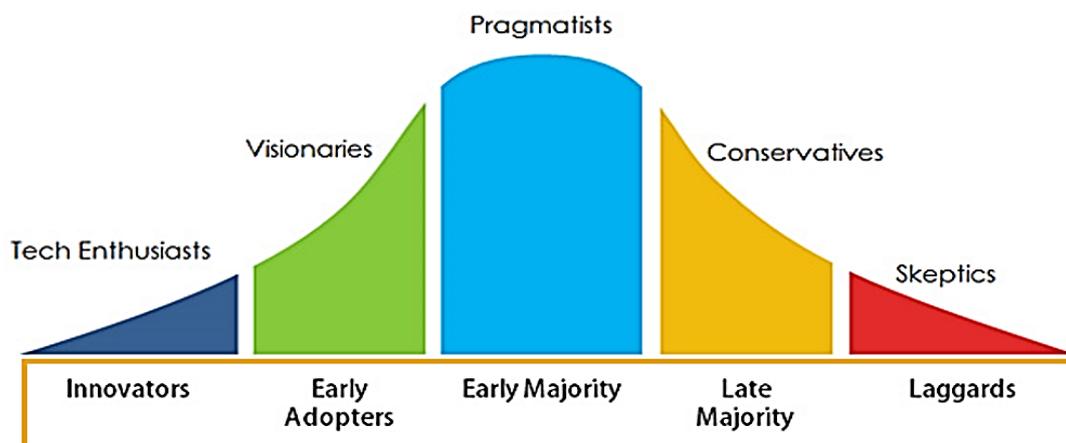
When the product is introduced to the market, the process starts: through media exposure, virtual banners or physical visualization, receivers almost immediately understand the existence of a new opportunity. Unfortunately, they still lack of information: chances to push customers towards the following phases of the process depends on company's ability to both develop the new product and the context behind to rapidly stimulate consumers' minds. If the company has acted well, then receivers will look for further information about the new product, moving to the second stage: interest. Company, through salesmen, may obtain great advantages by providing information required through personal interactions. Customers move to the third stage where all the dynamics

⁴⁴https://www.google.com/search?q=the+adoption+process&client=firefoxbd&tbn=isch&tbs=rimg:CaVwXtbG2LAdIj jgcRpjtMidB5bS7tCFz2SFmAwgl4znVmPCqvxp1U1g_1HfW_1V9IUJmHOtoDNdQsk6I2mcRNSK2ioSCeBxGmO0y J0HEW30QCnAfZiKhIJltLu0IXPZIURbfRAKcB9n6IqEgmYDCCXjOdWYxFt9EApwH2foioSCcKq_1GnVTWD_1E VNASNDtPbz_1KhIJ68d9b9X2VQkRwik_1yUswyQqEgmYc62gM11CyRHBC40kmbvCzCoSCTojaZxE1IraEdhPEX MZov0D&tbo=u&sa=X&ved=2ahUKewjOk7mW2fDhAhUS66QKHVpED8gO9C96BAgBEBs&biw=1138&bih=527 &dpr=1.2#imgrc=pXBe1sbYsB2MYM:

linked to marketing mix become relevant: price, quality, time-delivery, post-sales services such as warranties or eventual refund and other factors are examined in comparison with competitors' similar products. Beyond company's efforts, the evaluation stage includes also individual customers' dimensions, such as own purchasing power, external influences or internal values and beliefs. When evaluations end, customers move to fourth stadium: trial. Only by using the new product receivers may solve last doubts which separate them from the adoption: differently from the second stage in which an high level of explanation and information was required, now it becomes decisive to offer unique experiences to the receivers. Finally, if customers are convinced about the previous stages, they decide to effectively adopt the new product: company has to monitor them in order to guarantee continuous support and detect data like usage frequency or interactions. Generally, companies' objective is to lead significant percentages of their customers through this stages as quickly as possible.

The adoption process is not standard: some customers move from one stage to another by jumping middle steps, while others may directly adopt the product once they discover the company behind. Price and quality are two key factors about product: the lower the price, the less complicated will be the adoption; the more the quality, the more probable will be the final purchase. Clearly, both 'laws' are reversible applicable: very expensive innovations need lots of analysis before to be finally adopted, while poor quality products don't encourage the purchase. Because different speeds of adoption vary from one customer to another, many studies were conducted to obtain better comprehensions of the market. Finally, five categories about the rate of adoption (Exhibit 2.7⁴⁵) were universally identified.

(Exhibit 2.7) – Graphic representation of the Rate of Adoption



⁴⁵https://www.google.com/search?client=firefoxbd&channel=crow&biw=1138&bih=527&tbm=isch&sa=1&ei=r0LLXJDsEJ2ajLsPWD0Ac&q=rate+of+adoption&oq=rate+of+adoption&gs_l=img.3..0i1914j0i5i30i19j0i8i30i19.10132.13020..13137...1.0..0.170.1970.1j15.....1....1..gws wizimg.....35i39j0j0i67j0i30.ZXS wk82uSWY#imgdii=U12bD4HSTDwFvM:&imgsrc=ty48_P6DHEVoFM:

First adopters, which compose only the 2,5%, are called ‘Innovators’: they are categorized as “Tech Enthusiasts” because, based on high purchasing power and cultural background, they are very risk-adverse and willing to adopt almost unknown innovations. They are crucial for the company and for the effective diffusion of the new product: the firm may provide them some primordial prototypes or beta testing and ask them to help the company during the development stage: through them the company aims to obtain real ambassadors of its new technology. The 13.5% composes the green bar renamed ‘Early Adopters’, to indicate the “Visionaries”: they have enough purchasing power and may play key roles of opinion leaders towards the market. Both light blue bar and yellow bar reach 34% each and form, respectively, the ‘Early Majority’ and ‘Late Majority’: the first category is named “Pragmatists” and it is composed by customers who adopt the product earlier than the average people; the second group is renamed “Conservatives” and it includes the most sceptical. Differences among these two categories concern economic resources, external influences, social groups’ impositions and identification, etc. Finally, the last 16% is composed by the so-called ‘Laggards’, those who usually don’t have great purchasing power and for this reason adopt the new product only when all the information and feedbacks are available. These are renamed “Skeptics”, because of their aversion to change.

2.9 - Key factors to product effectiveness

Independently to the industry or the market to which the new product refers, there are fundamental key drivers capable to determine an effective launch. According to many experts, not only aspects directly linked with the product are crucial to reach the hoped profitability: indeed, company behind and its solidity are the responsible of final results and NPD’s process success.

By starting from the new product itself, many researches highlighted the importance of five key characteristics that any product or service should possess in order to incentive customers to adopt it:

- a) ‘Relative advantage’: a new product has to include something really new, capable to attract the customers. There are no rules about the degree of innovation: from one side, an incremental improvement might be not decisive and already included in competitors’ proposals, from the other, instead, a radical change may be not understood because of its complex nature. What is relevant is the real benefit generated by the new product. The relationship is evident: the greater the relative advantage of an innovation, the higher will be the demand and the faster its adoption.
- b) ‘Compatibility’: the introduction of new products in totally new environments is not simple, especially when there is incompatibility with any devices or instrument. Differently, it’s

really important to create consistency among what is already available in the market and what is coming: from company's perspective, compatibility with other existent technologies should guarantee great advantages in terms of saving money and idea generation; from customers' perspective, to possess devices perfectly suitable with the new product is a strong and concrete reason to buy. As for the relative advantage, even in this case there is a direct relationship: the greater the compatibility, the faster the adoption.

- c) 'Complexity': radical innovations might be the most effective but usually they need an high degree of information because of its revolutionary nature. Customers might be not available to invest their time in the innovation understanding, even if it may offer more benefits than competitors. The Dvorak keyboard was a clear example: both switching costs and difficulty completely blocked the customers. Then, differently from previous characteristics, there is an indirect relationship with adoption rate: higher the complexity, lower the adoption.
- d) 'Divisibility': customers are usually adverse to new products, especially if they include high degrees of innovation. Once they have the possibility to try it, they become more and more confident on purchasing decisions. Some methods aforementioned above, such as free samples or trial, are available for pre-determined periods: by the way, because of the direct relationship with the adoption rate, it might be convenient to enlarge as much as possible this time.
- e) 'Communicability': effective marketing plans are decisive especially during the early stages of the adoption process. Communication must be transparent, direct, rapid and above all simple. Information and clarification should be provided to any direction, both internally and externally. Forecasts and results have to be shared throughout the entire NPD process, while feedbacks should be transferred even outside to increment the direct relationship existent: the greater the communicability of the new product, the faster its rate of adoption.

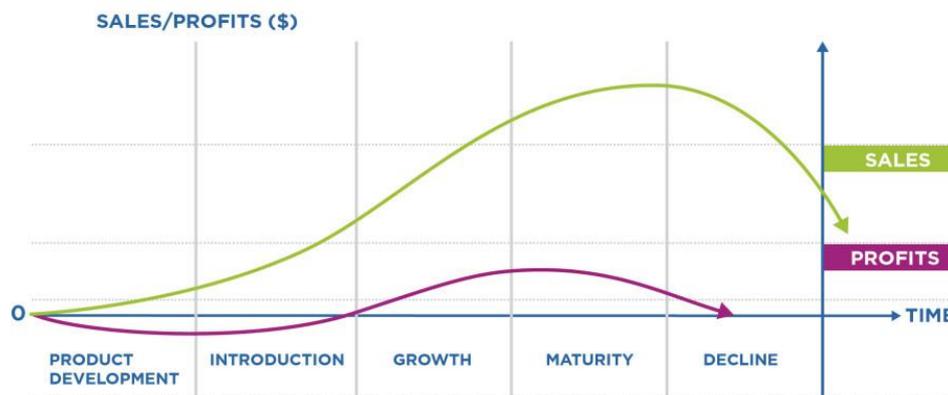
As these key characteristics play a vital role for the new product in order to be rapidly adopted and accepted by the market, other factors behind and not directly linked with the innovation are crucial in order to guarantee consistency with the NPS established at the very first stage.

2.10 - Product Lifecycle

As for the NPD process and rate of adoption, other similarities across industries and companies emerge along the product's existence. Generally, any new product follows an S-curve which highlights its time evolution by recognizing five principles stages: product development, introduction, growth, maturity, decline.

The picture below (Exhibit 2.8⁴⁶) describes what is universally called ‘product lifecycle’.

(Exhibit 2.8) – Standard Chart of Product Lifecycle



Product lifecycle usually starts with the introduction phase: by the way, a phase ‘zero’ is played by the entire NPD process which anticipated the launch. Economic impacts are highlighted in the chart above, where the green curve shows the sales trend, while the purple one evidences the profits growth. Clearly, at this very first stage, both trends are negative: researches, development and testing costs caused huge losses, while no information and product availability have not allowed to sell. The slight positive inclination of the sales curve is due to the delivery of first prototypes (such as demos in the automotive industry): for this reason they cannot impact the financial performance.

Real first phase of product lifecycle is, then, the introduction. Conditions were previously forecasted and simulated, testing were already conducted and passed, thus NPD process is completed and the innovation is finally launched. This is the most critical stage of the whole product lifecycle and the most challenging for the company: greatest parts of innovations don’t survive to its impact.

As shown graphically, both curves continue to generate, on average, negative results:

- Sales start from ‘0’ and slowly increase: normal reaction of the market. Customers are still not conscious about the existence of the new product, then they might also involuntarily ignore it at the very beginning. At this stage is crucial the company’ ability on effectively communicate and inform the market, in order to speed up sales as faster as possible.

⁴⁶<https://www.bing.com/images/search?view=detailV2&id=F19278605B2CD3C66762F20C17BE87BD9E2C8287&thid=OIP.UCM7FbjJQc9wIDRG5-wbyAHaD7&mediaurl=https%3A%2F%2Fs3-us-west-2.amazonaws.com%2Fcourses-images-archive-read-only%2Fwp-content%2Fuploads%2Fsites%2F1505%2F2016%2F01%2F04105522%2FProduct-Lifecyclegraphicv211024x543.jpg&exph=543&expw=1024&q=product+lifecycle&selectedindex=0&ajaxhist=0&vt=0&eim=1,6>

Usually, in the introduction phase the company spends heavily on promotion to rapidly diffuse awareness of the new product. It opts for a penetration price in order to stimulate customers' interests and free samples are continuously proposed;

- Profits are highly negative: company faces the so-called 'trade-off' period, an interval capable to destroy the product and conduct into bankruptcy the entire firm. Clearly, because of the enormous efforts required by the NPD process, the company has to sustain huge initial losses. Costs are dramatically higher than revenues and, if the product is not capable to immediately attract customers, it will be rapidly out of the market.

Second phase of product lifecycle is the growth. Knowledge and information about the new product are diffused, thus first reactions and feedbacks emerge. Customers adopt the innovation and, once attracted, recommend it to others, generating a virtuous cycle for the company. This phase is decisive because it gives important indications about the future and it let understand the effective potential of the innovation. Graphically, both curves increase:

- Sales: customers are conscious about the existence and the availability of the new product. Then, if the degree of information provided by the company was exhaustive and the concept was attractive, they should start to adopt it. Sales may vary according to variables directly related to the product such as price and packaging or indirectly linked to it such as customers' purchasing power or competitors' proposals. Company begins to reduce efforts on promotion because target audience was already reached, while it arises prices in order to recover costs sustained during the NPD process;
- Profits: after facing the negative trade-off, company finally starts to revenue. Profits are clearly related to the quantity of units sold, but strategic marketing mix decisions might accelerate the achievement of financial targets pre-fixed.

Third phase of product lifecycle is maturity. Together with growth, this is the most profitable phase: customers well-know the innovation and both early and late majorities are adopting and recommending it. Company should exploit and extend this time as much as possible.

As shown graphically, both sales and profits are reaching the highest level of the curve:

- Sales: higher and higher volumes are produced. Company might reduce prices to enjoy economies of scales and distribution through the greater amount of units sold. Promotion may continue even if efforts are reduced: anyone knows new product's functionalities, then there is no reason to spend on advertising. Moreover, company may enjoy word-of-mouth benefits to still attract new customers;

- Profits: revenues increase on parallel with sales. Trade-off phase is passed and finally the company reaches quantities over the break-even point: because company needs to extend this time as much as possible to reach higher profitability, it should focus on post-sales services such as warranties, fast-delivery, customer care and assistance and premium or additional benefits: the more customers are satisfied, the more the maturity phase continues.

Last phase of product lifecycle is decline. The market adopted the product and enjoyed its potential, but now a new innovation is coming. Company has to be ready to face the natural behavior of the market: everyday, competitors or even the same firm may introduce new products capable to erode market share, accelerate the lifecycle and sign the end of the previous innovation. Company should be able to understand when is the right moment to abandon the field: it is not an easy choice because not always it coincides with competitors new product's introduction.

Both curves rapidly decrease to end the entire product lifecycle:

- Sales: less and less units are sold. New technologies entered into the market and company's product is not anymore the newest or the most interesting. Promotion is over, no efforts on advertising are done. Firm may adopt strong price reductions to face sales negative trends, but competitors may choose the same strategy with the risk of generating dramatic losses;
- Profits: as sales fall down, no revenues are generated anymore. Company may be ready to face this new negative trend by launching another innovation: throughout the whole product lifecycle firm should continue to develop 'back-office' further innovations capable to substitute previous proposals. Timing of replacement is crucial to guarantee continuous profitability and reduce as much as possible the successive trade-off phase.

Chapter 3 - How to launch a new product in the luxury industry

The second chapter provided general guidelines about the NPD process and introduction according to model developed by Booz, Allen and Hamilton in 1982. Although ‘universal’ stages have been identified, differences among product launches emerge according to many respects: type of company, degree of innovation, strategic decisions, reference markets, etc.

When the NPD process ends, the final output is introduced into a market full of similar proposals and competitors’ reactions. What appears evident, beyond the visible advantages given by any new entry, is that some products gain immediately higher success than others. Reasons might be multiple, but a critical explanation comes from the new fourth stage of the revised BAH model⁴⁷ (Exhibit 1.11): the concept development and testing. In order to resume the main benefits of the new product that the company plans to develop, through this stage is possible to empower the upcoming innovation with all the intrinsic meanings capable to create concrete added value. This renewed process focuses on more in-depth techniques generally spread and adopted throughout this powerful industry, with no distinction among specific sectors. This analytical focus aims to explore complexity faced by large companies during the stages of development and introduction.

Daily, the economic environment grows and evolves: today unlimited segments exist, capable to cover any unmet need or customer desire. However, it is undeniable that some markets are continuously more profitable and demanding than others. Self-expression, appearance, recognition and esteem are all key features belonging to the most powerful and profitable business of the world: the luxury industry

Superior goods differs from inferiors not only according to the customer perception related to excellent features and attractiveness. Being recognized as unique and prestigious, luxury products are capable to guarantee incomparable levels of profitability to the company: it explains why the NPD processes activated to introduce new products in the luxury industry, although following the ‘universal’ BAH seven stages, deserve incomparable levels of attention. Elaborated techniques, scientific methods, external support, outsourcing: many approaches are commonly adopted in the luxury world to develop new desirable and inviting innovations. Strategy is widely planned through geographical dispersion and continuous financial feasibility; idea generation and screening don’t consider any emerging possibilities but immediately focus on solutions with very high added value;

⁴⁷ Chapter 1, paragraph 1.4

business analysis requires peculiar attention and examination that goes very beyond the basic economic and financial indexes computed in other industries; product development may require endless resources in terms of both money and time; testing and market simulations are peculiarly examined to effectively support the commercialization and the final launch. Especially the introduction of the new fourth stage plays a pivotal role: concepts are realized not only to promote the new product, but especially to maintain a strict bond with the company and the brand behind it.

This third chapter starts with a brief introduction of the luxury context, from the famous Engel's Law to its critical factors. After these premises, the NPD model introduced by Booz *et al.* is discussed again empowered the additional stage of the concept development and testing. Then, the NPD process of luxury companies with in-depth discussions concerning some of the most relevant and adopted techniques, practises and factors capable to highlight the attention devolved by the company before the introduction of new luxury products. Finally, critical factors of the luxury industry as brand positioning are debated to highlight the key role of these dynamics into this particular context.

3.1 – The luxury world

Unlike the classic market, luxury industry is a completely different world: experts, researchers and statistician have carried out numerous studies about this subject and the main features that characterized and still influence its unstoppable growth.

First point of discussion concerns what kind of innovation is introduced in this industry: luxury goods are defined as products capable to offer a '*status of prestige*' to those customers who decide to buy or enjoy them. The main difference between the so-called 'superior' or luxury goods and the basic products called in economic jargon 'inferior goods' is the *reason buy*: indeed, added value of the premium product doesn't derive from the satisfaction of functional needs but from its superfluous nature.

This important distinction opens up to a deeper understanding of the main features of luxury products, highlighted by Czellar and Dubois:

- Uniqueness: decisive attribute of luxury goods. Rarity must be immediately perceived by customers through limited units and lack of availability. From a customer's perspective, the more the inaccessibility, the higher the desire;

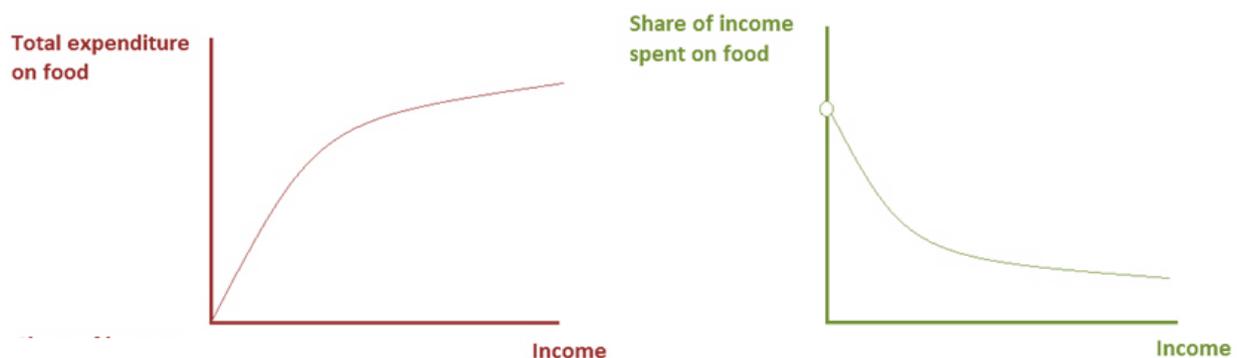
- Aesthetics: first impacts and interactions are fundamental. Luxury products should instantly persuade customers by acting on their senses. The whole atmosphere where the product is presented is carefully prepared;
- High price: paradoxically, instead of pushing away or frightening customers, it contributes to the creation of unique perception and unreachable aesthetics. It is justified by the superior quality applied to the luxury product;
- Excellent quality: exclusive materials, processes care and peculiar attention to the smallest details are mandatory. Quality is synonym of reliability and durability, thus it justifies both the high price and limited edition;

Many times, historical luxury companies, in addition to these features, try to create strategic connections with the past or the story concerning the city where the same firm is placed: collectors are particularly attracted to traditions and own culture.

Differences among superior and inferior goods are not limited just on physical and abstract features: these have critical economic impacts. Ernst Engel, German economist and statistician, on 1857 published the famous Engel's Law in his book '*Die Lebenskosten belgischer Arbeiter-Familien früher und jetzt*'. By studying expenses dedicated to family consumption in relation to the income, Engel observed that when consumers gain more, instead of proportionally increase the consumption in essential goods, rather they transfer own money towards luxury goods. Basically, Engel realized that when a family is poor, it clearly spends on essential goods: however, when it becomes richer, it still continues to spend the same amount on basic consumption, while the exceeded economic resources are devolved into new and superfluous luxury goods.

Shortly, the Engel's Law might be explained looking at the following graphs (Exhibit 3.1).

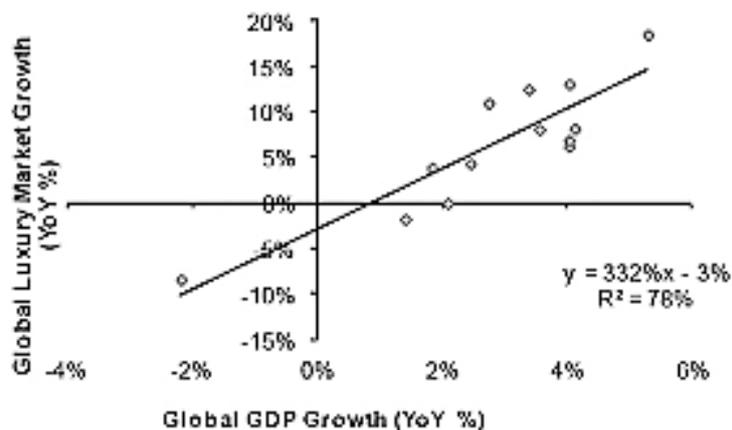
(Exhibit 3.1) – Raw graphic representation of the Engel's Law (*Ernst Engel, 1857*)



On the left side, at the beginning total expenditure are directed completely into food, but when income grows the same consumption curve stabilizes. Effects in customers' portfolios and decisions, once they earn more, are visible on the green chart, where the share of food consumption has an inverse proportion compared to the increase in income. According to the Engel's Law, the differential income is therefore devolved to the luxury sector or, in any case, not to essential goods.

Finally, as development and introduction of new products have favourable impacts in the general economy, at the same time the growth of the luxury industry has a positive correlation with the GDP: the chart below (Exhibit 3.2⁴⁸) shows how, in the last years, a continuous evolution of the whole luxury industry⁴⁹ conducted to high macro-economic improvements.

(Exhibit 3.2) – Consequences of the luxury industry in the GDP (2009)



3.1.1 – Stage 1: NPS through the Balance Scorecard (BSC)

Whatever the market or the company, according to the BAH model, the very first stage of the NPD process starts with the new product strategy (NPS) definition and formalization.

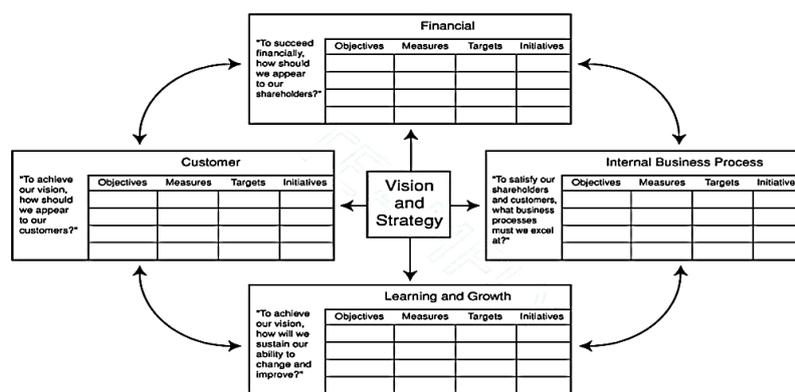
Generally, almost no differences arise at this phase, except resources spent in terms of money and time to find constant consistency between future new product and company's objectives. Luxury companies that decide to come up with a new idea cannot rely on simple unmet needs or emerging desires. Reasoning is more complicated and corporate identity must be the fulcrum of the entire project: these factors explain why, from the very beginning, many organizational techniques are exploited.

⁴⁸ https://www.google.com/search?q=GDP+and+luxury+sector&client=firefox-b-d&channel=crow&source=inms&tbn=isch&sa=X&ved=0ahUKEwj16Kmx1oHiAhWP6aQKHZEoCwoQ_AUIDygC&biw=1138&bih=527#imgrc=p3JqczQmuR1BOM

⁴⁹ According to the studies, expenses were especially directed to business trips or holidays

Among these, an important contribution is offered by Kaplan⁵⁰ and Norton⁵¹, who in 1992 developed a powerful tool capable to translate the entire organization's strategy into a comprehensive framework: the Balance Scorecard. By definition, *'The Balance Scorecard (BSC) is a strategy planning and management system to align business activities to the vision and strategy of the organization by monitoring performances against strategic goals'* (Kaplan & Norton, 1992⁵²). The BSC bottom-up approach starts from company's goals declined on actions to execute across four key dimensions: financial, customers, internal process and organization capacity. A representation is shown in the figure (Exhibit 3.3⁵³) below.

(Exhibit 3.3) – The Balance Scorecard (Kaplan and Norton, 1992)



Kaplan and Norton, 1992

Again, key objectives to be compared with corporate strategy are the, primarily, the financials: any intervention aims to improve monetary. Thanks to the Balance Scorecard, company's strategy is translated into strategic functional goals achievable through the new product introduction, capable to generate results in any of the four evaluated dimension:

- Financial: the NPD process allows the company to reduce costs. Planned efforts to develop and launch new innovations should improve both knowledge and skills of the organizational dimension. As consequence, results are visible in the process efficiency: the more efficient the course, the lower development time, mistakes and wastefulness. Costs reduction increases profitability, thus the new product should produce future positive results;

⁵⁰ Robert Kaplan is a professor of Leadership Development at the Harvard Business School, co-creator of BSC.

⁵¹ David P. Norton is an American business theorist, co-creator of BSC.

⁵² Robert Kaplan, David Norton, *The Balanced Scorecard - Measures that Drive Performance*, Harvard Business Review, 1992

⁵³ https://www.google.com/search?rlz=1C1GCEU_itIT843IT843&biw=1600&bih=1089&tbm=isch&sa=1&ei=aUruXNqJDKWS1fAPtuWegA4&q=kaplan+and+norton+BSC+1992&oq=kaplan+and+norton+BSC+1992&gs_l=img.3...182754.184451..184811...0.0.0.228.576.4j0j1.....0....1..gws wizimg.EyoT3Kk6Heo#imgcr=tWdPLxO9iwpj_M:

- Customer: improvements on process efficiency, beyond financial positive consequences, lead to production time reduction. Then, hypothetical waiting lists (frequent in the luxury sector) are handled faster: it increases both customer's satisfaction on the short run and customer's retention on the long-period. Moreover, these factors should conduct to higher revenues and profitability;
- Internal business process: the NPD is both costly and risky. However, if process efficiency is reached, then it is possible to produce more and more. The company should be able to achieve economies of scale by distributing fixed costs over higher volumes;
- Learning and growth: the NPD process results are directly related to managers, employees and internal assets. Human resources should benefit from the introduction of the new product by increasing personal knowledge and skills. Rapidly, these 'hidden effects' should generate improvements on procedures or techniques to speed up the entire NPD process. Positive consequences are, again, reflected on the other dimensions, especially on customer's satisfaction and higher profitability.

As visible in the graphic representation ideated by the authors, any main area that compose the model (respectively: financial, internal business process, learning and growth, customer) is peculiarly examined by focusing on specific objectives, measures, targets and initiatives. Evolution of these fields is constantly monitored into the same model through the quadrants represented on the columns of any table in order to verify the progresses respect of the designed and pre-fixed objectives.

As for the NPS, even the Balance Scorecard needs to be effectively communicated. Managers should be able to decline strategic objectives into practical tasks and, at the same time, employees should perfectly understand own role to correctly support the expected performances. Multiple communication tools such as executive announcement, meetings, videos, brochures or newsletters should be activated to diffuse BSC actions and results. Finally, the plan must be consistent with all the functions involved: as different business units have diverse objectives, the communication strategy must be adapted to both guarantee continuous coordination across the departments and effective measurement and evaluation of expected actions.

3.1.2 – Stage 2: Idea Generation

Unlike other sectors, on the luxury industry always the idea generation originates from a strict bond with the company to which it belongs. In the vast majority of cases, luxury companies are well-

known: worldwide, these firms are appreciated thanks to their promises, unattainable quality, popularity, envied recognition and great reputation.

Normally, these firms don't need something extravagant or radical to impress the customers: indeed, because they are already appreciated for unlimited reasons, the purpose is principally to respect receivers' expectations by continuing to offer them more and more distinctive and valuable innovations. However, contrary to what it may seem, it is not an easy objective: as business teaches, confirmation is always much more difficult than occasional victory. Sometimes, even small missing details or unlucky negative experience may destroy years and years of success. Famous companies cannot string along on possessing a recognized brand: without valuable and creative innovations they risk to rapidly lose both competitive advantages and reputation.

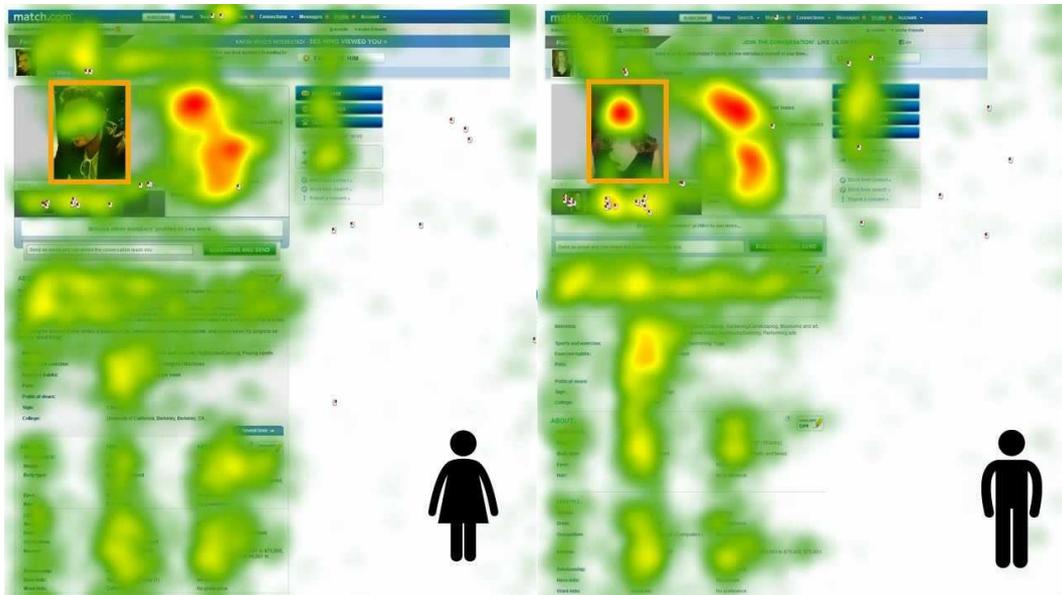
Then, once implemented a profitable and effective NPS, from the beginning of the second stage of the BAH model, the traditional and already known target is placed at the heart of the project: perceptions and expectations are the principle subjective phenomena to examine in order to gain clearer indications. To complete these analyses, usually luxury companies apply, even with an external support, procedures like:

- Biometrical techniques: methods centred on biological answers of the subjects observed. These tools are completely focused on internal consumers' perceptions to detect truthful information about them. Luxury companies may contact even external agencies or specialists to exploit as much as possible all the techniques available and capable to register and 'unveil' any customers' feeling or emotion. The most adopted techniques are:
 - Galvanometer, capable to measure the degree of excitement;
 - Analysis of vocal tone, to detect voices' variations and discover eventual emotive impacts or strange reactions;
 - Eye-Tracker, able to record the display field of who is exposed to that specific image or video. In the picture below (Exhibit 3.4⁵⁴), in front of the same Internet page, respondents showed different results: red-zones are the most capable to attract their eyes and, then, capture the attention. Yellow-zones deserved more attention than green ones, but these are not enough to reveal decisive results. Beyond attractiveness, other differences among respondents may be analysed:

⁵⁴[https://www.google.com/search?client=firefoxbd&channel=crow&biw=1138&bih=527&tbm=isch&sa=1&ei=ELLZX Pm8LP2a1fAP9SsAY&q=eye+tracker+facebook&oq=eye+tracker+facebook&gs_l=img.3...4455.5672..6215...0.0..0.264.264.21.....1....1..gswizimg.uuEh4T5huE#imgdii=ZOCS_3GAedP_TM:&imgcr=RJncO_LLDO9nhM:](https://www.google.com/search?client=firefoxbd&channel=crow&biw=1138&bih=527&tbm=isch&sa=1&ei=ELLZX Pm8LP2a1fAP9SsAY&q=eye+tracker+facebook&oq=eye+tracker+facebook&gs_l=img.3...4455.5672..6215...0.0..0.264.264.21.....1....1..gswizimg.uuEh4T5huE#imgdii=ZOCS_3GAedP_TM:&imgcr=RJncO_LLDO9nhM;)

always looking at the example below, man focused more on the picture on the left than woman;

(Exhibit 3.4) – Example of biometrical technique: the Eye-Tracker



- Other biometrical techniques capable to understand other ‘internal stimulators’ by measuring the breathing rate or some facial muscle contractions.
- Projective Techniques: indirect tools used to catch hidden aspects of consumer’s mind. The objective is to reveal the unconscious side of the customers, by trying to investigate the meanings behind the answers received. Most commonly adopted projective techniques are:
 - Words association: the interviewed receives a list of words, called ‘trial words’, that reflect the main topic of discussion. The interviewer asks the first word that comes into the interviewed mind by reading any ‘trial word’. The aim is to obtain instant answers to avoid as much as possible any emotional involvement the interviewed may suffer due to deeper thoughts or possible associations;
 - Constructive methods: starting from materials, draws or cues, the interviewer asks the interviewed to elaborate histories or to build mood boards. The aim is to understand how some concepts are elaborated into the consumers’ minds, to take advantage and inspiration of any new reasoning;
 - Conclusion techniques: unlike the previous methods, basis are already provided and the interviewer simply asks the interviewed to complete sentences, histories or draws. The aim is to experiment some different results from those expected or predicted;

- Laddering: simpler technique that not requires external support. It aims to go deeper and deeper into customers' requests to understand their internal values or specificities to successively develop convincing innovations. First, it is asked to the interviewed which attributes prefers about specific products of interest; then, questions become more specific to catch relevant receivers' internalities. For example, Hermès⁵⁵, on planning its next luggage, might receive by a customer the request of larger dimensions, while another interviewed may expresses the desire of smaller sizes. From the survey might be derived that the first person prefers travel without pressures coming from luggage's restrictions, while the second traveller probably hates waits caused by arrival and departure queues. Going even deeper, last considerations may touch personal's sphere: Hermès may deduct that the first person has a peaceful personality than the second who revealed impatience, thus there is higher probability to lose the last customer if his/her request will not be approved. Obviously, laddering is based on assumptions and not certain answers: however, inputs and evidences about cultural, social and personal values are the basis to create meaningful and symbolic new products;

These techniques support luxury companies to collect information further examined: the peculiarity is the extreme attention dedicated from the very beginning, in order to develop a product that may be perfect especially from the unconscious side than the visible and tangible perspective. Only by focusing on internal emotions, feelings, instinctive reactions and core values it is possible to provoke the irresistible desire commonly generated by luxury products.

3.1.3 – Stage 3: Screening and Evaluation

From the very beginning, the BAH model adopted by luxury companies is particularly addressed to respect pre-fixed conditions as company's traditions or compliance with internal and recognized ethics and values. Thus, the amount of idea to generate and successively to screen is drastically inferior than the proposals emerging in the other industries. However, it doesn't implicate improvements concerning the translation from the idea generation into successful introduction: the negative proportions sustained by Cooper, Griffin and the same Booz⁵⁶ is still valid.

Generally, companies of any industries that plan to develop new products give more attention to the second stage than the third: differently, in the luxury world, higher degree of details is required especially during this phase. Generally, as commonly happened during the previous step by

⁵⁵ French luxury company founded in Paris (1837) by Thierry Hermès: it is one of the best companies on the fashion industry and it produces luxury leather goods, perfumes, jewelleries and luggage, among the others.

⁵⁶ Ref.: Introduction

experimenting some aforementioned biometrical technique, external support of agencies and specialists may be seriously taken into account even at this stage. Unlike the ‘normal’ evaluation executed in the standard NPD process, usually luxury companies activate real role play games to accelerate product’s comprehension and effective potential. Through these smart techniques the attempt is to predict future feedback in order to finally launch into the market an already improved and complete innovation.

In order to achieve this purpose, the most relevant and diffused screening methods are:

- a) The Quinn⁵⁷ / De Bono⁵⁸ Model: the six thinking hats is a role play game described by Edward De Bono in his homonym book, on 1985. It focuses on evaluating the idea, object of discussion, according to different and opposite perspectives. A strong debate takes place among six players distinguished by six hats: any hat is framed into a model (Exhibit 3.5 – left side⁵⁹) that shows the source, internal or external, on the horizontal axis and the degree of freedom, innovation or control, on the vertical one.

According to the authors, each person assumes a personality coherent with the colour of the hat worn:

- the red hat activates a player moved by feelings. Together with the black hat that represents the role of moderator and try to face the idea with caution, it is placed on the second quadrant formed by internal dimension and innovation;
- the yellow hat is the only one collocated into the fourth quadrant formed by external and control dimensions: it belongs to a person who support the idea discussed by defending its advantages;
- the green hat is placed on the first quadrant representing an external support to the creativity. The person who wears it should bring new concepts and stimuli;
- the blue hat is up to a person in charge of revising the whole thinking process. Together with the white one, which is assigned to a person who continuously look for further information, these hats reflect the third dimension dominated by internal and control dimensions.

⁵⁷ Robert E. Quinn is chair of the Department of Organizational Behavior and Human Resource Management at the University of Michigan School of Business

⁵⁸ Edward De Bono is one of the most important international authority about creative thinking.

⁵⁹ https://www.google.com/search?client=firefoxbd&channel=crow&biw=1138&bih=527&tbn=isch&sa=1&ei=y1i7XOnDBomXkwXk_pKoCA&q=De+Bono%27s+model&coq=De+Bono%27s+model&gs_l=img.3...15781.18416..18614..0.0..2.0.0.....4....1..gws-wiz-img.9oaCCkk8CaU#imgrc=cVFNGWTg02WKzM:

b) Kano⁶⁰ Model: theory invented in the 1980s. The selected ideas are investigated by focusing on two diverse dimensions: customers' degree of satisfaction/dissatisfaction, fulfilment or not fulfilment of core attributes (Exhibit: 3.5 – right side⁶¹).

According to them, customer preferences are classified into five categories:

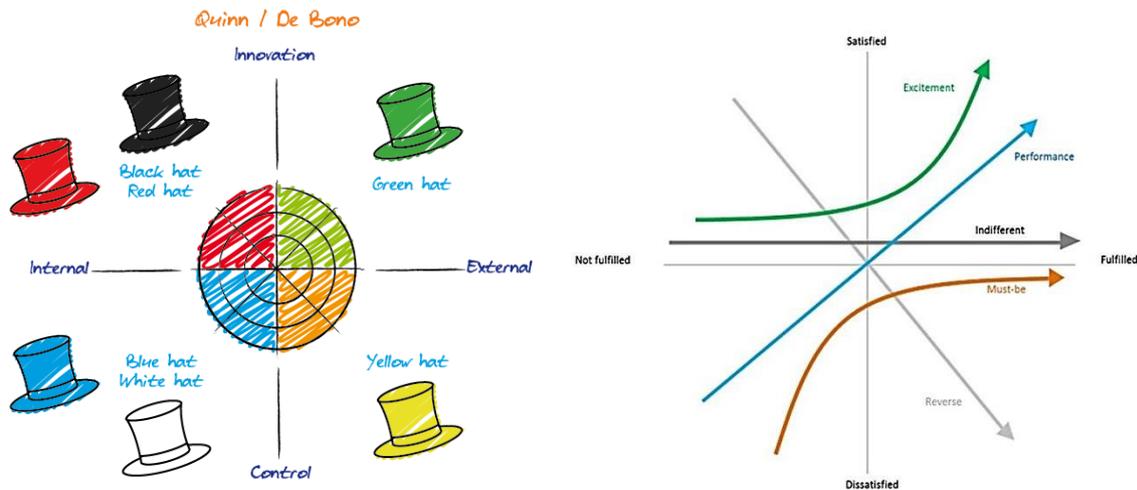
- Must-be Quality: basic requirements that customers expect from the new product. Usually, these are taken for granted. For luxury companies these features resume the tradition or the common trait that make different own products from the competition;
- One-Dimensional Quality: these attributes, if fulfilled, result in satisfaction, while if not fulfilled, generate dissatisfaction. An example belonging to this category might be the waiting time at the hotel: in general, no great added value are achieved through it. However, if checks are completed faster, then the customer satisfaction increase or maintain the same level, but if procedures are carried out slowly, then the general experience turns to be negative;
- Attractive Quality: these attributes provide satisfaction when they are fully achieved, but they don't cause dissatisfaction when not fulfilled. For example, an hotel that provides free food adds an attractive, but not required, feature;
- Indifferent Quality: these attributes refer to aspects that are neither good or bad. For example, politeness is not mandatory but it is appreciated: however, if customers' problems are satisfied the experience will be always positive;
- Reverse Quality: these attributes refer to an high degree of achievement resulting in dissatisfaction and to the fact that not all the customers are alike. For example, some customers may appreciate only basic products, but the company plans to introduce many extra-features or higher technologies: then, nevertheless the improvements customer's satisfaction may decrease.

⁶⁰ Noriaki Kano is an educator and professor in quality management. He is the founder of the homonym model.

⁶¹https://www.google.com/search?client=firefoxbd&channel=crow&biw=1138&bih=527&tbm=isch&sa=1&ei=mle7XMqdAY_6kwWI7K4Cg&q=kano+model&oq=kano+model&gs_l=img.3..0j0i3019.275537.276500..276733...0.0..0.417.1558.0j5j0j1j1.....1....1..gws-wiz-img.UNVnF_CgJAE#imgrc=Q7JZAKPsirXS6M:

(Exhibit 3.5 – left side) – Six Thinking Hats Model (Quinn/De Bono, 1985)

(Exhibit 3.5 – right side) – The Kano Model (Noriaki Kano, 1980s)



The aim of Quinn/De Bono and Kano is to analyse deeper and deeper the validity of any evaluated idea. The severe and rigid discussion including different personalities should immediately highlight unconvincing or negative aspects. At the same time, any addition or innovation should provide logic answers in order to introduce something that may add value to the customers. Through these smart role games, actors provide instant feedback and results that should conduct to the perfect compromise among different perspectives and realities: the entire screening and evaluation stage benefits from the exploitation of these tools and, finally, possibilities to select the right idea increase.

3.1.4 – Stage 4: Concept Development and Testing - the Unique Selling Proposition (USP)

The new fourth stage of the revised BAH model is perfectly inherent to this specific segment object of discussion. Luxury companies propose to the market unique products: during this phase, the aim is to effectively communicate the innovation through exclusive concepts that go far beyond the normal claims adopted by the majority.

To reach this purpose, large companies exploits a concept ideated by Rosser Reeves in his book *'Reality on Advertising'* in the 1950s: the Unique Selling Proposition (USP). By definition, *it represents the reason why customers should prefer the company's product or brand rather than the competitors (R. Reeves)*. Its purpose is to heavily differentiate one proposal to another.

Shortly, the elaboration of a powerful USP requires:

1. Full comprehension of the target audience to which the new product refers to;
2. Global vision of the market in which to insert the innovation;
3. Peculiar examination of the competitive scenario;
4. Good knowledge of new products strengths and weaknesses;
5. Clear identification of the benefits proposed;
6. Exploitation of own brand's power to support the launch.

These steps may require a re-adaptation of common and academic techniques like the SWOT analysis, definitely declined at a product level to focus completely on the new proposal. Through a quick overview of the internal and external factors, it is possible to reply to the USP basic requirements and to highlight the key points of the new proposal.

Specifically:

- Internal factors: at product level, it resumes and examines best and worst features of the innovation. Key questions that need effective answers are:
 - Strengths: what are the real benefits of the future new product? Are these aligned with luxury company's traditions and customers' expectations? Are these able to attract a considerable amount of customers? Are these unique or, differently, some competitors already offered them?
 - Weaknesses: what are the missing benefits of the new product? In what the innovation is inferior compared to the competitors? How they might be improved? What are the dimensions that deserve more attention?
- External factors: at the same time, the environment around the company composed by both competitors and other conditions such as political, economic and cultural matters must be explored and studied. It is the responsible of unlimited factors capable to facilitate the launch of the new product or, differently, to complicate its introduction. Examination of these aspects may focus on:
 - Opportunities: luxury company may continuously monitor market competitors. In the 'normal' market rivals may even disappear because of wrong strategies or bad episodes⁶², while in the luxury industry is almost impossible to assist a sudden exit. Thus, companies should exploit those minute competitors' mistakes such as wrong timing or unconsidered complementary technologies to gain advantages over them;

⁶² E.g.: on 2002 the Parmalat crack that left great market's opportunities to Nestlé with its brand Danone

- Threats: normally, people face endless ‘trends of the moment’ that reach immediately the peak but within one or two months disappear. Luxury products are not based on current trends, but the arrival of something new (although for a short-while) must be seriously taken into account to avoid potential dangerous it may generate. At the same time, external environment requires rigorous monitoring: luxury firms should have dedicated departments focused on continuous and peculiar check of upcoming laws or restrictions, economic cycles, social causes and cultural evolutions.

Once achieved the requirements to elaborate a powerful new concept, the luxury company should clarify what is planning to develop and what are the key advantages to focus on. Only after that, it can finally proceed to the realization of the definitive USP.

The core of the concept is the most powerful benefit to the customer, something not offered by competitors and capable to attract endless consumers. Great examples are offered by the global brand consultancy *Interbrand*, according to which the most valuable luxury fashion brand on 2019 are immediately associated with exclusive quality, tradition and craftsmanship. Specifically, these are:

- Louis Vuitton: French company appreciated everywhere due to the strong association with heritage and luxury. The central theme of travel and the powerful communication around the adventure spirit are its main pillars. When Louis Vuitton decides to launch a new travel-inspired product, it finds coherence among these two pivots to elaborate unique concepts;
- Chanel: highest quality, sense of belonging and especially symbol of women’s freedom. The French company promotes “feminine elegance” together with the concept of “uncomplicated luxury”: simplicity surpasses abundance. The focus is centred on the so-called timeless elegance and liberated femininity against the old fashion constraints;
- Gucci: maximum expression of sensuality, based on a strong communication where all the factors are focused on it. Gucci’s style is judged as provocative and controversial, although during the last period is trying to re-shape some boundaries into romanticism to conquer the new target of fashion dreamers.

According to the “*Exclusivity Law: two enterprises can’t possess the same word in the potential customer’s mind*”⁶³ (J. Trout & A. Ries), it appears evident another feature that marks the luxury industry. Large companies creates powerful associations between own products and themselves: when customers simply look at the proposals, they should instantly understand who there is behind

⁶³ ‘The 22 Immutable Marketing Law’, Jack Trout and Al Ries

them. For example, thinking at the automotive industry, one of the most relevant needs expressed by customers is to drive in safety conditions: as recognized worldwide, the Swedish car manufacturer Volvo is the principle owner of the word ‘safety’ and, thus, it perfectly fits this drivers request.

Authors explain that any luxury company is owner of critical and powerful specific word, as well. Looking at the three companies mentioned above, it appears evident the association made by the receivers: Louis Vuitton represents the freedom through its sense of adventure, Chanel focuses on feminine elegance and simplicity, while the key-word of Gucci is ‘sensuality’. However, even don’t possessing unique words, luxury companies may provide convincing USP through the exploitation of own heritage and the careful leverage of key benefits of the upcoming innovation.

3.1.5 – Stage 5: Business Analysis through DSS (Decision Support System)

The fifth stage of the NPD process in the luxury industry faces many aspects surrounding the main topic of the business analysis. Large firms of this industry are well-known and consolidated businesses: to reach and to maintain these results, they have to manage, day by day, the unlimited amounts of data collected and gathered.

The concept of big data has become very relevant to indicate the capability to exploit and examine huge quantities of truthful and complex data able to dramatically change in terms of volumes, speed and variety. Enormous database are not enough to cover all the information searched and provided by luxury companies: almost all the department should work jointly, thus it emerges the necessity to exploit the same platform or to have an unique dataset.

A famous definition able to capture the concept of big data is proposed by the McKinsey Global Institute: *“A system of Big Data refers to datasets whose size is so large that it exceeds the capacity of relational database systems to capture, store, manage and analyse”*. Then, volume and speed play a pivotal role: traditional techniques of business intelligence are not sufficient due to the rapidity with which these variables increase. Moreover, differences between old methods and Big Data concern the typology of statistics applied. Traditional business intelligence worked on clean data and simple models to measure objects or detect some trends: in the Big Data is mostly used the inferential statistics and regression models to deeply understand relationships and dependencies between data or variables analysed.

Today, the most diffused Big Data methodologies are:

- Descriptive Analytics: set of tools capable to offer a quick overview of actual and previous scenarios. These analyses focus on both present and old data and the most relevant indicators are displayed to support decision makers;
- Predictive Analytics: through forecasts models and regression techniques, these branches of analysis focus on future data to anticipate next demands or external opportunities/threats;
- Prescriptive Analytics: tools able to resume the data collected during the earlier stages and, based on it, to promote operative or strategic solutions to intervene.

Obviously, there many tools able to act by itself according to the results of the analysis computed. However, contrary to what it may seem, Big Data opens up to positive financial consequences to the luxury companies: efforts towards collection, storage and analysis are multiplied, but through smart architectures is possible to efficiently manage all the necessary information. For example, many large companies have computer's clusters to connect all the departments and share the data among them in order to achieve the common objectives.

Analytical techniques are not only implemented to collect data and examine its past or eventual future impact: to effectively manage the huge amount of information, it is indispensable to apply other methodologies. Among these, Data Mining is one the most powerful and diffused tool able to extract useful and reasonable information from enormous amounts of data by using automatic or scientific techniques. Data Mining goes deeper than basic statistics because, through its internal algorithms, it focuses on single individuals rather than entire population. In this sense it may predict future consumers' behaviour in order to make right and precise formulation: an example may be a clear indication of those customers more addicted to the future new product or marketing campaign.

Clustering, ranking, regressions, decision trees and Bayesian methods are the techniques more exploited by using Data Mining, but a considerable percentage of risk must always be taken into account. To face these statistical unpredictability, programming languages such as Hadoop and SQL (Structured Query Language). Moreover, there are different software to support the analyses like R, Oracle Data Miner and SAS Enterprise Miner.

A relevant software able to highly increase effectiveness of analysis and reliability of data is the Decision Support System (DSS): its main function is the instant extraction of critical information from huge quantities of data. Differently from Data Mining that detects important associations and relationships in the examined database, the DSS selects only those data considered 'decisive' to the cause is facing. It is empowered by business intelligence tools and other techniques like Query or

OLAP⁶⁴ capable to provide acceptance or rejection of hypothesis formulated by, respectively, users or decision makers. DSS objectives are mainly focused on internal decision effectiveness through the examination of different perspectives: evaluations of previous decision executed, data investigation by including specific variables and adaptability to specific problems in which it is possible to make predictions but not to formulate algorithms.

It works through four stages:

1. Intelligence Phase: it collects internally and externally to identify problems to face;
2. Design Phase: it builds the model and plans possible solutions;
3. Choice Phase: it evaluates the opportunities and it tests the selected ones;
4. Implementation Phase: it realizes the DSS by implementing the selected solutions.

Practical examples of DSS application might be: reporting and mandatory documents management, accountability, stock and warehouse organization, allocation of financial assets to invest on materials or utilities.

A deep focus is represented in the table below (Table 3.1), where by using regression models luxury companies carefully evaluate, from customers' perspectives, any critical dimension concerning the new product: financial value, functional value, individual value and social value.

(Table 3.1) – Example of regression models applied in the luxury industry

| Dimensions | Items | Standardized regression coefficient (λ) | Error coefficients (e) |
|-------------------------|--|---|----------------------------|
| Financial Value | FIV1.Luxury products are inevitably very expensive. | 0.596 | 0.645 |
| | FIV2.Few people own a true luxury product. | 0.794 | 0.369 |
| | FIV3.Truly luxury products cannot be mass-produced. | 0.480 | 0.769 |
| Functional Value | FV1.The superior product quality is my major reason for buying a luxury brand. | 0.660 | 0.565 |
| | FV2.I place emphasis on quality assurance over prestige when considering the purchase of a luxury brand. | 0.658 | 0.567 |
| | FV3.I am inclined to evaluate the substantive attributes and performance of a luxury brand rather than listening to the opinions of others. | 0.607 | 0.631 |
| | FV4.A luxury brand that is preferred by many people but that does not meet my quality standards will never enter into my purchase consideration. | 0.542 | 0.706 |
| Individual Value | IV1.I derives self-satisfaction from buying luxury products. | 0.564 | 0.682 |
| | IV2.Purchasing luxury products make me feel good. | 0.612 | 0.624 |
| | IV4.When I am in a bad mood, I may buy luxury brands as gifts for myself to alleviate my emotional burden. | 0.708 | 0.499 |
| | IV5.I view luxury brand purchases as gifts for myself to celebrate something that I do and feel excited about. | 0.791 | 0.374 |
| | IV6.I view luxury brand purchases gifts for myself to celebrate an occasion that I believe is significant to me. | 0.774 | 0.401 |
| Social Value | SV1.I like to know what luxury brands and products make good impressions on others. | 0.671 | 0.550 |
| | SV2.To me, my friends' perceptions of different luxury brands or products are important. | 0.694 | 0.518 |
| | SV3.I pay attention to what types of people buy certain luxury brands or products. | 0.706 | 0.501 |
| | SV4.It is important to know what others think of people who use certain luxury brands or products. | 0.717 | 0.485 |
| | SV5.I am interested in determining what luxury brands I should buy to make good impressions on others. | 0.763 | 0.418 |
| | SV6.It is important that others have a high opinion of how I dress and look. | 0.684 | 0.532 |
| | SV7.If I were to buy something expensive, I would worry about what others would think of me. | 0.688 | 0.527 |

⁶⁴ On Line Analytical Processing

As visible in the table, quality plays a decisive role in all the dimensions and especially in the functional one, while the most decisive impact is played in the individual dimension where luxury power is able to positively influence customers' lives.

Finally, due to the digital evolution of the last decades, both luxury and large companies consider in its business analyses careful indications of Internet's world. The official web-site deserves critical attention, from legal aspects to completeness of contents and information; dealers' or shops' pages should be coherent with the headquarter design and layout to create consistency and direct connection in the users' minds between responsible and subsidiaries; especially, social media should be peculiarly examined due to the enormous impact they gained recently. Today, any company has own official Instagram or Facebook page and account: these tools facilitate instant interactions with the right customers thanks to the possibility to strongly target the designed receivers. Meetings focusing on this subject are mostly dedicated to budget proposals to invest exclusively on social media, usually preferred to common channels like newspapers, magazines or television.

3.1.6 – Stage 6: Design and Development according to the VRIO Model

As whatever NPD process adopted in any industry, the sixth stage is the most decisive. The aim is to finally translate all the efforts executed in the precedent phases into powerful, concrete and real prototypes.

Usually luxury companies start from a solid base of scale models of previous versions to upload the new edits: however, it doesn't allow the firm to undervalue the importance of this crucial stage. Unlike the common industries, the development time might be less pressing: luxury companies, in many cases, are already leaders of the own segment, thus they don't need to exploit any first-mover advantages. Moreover, sometimes they may prefer wait competitors' entrance because of the risk to be copied: indeed, their processes are mostly directed to improve performance of an already powerful product, thus the more are the feedbacks collected, the more the chances to discover some particular and relevant feature to exploit.

At the sixth stage, but generally in the entire NPD process, luxury companies aim to gain critical advantages over the competition. Although this purpose is common to any company, luxury firms differ from the multitude due to the interpretation and the strategic importance they attribute to the concept. Competitive advantages are not enough to gain higher supremacy when anyone is the giant. It explains, again, why luxury companies have less pressure once they face the development

time: what they are introducing should be something unique and capable to create an advantage able to go beyond the normal competitive one.

The VRIO model (Exhibit 3.6⁶⁵) is based on the critical evaluation of potential competitive advantages. It is not enough the guarantee of higher market share or first-mover advantages if these are not durable, sustainable or may be easily replaced. The model was ideated by many authors, but especially Jay B. Barney gave the most important contribution among the 1991 and 2011 with its strategic management orientation.

As anticipated in the fourth stage, luxury companies evaluate survival ideas not only in terms of new features or premium quality, but especially in terms of unreachable intangible advantage they may create. What should be unique is not only the future new product and its concept, but even the position conquered in the market environment: through four key questions or prerequisites, the VRIO model allows luxury companies to severally examine these aspects.

(Exhibit 3.6) – The VRIO Model (*Jay B. Barney, 1991 – 2011*)

| V VALUABLE | R RARE | I INIMITABLE | O ORGANIZED | |
|---------------|-----------|-----------------|----------------|-----------------------------------|
| NO | | | | COMPETITIVE DISADVANTAGE |
| YES | NO | | | COMPETITIVE PARITY |
| YES | YES | NO | | TEMPORARY COMPETITIVE ADVANTAGE |
| YES | YES | YES | NO | UNUSED COMPETITIVE ADVANTAGE |
| YES | YES | YES | YES | SUSTAINABLE COMPETITIVE ADVANTAGE |

First answers should be provided to the Question of Value.

Does the new product brings added value? Replies must consider the entire luxury company’s action range and not only a customer-oriented perspective: through the new product it should be possible to exploit some external emerging opportunities or face potential threats. Moreover, the generated added value should be evident and different from competitors’ proposals. These

⁶⁵https://www.google.com/search?q=vrio&client=firefoxbd&channel=crow&source=lnms&tbm=isch&sa=X&ved=0ahUKEwjy94nb443iAhXM4KQKHTzhBcQQ_AUIDigB&biw=1138&bih=527#imgdii=pHQunWn3A63hsM:&imgcr=D_AEI0WCpiXXsDM:

requirements are mandatory, otherwise the company is immediately out of the market because of the dramatic competitive disadvantages due to useless innovations.

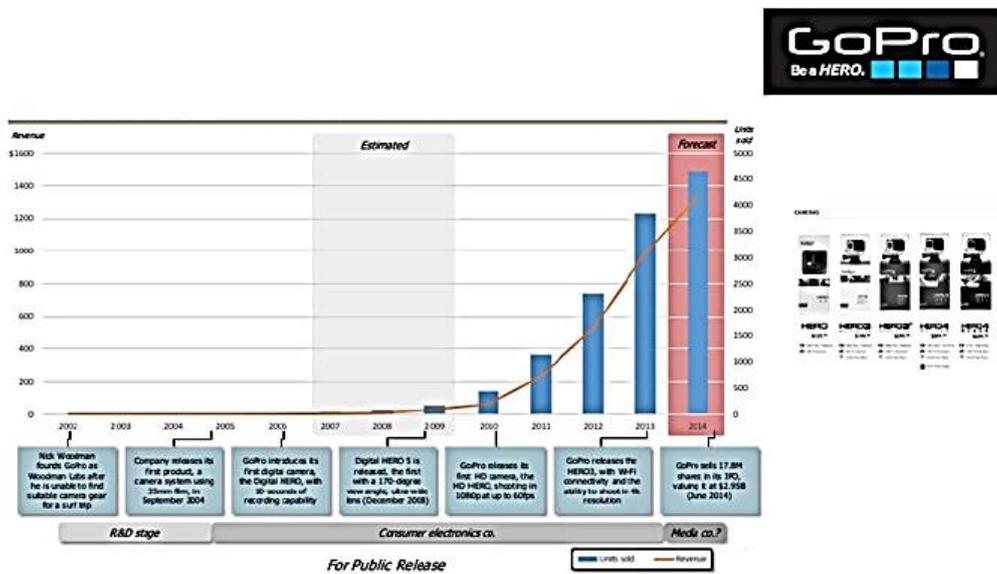
When positive and strong replies satisfy the Valuable qualification, luxury companies enter in a phase of competitive parity against rivals and they access to the following stage of the VRIO model, the Question of Rarity.

Is the new product really unique? Full market comprehension, combined with peculiar marketing researches and analytical forecasts, should guarantee the (almost) complete uniqueness of the future innovation. Slight threshold of 'not exclusiveness' may be accepted, however the new product should be really rare. Thanks to the uncommon innovation, the company moves from the previous state of competitive parity to the exploitation of temporary competitive advantages. Thus, once certified its rarity, luxury companies move to the most difficult requisite of the VRIO: the question of Imitability.

Is it easy or not to copy the new product? This big question imply another interrogative: how much it costs its development compared to an eventual duplication? Replies should be motivated by marketing intelligence and competitive analysis in order to have a clear vision about the future impact the innovation may generate. Many business cases show painful blanks because of wrong market researches: planning, thus, becomes very decisive to effectively answer to the third question of the VRIO model.

An example able to show the importance of this third requirement of the VRIO model is shown in the picture below (Exhibit 3.7). GoPro spent several years before to launch its powerful and unique news. From 2002 until 2009 losses passed profits and no sales were possible: greater amounts went to R&D department in order to focus on something almost impossible to discover or predict. Finally, the result was an unique surround-view camera able to offer an impressive coverage of the target. Competitors were not capable to instantly reply to the American technology company and when Sony offered own first solution with identical features and design it was too late: GoPro have already enjoyed an unused temporary advantage. Moreover, the company exploited patents that are commonly evaluated and diffused during this phase in order to protect own innovation and extend as much as possible the advantage gained over the competition.

(Exhibit 3.7⁶⁶) – Business Case: the GoPro Hero (2002 – 2009)



The last answer luxury companies have to provide to the VRIO model replies to the Question of Organization, that focuses on internal strengths, resources and capabilities to catch and maintain all the added value proposed and cultivated. These are the key factors that allow the luxury firm to reach the hoped sustainable competitive advantage, the last level of the VRIO model and the most difficult to overcome. Consistent internal structure, cross-functional collaboration, coordination across departments and integration from top management to employees are the basis to form a solid organization: without these conditions, it is not possible to reach the most profitable and decisive kind of competitive advantage. The largest luxury companies have huge powerful structure diffused worldwide but carefully coordinated by the headquarter: rigorous policies and severe penalties are diffused to maintain the highest degree of transparency and loyalty.

3.1.6.1 – Stage 6: Focus on The House of Quality (HOQ)

Interactions between different teams and collaboration across departments is always critical: however, in the sixth stage the most relevant role is played by the engineering team, while in the last phases the marketers take the control. However, through the Value Engineering approach, luxury companies may immediately have a complete overview of the entire process, by taking into account both customers and firms perspectives to reach economic and technical considerations.

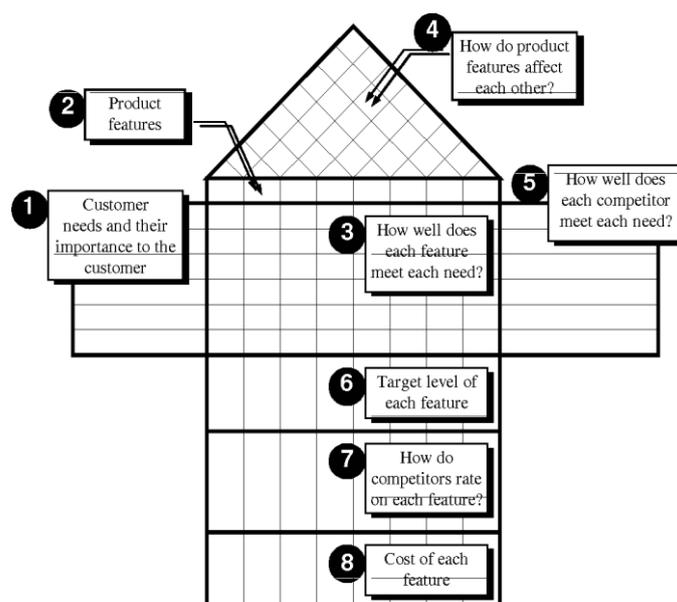
The value engineering relates the importance customers place on each function performed by a product to the cost of the parts contributing to that function. Thus, by starting from the previous

⁶⁶ Personal source

stages when a complete knowledge of the costs of new product's components was provided together with the importance that customers assign to any function, it is possible to implement the approach. Linkages between customer needs and product solutions are provided thanks to a powerful method capable to effectively make these connections: the Quality Function Deployment (QFD). This is a very powerful set of processes, where the most relevant role is played by the House of Quality (HOQ), a matrix that peculiarly combine precise key strategic and tactical customer needs with product features. Precisely, the House of Quality refers to a process for product development that is inspired by customer desires and relates the capabilities and resources of the organization to meet those desires. It is a process that translate customers desires into a written plan, prioritizing steps of execution based on what is really important to them, and putting a realistic model.

First, a list of critical customer needs is provided and any aspect is examined to understand its strategic content; second, the most relevant new product features are matched with the customer needs that should be fulfilled; then, powerful product features are compared against rivals' attributes and their ability to meet customer needs; finally, once single comparisons are passed, the total product is evaluated even from a financial perspective by trying to obtain the same ability of the competitors to meet customer needs, but a lower costs. Clearly, the more the attributes fits those critical customer needs, the higher the chances to be integrated on the prototype. Those features may be excluded from the financial comparison executed at the end of the process: specifically, as visible in the picture below (Exhibit 3.8⁶⁷), several dimensions are deeply considered according to vary aspects.

(Exhibit 3.8) – The House of Quality (*HOQ*, 1972)



⁶⁷[https://www.google.it/search?q=house+of+quality+dahan+and+hauser&source=lnms&tbm=isch&sa=X&ved=0ahUK Ewjxm-XV Y7iAhXJLIAKHb_CD1oQ_AUIDigB&biw=1366&bih=632#imgrc=c7oqn4xNA03XJM:](https://www.google.it/search?q=house+of+quality+dahan+and+hauser&source=lnms&tbm=isch&sa=X&ved=0ahUK Ewjxm-XV Y7iAhXJLIAKHb_CD1oQ_AUIDigB&biw=1366&bih=632#imgrc=c7oqn4xNA03XJM;)

Among the eight fields required by the House of Quality, four initial key measurements focus on the innovation itself and its consistency with target audience, specifically: 1) most relevant needs customers highlight and their relative importance; 2) product attributes; 3) match between feature and any individual need; 4) compatibility about the internal composition of the product. Other four dimensions are concentrated on competition and financial aspects, precisely; 5) competitor's ability to meet the same customers' needs; 6) target level of each feature; 7) importance given by competitors to any product's attribute; 8) cost on each feature.

In general, HOQ is not enough to achieve the real purpose of luxury companies when they decide to develop a new product or replace an old one. The aim is not to build a powerful prototype or first physical and convincing model: luxury companies don't simply care about financial parameters because they already have huge revenues and continuous profits. Neither recognition is the final goal because many of them already enjoy unreachable reputation. However, thanks to its strong orientation towards the customers, the HOQ is one of the most adopted tools by the luxury companies, especially in the engineering segments, to achieve their general purpose of effectively entering into the consumers' mind.

3.1.7 – Stage 7: Testing the marketing mix

The final stages of the NPD process designed by Booz, Allen and Hamilton needs an extreme comprehension due to the big differences emerging between the commercialization happening worldwide and the variables that characterize the context examined in this chapter.

During this phase, in the luxury industry, the most critical variations are related to the marketing mix variables that play a completely different role. Specifically:

- Product: luxury goods, as anticipated in the first part of this chapter, have a complete different focus and meaning compared to normal proposals. Unlike the general companies which try to differentiate own innovation through attributes, features, packaging or strategies based on pricing reduction or massive communication, in the luxury sector the core distinction concerns what defines the 'product's identity'. Customers should desire the innovation because it is able to increase own social status, to elevate own recognition and to insert them in prestigious élites, then luxury companies focus especially on the 'hidden side'. Aesthetics is just the conclusion of a product capable to transmit greater value and make different the future possessor from the other. Details are deeply studied in terms of meanings: colors are carefully studied to generate uncontrollable desire: for example, the

black is largely used because it is widely recognized as a symbol of luxury. Materials like gold or silver are adapted although they may seem exaggerated, at the same time shapes are preferably hand made. Generally, product's utility passes into the background: as discussed by Czellar and Dubois, a core characteristic of luxury product is precisely its superfluous nature.

- Price: the higher the amount required to obtain the product, the higher the customer's desire to possess it. Paradoxically, against the common attitude to save money and spend as little as possible, in the luxury industry disproportionate requests are a must: the higher the price, the higher the benefits perceived and the sense of uniqueness. Moreover, customers associate exorbitant figures to excellent quality: the huge cost becomes reasonable and it is justified from the premium quality that has been supposed to be inside the new product.

However, beyond the materials or the origins, in this industry an inaccessible price is more a prerequisite than an excessive request: famous luxury companies risk to damage their own reputation if they ask low figures for their own products. It also explains why these kind of companies never propose discounts or promotions: instead of meeting customers halfway, they might risk to lose them.

- Place: the lower the quantity of luxury goods produced, the higher the perception of uniqueness and exclusivity. Many luxury companies, although conscious to have the possibility of gaining higher profits by producing more units, decide on purpose to drastically reduce the volume of their own new proposal. Limited editions are very diffused inside this industry: luxury companies perfectly know that new products will be very appreciated, however they choose to produce less than what is requested and potentially sold. This decision exploits the inaccessibility that plays, as mentioned in the variable of price, a critical role.

A key aspect related to the distribution is the strategic location to which place their own business. Usually, luxury companies possess their official store in the most famous and crowded streets of the best cities: Champ-Élysées in Paris, Gran Via in Madrid or Wall Street in New York. Although the rent of these stores may exceed monthly profits, luxury companies' HQ prefer anyway to maintain them to increase the unique perception created. Concept of atmosphere plays here another important role: layout, lights, objects and perfumes are combined together in order to make unforgettable the customer's experience.

- Promotion: this is the most controversial variable of the marketing mix that luxury companies should face. A common belief is that the higher level of advertising, the greater the future results: however, the reality is very different. In their Law #20: *'The advertising frame: sometimes the situation is the opposite how it looks in the press'*, Jack Trout and Al

Ries affirmed that, when companies invest huge amount in advertising and own products are always visible on newspapers or TV, probably these businesses are facing dramatic internal crisis. Authors explained that best innovations come '*during the night*' (J.Trout and A.Ries): no one wants own discoveries are copied from competitors, thus the less is communicated through media, actually the better. Whatever the new product, huge efforts are devolved on communication decisions to correctly diffuse the innovation: if from one side, as already discussed, Trout and Ries don't trust about media, from the other side there are different strategies exploited by luxury companies to empower the future introduction. A famous case concerns the Super Bowl, the most followed event in the USA: according to several articles online, in its 53th edition, companies spent, on average, more than 5 million dollars for 30' spot to reach incomparable visibility to the product object of the advertisement.

In general, the majority of luxury companies decide on purpose to don't use advertising to communicate future innovations: Ferrari, Rolex or Hermès already know that own customers will look for their new proposals once in the market, thus these firms don't have any need to advertise. Paradoxically, the exploitation of these channels might generate dangerous counter-effects: loyal customers may ask themselves why these powerful and unique companies are using media to promote product that '*they sell themselves*'.

Differently from the general promotion and advertising, what is common to find in the luxury industry is the exploitation of Public Relationship (PR). These are a set of actions that aim to develop favourable relationships between the company and its target audience. Specifically, its main purpose may be synthetize as building a powerful and positive image through critical actions of public nature, from social cause to environmental matters. About the audience, first of all PR refers to those directly linked with the luxury company, from the shareholders to employees and actors who daily support the core business. Then, it aims at those people who are not immediately related with the firm, from the Government to business associations and journalists. Fields of interests may be art, culture, racism, science progress, social evolution...

PR may also activated to defend company's images or brand: luxury firms are continuously replaced by fake brands that may damage the real one and badly influence receivers. Through advertising campaigns or legal communications these companies may inform the customers about the originality and purity of own proposal, trying at the same time to completely avoid and punish fake sellers. However, PR is a double-edge knife, due to its nature: information transmitted through public relations are diffused by media, but the key difference respect to advertising is that these are diffused without compensation. From one side it means that comments are very reliable and no efforts are taken by the luxury companies, but from the other side it might be the high risk of

receiving very negative feedbacks. Moreover, the reason why these campaigns are activated may originate from social causes not appreciated by the majority: again, people might be confused by the position assumed by the company and, finally, the efforts may be translated into negative consequence towards the company's image.

3.1.8 – Stage 8: Commercialization

The last stage of the BAH model is the commercialization and it ends the entire NPD process.

Luxury companies arrive at this point with clear information about: 1) the quantity to produce in order to create the sense of limited availability, 2) the channels to exploit to increase exclusiveness, 3) the price to impose to generate inaccessibility and stimulate desires, 4) the level of eventual promotion to apply to incentive its uniqueness. These marketing mix considerations are critical in order to understand how effectively position the new product once it will be in the market.

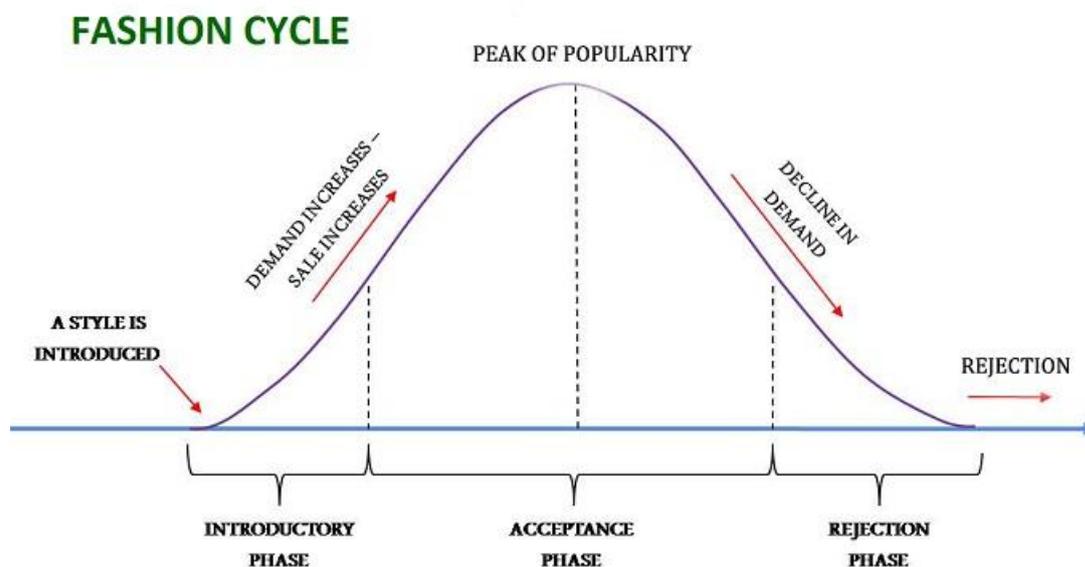
Strategies are different and depend on the degree of innovation the company is planning: luxury companies which develop incremental solutions to own precedent products should simply focus on how to improve the already existent target; radical innovation deserve, differently, huge resources in terms of both costs and time, especially in the previous stage of testing due to the infinite variables to take into account: in the GoPro example⁶⁸, the American company faced 7 years of bloody R&D to develop its disruptive idea. From the sixth stage the real aim of luxury companies through the introduction of new products has been revealed: to gain sustainable competitive advantages over the competition. Thus, the innovation should be able to increase entry barriers, to leave a strong impression in the consumers' mind and to empower more and more the company's brand and reputation. Usually, in any industries is common to find few companies that monopolize the entire market: in the smartphone sector there are Samsung and Apple, the photograph world presents Kodak and Fuji, Mc Donald's and Burger King dominates the market of hamburgers while general sport is always covered by Nike or Adidas.

In the luxury industry, with clear differences between specific segments, there might be more or less companies to compete. In the fourth stage, by referring to the USP, have been mentioned three companies belonging to the fashion world: this specific industry is one of the most complicated, where during the commercialization phase all the efforts are focused especially on instant positive and irresistible perceptions to create into the customers' mind. Due to the particularity of this segment, unlike other luxury companies that, in general, don't feel pressure to shorten the

⁶⁸ Paragraph 3.1.6, Exhibit 3.8

development time, fashion firms should deliver own new product before as fast as possible. According to Karin Tracy, Head of Industry, Retail, Fashion, Beauty and Luxury for Facebook, “*Speed is everything right now*”: she explains why brands like Gucci, Ralph Lauren or Burberry are adopting new strategies to increase flexibility and customization, in order to anticipate competition and market demand. Indeed, in the fashion industry, any new product moves at different speeds into an uncommon lifecycle different from the common S-Curve⁶⁹. Unlike the precedent, in the luxury industry it is not easy to define universal paths because of continuously change of trends, impacts, market reactions, external variables and customers’ illogic behavior: consequences are visible on curve’s slope in the graph below (Exhibit 3.9⁷⁰).

(Exhibit 3.9) – The fashion industry lifecycle



The introduction phase is pushed up by opinion leaders or testimonials the luxury company selects to create an instant and effective connection between the new product and the social status to which it refers. Customers immediately understand the ‘fictitious’ importance of being the possessor of the innovation, thus they cross the adoption process⁷¹ stages faster than the standard average. The greater new is in the central zone, where the innovation reaches the ‘Peak’: this is the highest point of the chart. The maximum level of volumes are sold and huge marginality is gained. From this

⁶⁹ Chapter 2, paragraph 2.10

⁷⁰ https://www.google.com/search?q=fashion+product+life+cycle&tbm=isch&tbs=rimg:CVHm7EP2X9CIjh2QH9h13alPuxho7fWigkhigY7HNj7OFpCH9iFTWd5e8LkotpJGO6catseNWrfX0jJMehiV8oNzSoSCXZaf2HXdqUEZatlo_14k3k9KhIJ7GGjt9aKCSER5PtTUzgpjZcqEgmKBjsc2Ps4WhHosuJFw5nZ5ioSCUIf2IVNZ317EZzxk9ooCJamKhIJwuSi2kkY7pwREFWpp51YSVMqEglq2x41asXHSBGFsI9l_1sIEByoSCckx6GJXyg3NEbfOBMESm6sE&tbo=u&sa=X&ved=2ahUKEwjc1O62hI7iAhWHUIAKHbLgCa0Q9C96BAgBEBg&biw=1920&bih=969&dpr=1#imgrc=qF0FPduzVnchpM:

⁷¹ Chapter 2, paragraph 2.8

point down, the luxury fashion company is not able anymore to reach the same amount of profitability and the innovation goes down until a new one is able to replace it. Again, speeds with which new products run the curve depends on trends, external impacts and market demand volatility.

Usually, in the last stage, the luxury companies follow the most critical law of the already mentioned 22 *Immutable* wrote by Jack Trout and Al Ries: *'Law #13: The law of sacrifice: you have to give up something to get something'*. Luxury companies are the leaders of own respective markets, but generally these areas are just few segments or specific niches. Clearly, by covering larger zones, firms may gain higher profits, but the idea of uniqueness and exclusiveness might be compromised. The more the company is specialized on a precise matter, the higher the probability to gain absolute success in that dimension. Indeed, the temptation to serve all the market with unique products may have the dramatic counter-effect to avoid the idea of inaccessibility and, at the same, it may shift the company's position from luxury to massive. Luxury companies decide to renounce to the absolute control of the whole market to monopolize own selected segment through unreachable results: the challenge is to continuously improve own proposal in order to better serve the already privileged customers.

However, it doesn't mean successful companies may change or enlarge own target: through powerful and reasonable communicative efforts these companies may conquer higher market share. Some example may arise from both massive and luxury industries: about the first category, Philip Morris created an unique image with its Marlboro, represented by cowboy: its ability was to direct these cigarettes not only to men, but even to women; about the second category, companies in the luxury industry largely exploit the public relations (PR⁷²). The official presentation of fashion collection or new luxury cars generally are preceded by public relations campaign towards the press. Moreover, key events in the most beautiful and evocative cities are great occasion to empower the launch: luxury companies usually have own traditional seats where to present new innovations. For example, annually, Apple presents at Palo Alto (California) its newest iPhones, luxury cars exposes own latest models at the Geneva Salon, while most important fashion companies select American or French cities.

3.4 – The Product Lifecycle in the luxury industry

Luxury companies have the strong tendency to continuously conquer the market: thus, once an old product ends its natural lifecycle, they immediately replace it with a new one. Clearly, it is an

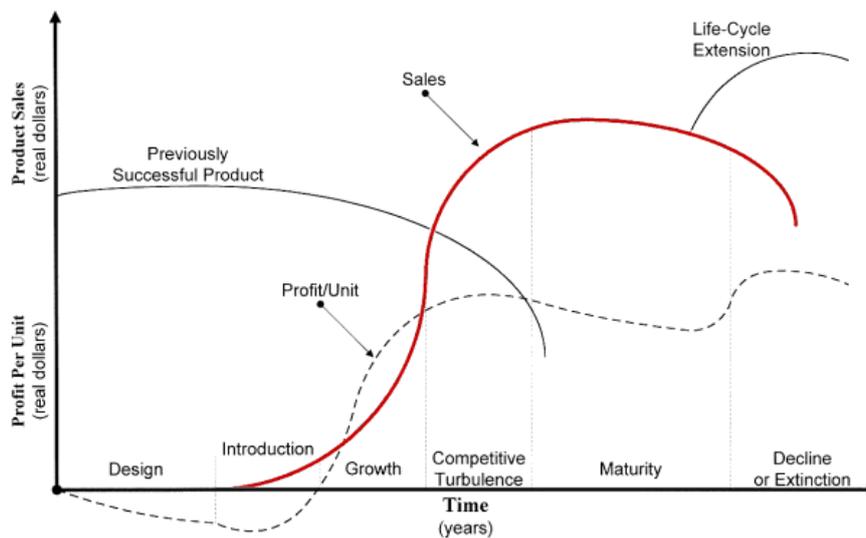
⁷² Chapter 3, Paragraph 3.1.7

almost ‘universal’ theory adopted in any sector, but in the luxury industry it assumes higher strategic relevance.

Luxury firms exploit big advantages to concretely plan the future: always unpredictability plays a determinant role, but it shouldn’t have dramatic impacts on these huge businesses, thanks to its efforts on forecasts and recovery actions. Negative consequences may obviously erode market share, but luxury companies don’t disappear from one day to the next: future moves and introductions are projected into 5-years business plans.

The picture below (Exhibit 3.10⁷³) shows how luxury companies may extend the future introductions of own products based on the portfolio evolution.

(Exhibit 3.10) – Extension of the Product Lifecycle in the luxury industry



The red line represents the sales curve presented in the common product lifecycle⁷⁴, while the dashed line detects profit trend. Beyond different nomenclatures, one new critical phase appears at this stage: competitive turbulence. Luxury companies concentrate own efforts during this interval to create the perfect linkage between precedent product’s decline and next innovation’s growth. Through a powerful and concrete coordination, it is possible to create continuous inflows that allow easier recover of new trade-offs due to following launches.

⁷³https://www.google.com/search?q=fashion+product+life+cycle&tbm=isch&tbs=ring:CVHm7EP2X9CIjh2QH9h13alPuxho7fWigkhigY7HNj7OFpCH9iFTWd5e8LkotpJGO6catseNWrFx0jJMehiV8oNzSoSCXZaf2HXdqUEZatlo_14k3k9KhIJ7GGjt9aKCSER5PtTUzgpjZcqEgmKBjsc2Ps4WhHosuJFw5nZ5ioSCUIf2IVNZ317EZzxk9ooCJamKhJwuSi2kkY7pwREFWpp51YSVMqEglq2x41asXHsBGFsI9l_1sIEByoSCckx6GJXyg3NEbfOBMESm6sE&tbo=u&sa=X&ved=2ahUKEwjc1O62hI7iAhWHUIAKHbLgCa0Q9C96BAgBEBg&biw=1920&bih=969&dpr=1#imgrc=WHwj0w-SoFbVaM:

⁷⁴ Chapter 2, paragraph 2.10

Problems linked to this approach may arise due to the famous phenomenon of cannibalization. Luxury companies may introduce sooner an innovation than the estimated end-lifecycle: customers still appreciated the old product but, because of its replacement or preview presentation of the subsequent innovation, they immediately look for the new one. The result is an inferior exploitation of the precedent technology, which is ‘cannibalized’ by the new entrant. Of course, luxury companies may face the same product even when they plan a parallel introduction of multiple products. However, remedies against the cannibalization are taken during the fourth stage of the NPD product: the concept generation. Luxury companies plan the new products based on powerful concepts that explain own uniqueness: indeed, through its exploitation, one specific customer shouldn’t desire another innovation of the same firm, because there is only one product capable to reflect its personality and to achieve the hoped prestige or social status. Obviously, different features contribute to reduce cannibalization risk: it explains why many products are proposed in different versions, by allowing customization of colors, materials and other not relevant or critical component that strongly upset the initial design. Finally, it is also possible to empower the previous product thanks to the new innovation: in this sense, a sort of ‘revitalization’ is applied by the same company which exploit new technologies to revamp old successes.

The same graph above shows also the possibility to extend the product lifecycle in order to enlarge as much as possible the maturity phase: the solution is tempting but it doesn’t guarantee success. One of the several laws proposed by Jack Trout and Al Ries in their ‘*Immutable*’ 22 principles strongly face this point: according to the authors, one of the most critical and diffused mistake is proper the abuse of line extension. Companies believe that by enlarging own proposal or portfolio there will be achieved new revenues: unfortunately, because of cannibalization, wrong timing or bad forecasts these large businesses don’t generate revenues from the introduction and, contrary, they deeply suffer the new trade-off periods.

Chapter 4 – How to launch a new product in the luxury automotive industry: the Ferrari S.p.A. Business Case

Among all the various NPD models elaborated in the past fifty years, the literature have highlighted some discrepancies caused, especially, by the nature of the industry.

As anticipated above, both textbooks and literature propose processes that are more addressable to specific areas. Textbooks mentioned Verloop (2004) who experimented an NPD model applicable in chemicals and petroleum industry or Cormican & O’Sullivan (2004) who defined an approach suitable for healthcare, computing and electronics sectors. Literature offers through Dimancescu & Dwenger (1996) an NPD process addressable to manufacturing organizations, while Griffin (1997) provided another model to high/low tech firms.

To the purpose of this thesis, that finally discusses the company Ferrari S.p.A., in this last chapter the focus shifts from the aforementioned generic approach NPD models deeply immersed in the wider design and engineering literature. Marked by more technical features, models belonging to this kind of industry exponentially evolved during the past forty years: one of the most historical, dated back on 1989, comes from Finger and Dixon. Based on review of prior researches, authors concluded a six-stages model by starting from the recognition of need and evolving through specification requirements, concept formulation and selection, embodiment of design detail and, at the end, production, sales and maintenance phases.

On 2006, Osteras *et al.* model highlighted two critical stages divided into sub-activities: the pre-development stage derives from the combination of pre-design phase focusing on customer needs identification and the further in-depth examination renamed “conceptual design”. The second stage includes the phases of development of any single component and its subsequent assembly in primordial prototype: it ends with the production phase which imply trial tests, quality controls and feedback. This model presented lots of similarities with the process revealed four years later by Unger & Eppinger: the authors developed together the aforementioned ‘*Spiral Product*

*Development Process*⁷⁵, while the latter was the inventor in 1997 of the *Desing Structure Matrix*⁷⁶, with the contribution of Smith.

On 2011, a controversial NPD engineering model was elaborated by Luchs and Swan. Strength of this approach is the high degree of detail among the categories identified: the strategy examines both internal aspects like firm’s objectives and external context; product design process begins with the idea generation and screening, it shifts to concept development and evaluation, it evolves to technical implementation and manufacturing and it finally ends with the commercialization phase. Along these phases, pillars are especially creativity and architecture modularity: an exclusive role is played by the identification of packaging design to give more and more relevance to the most important topics. Another peculiarity of the Luchs and Swan NPD model is given by the consequences examination: consumers’ evaluations and behaviors are studied in order to drive future successful evolution of the designed product. At the same time, company’s performance are measured and checked to verify the alignment with pre-fixed objectives.

As follow (Table 4.1), the summary table of the engineering models described above: by looking at the full empty row, it is evident the completely absence of economic and financial business analyses required by the application of these models.

(Table 4.1) – The engineering NPD models (1989 – 2011)

| <i>Finger & Dixon (1989)</i> | <i>Osteras et al. (2006)</i> | <i>Unger & Eppinger (2010)</i> | <i>Luchs & Swan (2011)</i> |
|-----------------------------------|--------------------------------|------------------------------------|---|
| | | Planning | Context & Strategy |
| Recognition of Need | Phase 1: Pre-Design | | Idea Generation |
| Specification Requirements | | | Idea Screening |
| Concept Formulation and Selection | Phase 2: Conceptual Design | Concept Design | Concept Development & Evaluation |
| | | | |
| Embodiment of Design Detail | Phase 3: Component Development | System Level Design | Technical Implementation |
| | Phase 4: Prototype Development | Detailed Design Iterations | Manufacturing |
| Production | Phase 5: Production | Integration & Test | Commercialization |
| Sales, Maintenance | | Release | Consequences: Consumer Evaluation & Choice, Product Success, Firm Performance |

The Ferrari’s NPD process doesn’t respect a specific model: no universal rules neither engineering re-adaptations might decline a process of this company in continuous evolution. Luchs and Swan

⁷⁵ Chapter 1, paragraph 1.1.2, exhibit 1.4

⁷⁶ Chapter 1, paragraph 1.1.2, exhibit 1.5

proposed a well-result, however its pure engineering application is not applicable for automotive companies that live in the luxury industry. At the same time, the BAH model, even if it might be considered ‘universal’ and it demonstrates consistency with the richest world, it doesn’t respect the Prancing Horse parameters.

In order to understand the linkage among these concatenate first stages of the process and the following phases, very relevant answers and considerations are offered by one of the Ferrari’s Product Manager, who was available to grant an interviews to the candidate. Other inputs to debate the same topics are offered even by Ferrari S.p.A. through the permission of propose again some official transparency of the latest Capital Markets Day⁷⁷.

As follows, after framing the automotive industry with a brief introduction of its history and a successive reference to the luxury segment, the focus shifts on the Ferrari’s world to reveal the key points of the new product development process pursued by the company in the realization of ne successful models.

4.1 - The automotive industry

The automotive industry is one of the most controversial and critical world.

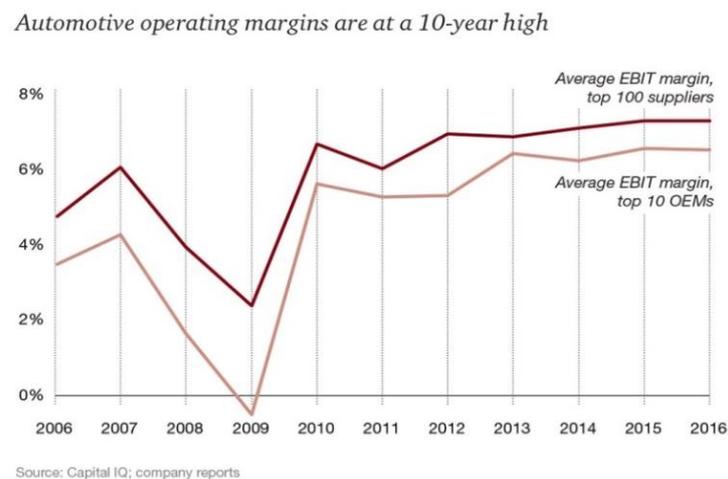
Historically, its dated back to the beginning of the last century, when the motorization process in Europe anticipated the American development and the famous Fordism approach inspired by Henry Ford. Primordial vehicles were directed towards the mass-market, thanks to the accessible price and its copious standardization.

Always geography, politics and economics variables played an important role to its evolution: after the II World War, the European production dramatically increased, moving from 1.6 million units in the 1950s to the 6.1 million cars in the 1960s. In the following years the evolution conducted to a totally different perspective: drivers increased both own demand and needs, asking for new models and aesthetic improvements. Simultaneously, social importance began to become a relevant matter through its instant association with the economic status: a common belief associated larger cars to richer owners. Thus, automotive companies moved from a product-oriented focus to a customer-oriented approach: car lifecycles were reduced from 10-12 years to 3-4 years to embrace drivers’ requests for updated version of previous models, while ranges increased both in variety and models. At the end of the last century, car manufacturers exponentially increased own proposals by offering different colors, shapes, performances and even primordial concepts. Two results were finally

⁷⁷ 18.09.2018

reached: from one side the drivers were more and more attracted, from the other the competition dramatically increased. As consequence, the beginning of the new century faced an enormous financial crisis, as shown below (Exhibit 4.1⁷⁸)

(Exhibit 4.1) – The financial crisis of the automotive industry (2006-2016)



In the chart is evident the general trend of the automotive industry in the period before and after the crisis: the red line represents the average EBIT⁷⁹ margin of top 100 suppliers, while the pink one deeply investigates the same indicator focusing on the evolution of the top 10 OEMs⁸⁰. Both lines suffered dramatic losses in the crisis between 2008-2009 due to the bloody competition: automotive companies still continue to heavily invest even if they reached lower and lower profits. Moreover, during the same two-years period, the general economic recession drastically reduced registrations from 69,5 million on 2007 to 56,6 on 2009. Consequences were principally visible in corporate dynamics: mergers and shared platforms increased to reduce the negative impacts generated by the crisis. However, not all the partnerships gave the hoped results: for example, the historical and famous acquisition of Daimler costed lots of billion to Fiat Chrysler which, after generating dramatic losses, decided to break up the businesses.

In the following years the automotive industry enjoyed a general economic recovery thanks to the technology improvements and processes' evolution: the entire supply-chain assumed a more strategical role in order to achieve efficiency, the customization became a must to meet the growing exigent requests from the customers, push-pull approaches were spread worldwide to faster

⁷⁸ https://www.google.com/search?q=sales+trend+automotive+sector&rlz=1C1GCEU_itIT843IT843&source=lnms&tbm=isch&sa=X&ved=0ahUKEWjL6sqZwpriAhXKDewKHdd4AOIQ_AUIDygC&biw=1600&bih=1089#imgrc=NMgL P_2qKhvpRM:

⁷⁹ Earnings Before Interest and Taxes

⁸⁰ Original Equipment Manufacturers: these are the final producers of the automotive vehicles. They don't have to be confused with the Component Suppliers (CS) that provide only specific parts.

deliveries and production. At the same time, more brands emerged and specialists started to focus on precise segments and targets, while many automotive companies expanded geographically: local strategies were implemented to meet specific and cultural needs emerging from diverse economies. In the same graph above, it is visible the impact generated by all these factors, able to explain the positive trend enjoyed by both suppliers and top 10 OEMs in the years after the crisis.

Recently, the automotive industry moved another step forward and it converted into a powerful and innovative reality. Indeed, at the beginning of the 1980s, the OEMs of the whole automotive world, due to the complex assembly of the huge amount of different components and parts involved, moved to global platforms to develop different models throughout similar production processes. Normally, the lifecycle of these platforms lasted more than product's ones. However, as the market demand increased by asking more varieties and other proposals, at the same time the arising of new technologies shortened even the length of these global platforms: from the 8.6 years of average from the 1980s, the development stage became faster and faster to arrive at the nowadays average of almost 6.7 years⁸¹. Always mistakes about market predictions or forecasted volumes may happen: if from one side wrong expectations about a single model might be accepted without almost no damages, errors on these global platforms may destroy even the most prominent companies. For these reason continuously renovations to the production are executed to monitor the efficiency of any phase and correct eventually imperfections once the first models are launched.

Today, consumers are more and more interesting in the automotive market: always they gave great importance to cars, but in the last years very new topic are emerging. Electronics is bringing more and more possibilities to exploit new powerful resources to revolutionize the entire industry: environmental issues, zero emissions and renewable energy are opening up to future opportunities. At the same time, technology and digital evolution are diffusing innovative tools able to attract more and more drivers: artificial intelligence is increasing its efforts and driverless cars are becoming a truthful reality. The recent digital evolution reflected its consequences even in the automotive industry where more and more advanced technologies and innovations are daily adopted and integrated: plans towards the 2025 are focused on improvements related to environmental protection with zero-emissions and, above all, concrete conversion towards the hybrid revolution. The entire industry is moving towards the AGV (Automated Guided Vehicle) and today, all these aspects are jointly in smarter and more powerful cars.

Generally, car classification finds distinction depending on areas and Countries, due to several laws, emission policies and validation procedures. However, some general car classification were

⁸¹ Around the 22% less than the overall average from 1980s.

underlined to concretely segment the universal automotive industry. Usually, measures adopted to correctly rank different models and vehicles concern dimensions, weight, sizes and total volumes expressed by the sum of the cabin and luggage. Both American⁸² and European⁸³ Institutes worked on it and, from 1999, as described in the EU document⁸⁴, the today's automotive market specified by the European Commission is divided as follows:

- Segment A: it is directed to minicars. In this segment there are the smallest cars, commonly defined 'city cars'. These are vehicles generally used in big cities, thanks to its practicality. Commonly smaller than 370 cm in length, it is not suitable to long trips neither against difficult conditions. Body structures of the segment are hatchback, MPV or cabriolet;
- Segment B: it is directed to small cars. These vehicles are larger and heavier than those on the Segment A, but dimensions remain contained. However, these are the most sold cars in Europe thanks to prices lower than 20.000€. It includes body structures such as station wagon, coupé, roadster, cabriolet, MVP and sedan;
- Segment C: it is directed to the medium cars. It is one of the most profitable segments because it includes the classic family car of medium sizes. Dimensions are larger, however these vehicles are commonly used in the cities thanks to its agility and comfort. About body structures, it includes almost the same models mentioned in the Segment B;
- Segment D: it is directed to the large cars. It opens up to the 'sporty' vehicles with larger dimensions and higher performances, not daily used in the cities. However, the concept of the family still survives in this segment: space and safety are dynamics available in almost any D-vehicle;
- Segment E: it is directed to the executive cars. These are large cars, usually the best-in-class to the company to whom it refers. It is recognized as the segment of the top class cars: higher performances are related with more comfort and higher price;
- Segment F: it is directed to the luxury cars. It includes the most elegant and prestigious cars, characterized by large dimensions, obsessive attention to details and innovative technologies. These cars are the most desired and collected: the F-segment is known as the luxury segment vehicles;
- Segment G: it refers to the "*super*" luxury cars due the uniqueness of its vehicles. The most popular models available in this segment are produced by Aston Martin, Bentley, Ferrari, Lamborghini, Maserati, Porsche and Rolls Royce;

⁸² Through the US Environmental Protection Agency (US-EPA) and Insurance Institute for Highway Safety (IIHS)

⁸³ Thanks to EuroNCAP and European Commission support

⁸⁴ "REGULATION (EEC) No 4064/89 MERGER PROCEDURE Regulation (EEC) No 4064/89 Merger Procedure"

- Segment J: it especially refers to the famous Sport Utility Vehicles (SUVs), available in different sizes, from small to mid, large and premium. Cars in this segment achieve great performances and these have the force of an off-road vehicle;
- Segment M: it is dedicated to the ‘Multi-Purpose vehicles’ (MPVs), already mentioned in the segments A and B. Yearly it reaches high sales figures in the world and its models are very popular and appreciated;
- Segment S: it refers to sports cars distinguished in the segment between convertible and coupé. Commonly these models prefer performances than comfort or large spaces, but good compromises are often reached.

In the future, it is probable that the segments will be extended to embrace the electric revolution the whole industry is facing: business plans are extended until the 2040 where forecasts talk about almost 600 million electric cars in Italy and even higher numbers in other European Countries like Germany or Switzerland. Clearly, infrastructures must be efficient to support its introduction through the installation of many charging points. Moreover, daily ‘zero-emissions’ parameters are becoming more restrictive due to federal tests and technical requirements: automotive companies are afflicted by new measures and in order to obtain appropriate validation it may face complicated challenges, as happened to FCA that recently communicated the withdrawal of 862.520 cars in the USA due to missed approval of new policies. However, with its new electric city car planned for the 120th year of the company, always FCA is promptly converting its ranges according to the new revolutionary trend. Clearly, the entire industry is moving towards the same direction: Volvo presented at the Geneva Motor Show its Polestar 2, to reply Tesla’s competitive models, but almost all the most known car companies worldwide such as Audi, Honda, Jeep, Kia or Volkswagen embraced the so-called “Green Revolution”

4.2 - The luxury automotive industry

As the whole luxury world, even the premium automotive industry experienced different circumstances compared to the mass-market.

Luxury automotive concept started after the II World War, when initial ideas of prestigious and distinction between social classes began to be spread. First associations assigned larger cars as symbol of richer people: manufacturers started to insert larger vehicles in own ranges to introduce the primordial idea of luxury. Progressively, as the whole automotive industry moved from a product-orientation towards a central customer approach, the idea of luxury evolved: richer people not only had to possess larger cars, but they even should replace it with newer versions once

successively introduced. Companies immediately catch the potential of this specific target, thus their portfolio were incredibly enlarged to embrace new intriguing models: at the same time, lifecycles were reduced to improve sales generated by rich customers. Initial advertisements and campaigns supported the idea of prestige around the main concept of the ‘car’: at the end of the last century, many automotive companies’ testimonials were driving illustrious cars to empower the general perception of fame and luxury.

Differences among continents generally influenced the automotive luxury world: in Europe the first push arrived from France, where luxury cars were already available prior the II World War. Germany, Italy and UK immediately followed the leading producers of luxury cars. Aston Martin, BMW, Bugatti, Ferrari, Lamborghini and Rolls-Royce were born in those years, while in Soviet Union manufacturers began to produce limousines. In America other brands have already existed before the war: in that period, the highest luxury selling one was the Cadillac and the most relevant market was the North. Moreover, fundamental concepts such as convertibles, spider or coupés began to spread; in the Asian market, Japanese manufacturers started to produce luxury cars by diffusing brands like Toyota and Nissan. An intense grow happened in the 1980s, where Asian manufacturers began to develop and create sub-brands for the marketing of luxury cars. Independently from the area, differences among luxury cars and companies concerned diverse engines, dimensions, performances, aesthetics and services.

As the automotive industry, even the luxury car business faced negative consequences of the 2008-2009 financial crisis. For the first time, some large automotive companies decided to cut prices of own products: however, the ‘must-rule’ of the luxury industry to impose exigent requests led these firms to negative consequences in terms of image’s and social attractiveness. Potential solutions arose by the exploitation of emerging markets like China and Russia or through mergers and acquisitions that marked the entire industry: luxury car companies decided to buy smaller brands to enter into new segments, by exploiting own fame and reputation to attract complete different targets. At the same time, partnerships were activated to face external troubles by sharing common product platforms or collaborator’s strengths: for example, Ferrari S.p.A. started to produce engines for Maserati in a powerful relationship that will last until the two-years 2021-2022. Other brands decided to create common establishments to faster production and react to lower demand.

However, the most considerable and relevant results derived internally thanks to processes’ improvements and factories evolutions: concrete efforts to face the crisis conducted to slimmer procurement processes and faster supply chains with higher integration in order to reach new levels of efficiency. Continuously efforts on customization opened up new incredible possibilities to boost the already engaging models: almost all the luxury car companies allocated budget and resources

towards the development of new optional, materials and techniques capable to improve and to vary the original portfolio. The evolution of software like the ERP (Enterprise Resource Planning), together with a more and more integrated CRM (Customer Relationship Management) was decisive to manage financial parameters and simultaneously increase company's flexibility and reactions towards markets' changes. Moreover, the Internet and digitalization evolution had consequences on the internal efficiency to faster collaboration across departments allowing connection with providers located worldwide: vertical integration was reinforced by the continuous updates of control systems and coordination, while segmentation strategies were extended to reach emerging Countries and new targets. Finally cloud manufacturing through the implementation of new technologies on the so-called *Industrial Internet of Things* increased effectiveness towards the producer side, through the exploitation of smart objects and Big Data techniques. Indeed, the advanced automation with the progress of robotics lead, again, to more efficient and smart processes, by improving even interfaces man/machines.

Generally, as the entire automotive industry in which it is inserts, the luxury market is divided in the following different categories:

- Entry-level luxury: the smallest luxury cars that emerged around the 2000s. The category is also known as premium compact and it may include Audi, BMW and Mercedes-Benz;
- Compact luxury: compact executive cars are part of the D-segment in North America;
- Mid-size luxury: vehicles ranked in this sub-category are larger than normal family cars;
- Full-size luxury sedan: known even as luxury saloon or luxury limousine, it is the one that is perfectly part of the aforementioned F-segment. Existing models belonging to the sub-category might be: Porsche Panamera, Lexus LS, Cadillac CT6;
- Ultra-luxury: its price commonly is over than \$100,000. Examples might be Rolls-Royce, Bentley or Ferrari. These cars praise incredible performances and are produced by great brands with a long tradition of manufacturing luxury cars. Normally, they are empowered by V8 or V12 engines.
- Luxury SUVs: this category recently emerged from the America with Range Rover that was the precursor at the beginning of the 1990s. However, today it is not universally considered a luxury segment, even if it is showing an exponential growth in the last decade.

Main differences among luxury segments discussed above derive from (high) price ranges, performances, services and launch strategies. However, technical aspects such as engine's positioning between the front/rear-engine, evolution from front-wheel drive to all-wheel drive or

other features related to dynamics, aerodynamics and design are always critical in distinguish different models.

As anticipated, today the automotive industry is living an epochal breakthrough: the convincing progress of the hybrid is converting the whole business to electric, and the luxury segment is not an exception. In the last Geneva Motor Show, the most famous prestigious brands presented own revolutionary cars: Tesla, the precursor of this new trend, presented its new crossover ‘Model Y⁸⁵’; Aston Martin showed its third V6 hybrid supercar named “Valhalla⁸⁶”, together with the announcement of its first⁸⁷ electric vehicle; Lexus presented its hybrid LS⁸⁸; Porsche presented its hybrid Panamera Sport Turismo⁸⁹. Especially BMW, at the end of the event, was recognized as ‘ecological Queen’ thanks to its electric 745 version⁹⁰. Finally, Ferrari introduced its hybrid model at the end of May: the Ferrari SF90 STRADALE.

4.3 - Ferrari S.p.A.

Ferrari S.p.A. is one of the most famous automotive luxury company: representing the ‘Italian Excellence’, as it declares in its pay-off, in 2019 it was considered the most powerful and influent brand in the world, with a commercial value of € 7.1 billion according to Brand Finance⁹¹, on 2019, its CEO is Louis C. Camilleri, while the president is John Elkann⁹².

Ferrari S.p.A. is one of the best Italian producer of sporty luxury and racing cars: in any part of the world it is possible to find its incomparable vehicles empowered by its unique elegance and design. Spread in all the planet through its more than 60 markets worldwide and its huge network of 180 authorized dealers, annually the company achieves its objectives by increasing both profits and units sold. Among them, Ferrari’s models differ in concepts, segments, targets, technical features, technologies and innovations. Whatever the case, the single common denominator is the strong derivation with its traditional and universal racing DNA, mainly represented by its sporty models. At the same time, elegance and luxury remains pillars of its strategy and are perfectly, especially inserted in its Grand Tourism soul that form the other side of its full-range. Moreover, to pay tribute to its glorious tradition, the company occasionally develops unrepeatably luxury cars such as the

⁸⁵ The fourth electric vehicle of its range, price: \$39,000

⁸⁶ Belonging to the ‘Project 003’, there will be produced only 500 units from end 2021, price: > \$1,000,000

⁸⁷ It will be called ‘Aston Martin Rapide E, produced in only 155 units. No available information about the price

⁸⁸ Price swings from € 105.000 to € 140.000

⁸⁹ Price from € 120.016 to > € 200.000

⁹⁰ The 745e, price € 106.400 and the 745LexDrive, price € 114.400

⁹¹ <https://brandfinance.com/news/ferrari--nuovamente-il-brand-pi-forte-del-mondo/>

⁹² From 21.07.2018

latest Ferrari MONZA SP1/SP2 that opened up a completely new unique segment⁹³ to tribute the eternal company's history.

In the picture below (Exhibit 4.2), a complete panoramic of the product range of Ferrari S.p.A. dated to September 2018, as presented at the Capital Market Day by the Ferrari's CMO⁹⁴ and Senior Vice President Enrico Galliera. At June 2019, the company's portfolio added the following models: the Ferrari F8 TRIBUTO⁹⁵ and the Ferrari SF90 STRADALE⁹⁶

(Exhibit 4.2) – The most complete product range ever (*Capital Markets Day*⁹⁷, 2018)

THE MOST COMPLETE PRODUCT RANGE EVER
 Ferrari cars stand out for their extreme performance, distinctive design and state-of-the-art technology

ROAD CARS

| SPORTS | | | GRAN TURISMO | | |
|-----------------------|------------------------|----------------------|------------------------|-------------------|------------------|
| | | | | | |
| V8 488 GTB | V8 488 Spider | V12 812 Superfast | V8 Portofino | V8 GTC4Lusso T | V12 GTC4Lusso |
| SPECIAL SERIES MODELS | | | FUORISERIE AND ONE-OFF | | |
| | | | | | |
| V8 488 Pista | V8 488 Pista Spider | V8 Ferrari J50 | V8 SP38 | | |

TRACK CARS

| FERRARI CHALLENGE | THE XX PROGRAMME | RACING CARS |
|---------------------|------------------|-------------------|
| | | |
| V8 488 Challenge | V12 FXX K EVO | V8 488 GTE/GT3 |

Capital Markets Day | September 18, 2018 | 6

The company was found in 1947 in Maranello (Modena) by Enzo Ferrari. Actually, origins were dated even in the 1929, when the most famous side of the “Prancing Horse” was found: Scuderia Ferrari. However, due to matters concerning property rights, the birth is conceived on the 12 March 1947, when in route Abetone Inferiore it appeared the first branded Ferrari car: the 125 S, driven by Franco Cortese.

From that day, the company grew exponentially by living both positive and negative phases, strictly linked with the results of its sporty side: wherever its fame was recognized and its style was appreciated. When the founder Enzo Ferrari died, the company became part of FIAT group until the 2016, when Ferrari decided to go public on the Italian Stock Exchange⁹⁸, by integrating with Exor

⁹³ The ‘Icon’

⁹⁴ Chief Marketing Officer

⁹⁵ March 2019

⁹⁶ May 2019

⁹⁷ Ferrari corporate website

⁹⁸ Ferrari S.p.A. is also present in the New York Stock Exchange (NYSE)

N.V.. During these decades, the company acquired more and more fame: it has stipulated several merchandising agreements in very different sectors, from clothing⁹⁹ to toys¹⁰⁰, watchmaking¹⁰¹ or videogames¹⁰²... Its great history allowed the opening of two museums in Maranello and Modena, together with more than 50 stores spread in the best cities of the world. Moreover, two theme parks were opened to honour the prestigious company: the Ferrari World in Abu Dhabi and the Ferrari Land in Port Aventura.

As anticipated, the company enjoys an incredible racing soul thanks to the Scuderia Ferrari, probably the most famous and known side of the firm. Every year the Prancing Horse participates to several championships, from the most famous Formula 1¹⁰³ to other competitions concerning Grand Tourism, electric cars or sport prototypes vehicles. Moreover, the same company is also organizer of famous mono-brand championships like the Ferrari Challenge¹⁰⁴ or the Pirelli Cup. Thanks to the Formula 1 Grand Prixes and its extraordinary reputation, Scuderia Ferrari enjoys several partnerships with well-known companies: all these brands are visible in the powerful and unique SF90, the official Ferrari racing car in the Formula 1 Championship 2019.

4.3.1 - Premise

The Ferrari S.p.A. NPD model differs from the others in the evolution of the entire process: by trying to follow the Booz, Allen and Hamilton perspective, the formulation of an NPS strategy is not always possible because the introduction of a new model is not treated as an isolated event but, differently, as part of a clear and broader strategy. Any single launch is studied on a five-years projection in what is a concrete strategic plan, in order to have a both internal and external common vision. All the stakeholders and shareholders are informed, together with the investors, of the future decisions the company is planning to make. Any smallest detail is carefully examined to have consistency with the macro-strategy spread along the entire period of reference.

On the 18th September 2018, Ferrari S.p.A. officially communicated its next five-years industrial plan at the Capital Markets Day: as follows (Exhibit 4.3), the key financial targets examined by the company during the period from 2018 – 2022.

⁹⁹ E.g.: Puma, Ray-Ban, etc.

¹⁰⁰ E.g.: Lego, Bburago, etc.

¹⁰¹ E.g.: Hublot, Movada, etc.

¹⁰² Electronic Arts, Microsoft, etc.

¹⁰³ In 2019 its pilots are Charles Leclerc and Sebastian Vettel

¹⁰⁴ In 2019, the Ferrari Challenge takes place in Europe, North America, Asia Pacific and Great Britain

KEY FINANCIAL TARGETS



| (€B, unless otherwise stated) | 2017A | 2020E | 2022E |
|-------------------------------|-------------|----------------|------------------|
| NET REVENUES | 3.4 | > 3.8 | < 5.0 |
| ADJ. EBIT (margin %) | 0.78 23% | > 0.9 ~ 24% | > 1.2 > 25% |
| ADJ. EBITDA (margin %) | 1.0 30% | > 1.3 ~ 34% | 1.8-2.0 > 38% |
| ADJ. EPS DILUTED(*) (€) | 2.82 | > 3.40 | > 4.70 |
| IND. FCF | 0.33 | > 0.40 | 1.10-1.25 |

DELIVERING SOLID GROWTH

Note: (*) 2020E and 2022E Adjusted EPS diluted calculated using the diluted number of shares at June 30, 2018, assuming no further shares buyback.

Capital Markets Day

Key Financial Targets developed based on IFRS standards effective in 2018

September 18, 2018 | 12

The positive cash-flow is symptom of growing predicted revenues until the 2022: financial parameters presented by the Ferrari’s FCO¹⁰⁶ Antonio Picca Piccon instantly reflects consistent positive margins of both adjusted EBITDA¹⁰⁷ and same evaluations without depreciation and amortization¹⁰⁸. Even the FCF¹⁰⁹ reflects the continuous innovative direction pursued by the company: the further examination of future upcoming new trends are receiving a prompt reaction from the Prancing Horse which is ready to introduce several models capable to face any new challenge.

First, in order to generate the best idea capable to be converted into the new successful model, Ferrari S.p.A, although always driven by a “Product Driven approach”, has the capability to give importance even to other dimensions. The external environments formed by the well-known customers, the fierce competitors or the emergence of new technologies or trends offer continuous inputs and deserve constant examination; the internal structure, from the top management to the employees, thanks to its strong interaction with the products is carefully monitored in order to detect other potential starting points.

The process evolves through the constant interactions of multiple players: managers of Technical Direction, Design Centre, Marketing, Commercial, Digital and Communication departments collaborate at different levels in order to successfully create, screen and elaborate powerful ideas that will be translated into meaningful concepts, able to successively support the future new model.

¹⁰⁵ Ferrari corporate website

¹⁰⁶ Financial Chief Officer

¹⁰⁷ Earnings Before Interest, Taxes, Depreciation and Amortization

¹⁰⁸ EBIT

¹⁰⁹ Free Cash Flow

The business analysis focuses on relevant aspects that go beyond financial and economic evaluations: its strategic role is further discussed. From the other side, Development and testing are two stages that, due to the high degree of complexity of Ferrari's vehicles, cannot be treated separately: continuous tests and experimentation are mandatory. Finally, the launches are peculiarly prepared in order to be combined with special occasion or, differently, to coincide with memorable and traditional celebration. As it will be discussed, this stage, including the successive monitoring phase, may last even months due to the constant revision and support the company reserves to its models: activities on the market and further services have the strategic role to constantly contribute to the diffusion of the new model.

In order to better understand the criticalities of its process, the candidate had the opportunity to interview one of the Ferrari's Product Manager team who offered, in this sense, concrete business examples related to any aforementioned source:

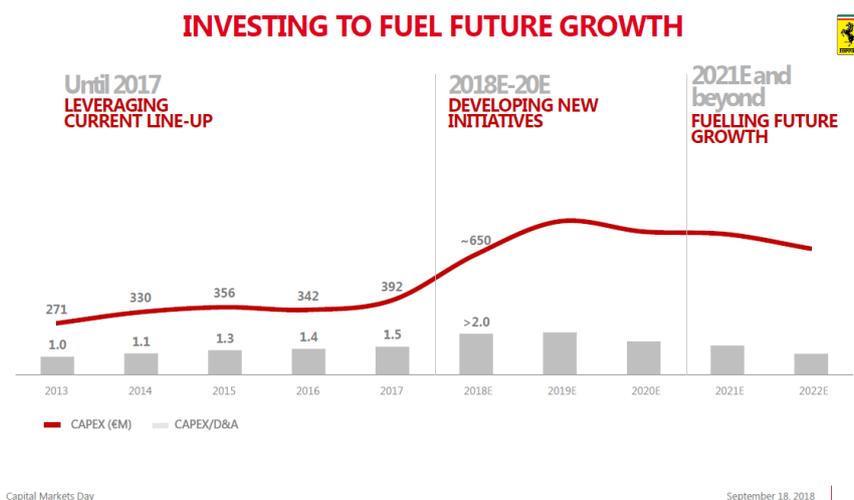
- Customers constantly ask for higher performances: usually, any new Ferrari's model shows more horsepower than the previous. The Ferrari F8 TRIBUTO, presented on March 2019 at the Geneva Motor Show, replaced the 488 GTB: in this sense, the new model, beyond other specific improvements, over-performs the previous with +50cv;
- Legislation and emission regulations yearly become more stringent: the company immediately reacted to these changes by introducing into the market new technologies such as both turbo engines and hybrid power train;
- Analysis of the reference competitive scenario: the company explores the external context and evaluates the upcoming technologies to successively deepen some potential advantages.

4.3.2 - The core dimensions exploited by the Prancing Horse

From Enzo Ferrari onwards, top managers had a critical role in order to suggest improvements and highlight main points to take into account during the development.

The formulation of a broad strategy defined by the company in the following 5-years doesn't mean that no individual paths are elaborated in order to launch a single model. For example, by looking at the estimation below (Exhibit 4.4) presented at the Capital Markets Day and focusing on the fuel future growth, the company catch the exigence to heavily and rapidly invest towards a completely new market: all the competitors were moving there, but experimentation and tests were needed in order to 'Ferrarize' the upcoming innovation. The results was the latest hybrid car of the company's history: the Ferrari SF90 STRADALE.

(Exhibit 4.4) – Projection on investment on the fuel (*Capital Markets Day*¹¹⁰, 2018)



The CAPEX¹¹¹ indicates the amount of cash flow *used by company to acquire, upgrade and maintain physical assets such as property, buildings, an industrial plant, technology, or equipment* (Kenton, 2019): thus, these projection are spread, again, over the five-years period taken into account by the company in its industrial business plan. Generally, an high CAPEX index reflects the internal solidity and the company’s willingness to invest more and more to grow its business. By looking at the same index influenced by the D&A¹¹², it is evident the innovative path pursued by the company: the ratio indicates the growth phase of the business and, clearly, the data is consistent with the CAPEX in order to show the growing evolution of the firm on the five years period examined.

The interviewed Ferrari’s Product Manager stressed a lot this point because it forms the most relevant connection with the second stage depicted by Booz *et al.*: the idea generation. The core of any project developed by the Prancing Horse is to provide an effective ‘reason why’, a supporting evidence of the promises and benefits that the new product will offer to the customers. It is not a mere description of the potential advantages given by the new model, but an objective argumentation of the added value inserted in the innovation. In this sense Ferrari S.p.A., in order to find the next successful models, looks for the most promising ‘reason why’ through the exploitation of four key dimensions, described as follows:

- 1) Architecture: first of all, the internal structure and the chassis of the product is deeply explored. The engineering department carefully investigates the technical features of the previous models in order to understand which aspects of the architecture deserve further examination or it might be improved. As shown in the picture below (Exhibit 4.5) presented

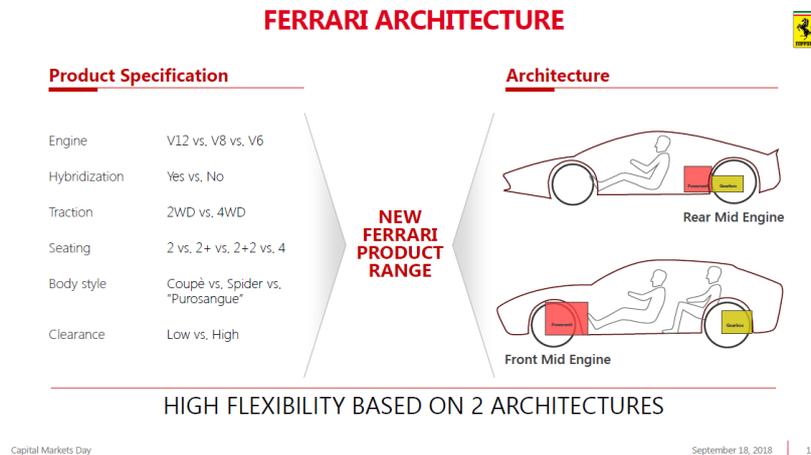
¹¹⁰ Ferrari corporate website

¹¹¹ CAPital EXpediture

¹¹² Depreciation and Amortization

during the Capital Markets Day by the Ferrari CTO Michael Hugo Leiters, the engineering department is used to elaborate own new solutions by starting from two well-defined structures that form the “Ferrari Architecture”.

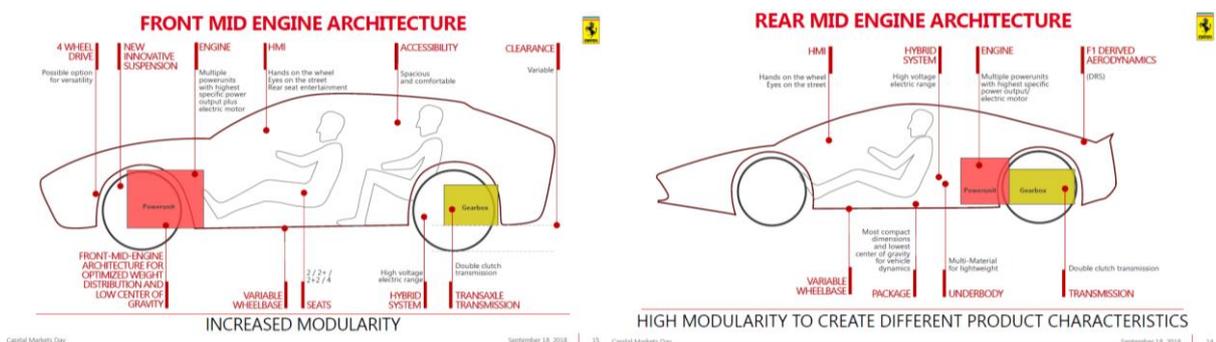
(Exhibit 4.5) – The “Ferrari Architecture” (*Capital Markets Day*¹¹³, 2018)



These structures are especially related with the position of the engine, in absolute one of the most important aspect to both customers and engineers. The results consist in two precise architectures: the front-mid engine and the rear-mid engine (Exhibit 4.6). On the left, the engine is positioned on the front to offer a more versatile solution by optimizing weight distribution and lowering the centre of gravity; on the right, the engine is placed on the rear to achieve superior performances by F1 derive aerodynamics.

As consequence, depending on the chosen arrangement, huge levels of modularity and flexibility are required in order to maintain the promising performances and the requirements compliant with the strict limitations.

(Exhibit 4.6) – The two Ferrari’s architectures (*Capital Markets Day*¹¹⁴, 2018)



¹¹³ Ferrari corporate website

¹¹⁴ Ferrari corporate website

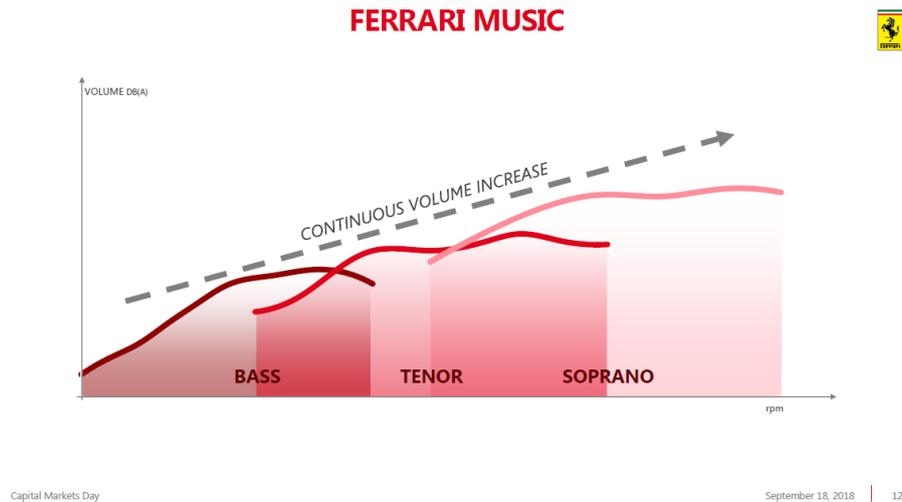
Other critical aspects related to the architecture dimension concern the number of cylinders: indeed, the company's portfolio has an higher sporty connotation is offered by the V8 respect of the V12. The traction and the seating deserve lot of attention: decisions on 2 or 4 Wheel Drive and number of seats may have a strong impact and it may not be undervalued. Customers are very sensitive to these conditions, as for the body style, generally offered in multiple version for any Ferrari model's family. By tradition, the Prancing Horse proposes both the coupé and the spider version of the same model, in order to increase the availability of customer choice. For example, in the last decade the company introduced even the concept of RHT (Retractable Hard Top) to offer another versatile and competitive opportunity.

In both cases, a very high degree of modularity is required: iterative evaluations are done during the development of the internal structure. The factory is organized in different departments that work on parallel and are synchronized: any single detail is managed in order to speed up the entire production. At the same time, extra-efforts may be activated to rapidly build new infrastructure or to provide additional resources or equipment in order to shorten the development time: reactivity and speed are always key factors in the automotive industry.

- 2) Power Train: the second critical dimension explored by the company is related to the core features of the models and includes all the innovative contents. The technology, through relevant updates of the main software into the car, hybrid parts as in the latest Ferrari SF90 STRADALE officially launched on May 2019 and, above all, the engine. In general, concrete inputs come from the previous model in order to pursue a route of continuous improvements, especially on what concerns this specific component. Beyond technical adjustments, experiments on sound are done in order to reply customers' requests for *continuous volume increase* (Exhibit 4.7), as discussed by the Ferrari's CFO¹¹⁵ Michael Hugo Leiters in occasion of the Capital Market Day.

¹¹⁵ Chief Technical Officer or Chief Technology Officer

(Exhibit 4.7) – The “Music” evolution of the Ferrari’s engine (*Capital Markets Day*¹¹⁶, 2018)



Isolated areas are constantly tested to increase the sound from bass voice to higher tenor and ultimate soprano: position, inclination, architecture and optimal weight balance are factors deeply examined in order to achieve the perfect compromise. The company critically stresses this point because it might be considered a real VRIO of the Prancing Horse, by referring to the model depicted by Jay. B. Barney and described in the previous chapter. The real ability in this dimension was not only to overcome competitors’ engines, but even to “Ferrarize” the final result by inserting critical components and features of the Prancing Horse.

- 3) Fun to Drive: this dimension might be explained as the way the car makes the customers feels when they drive it. Ferrari’s politics is not directed to sell as much as possible, to reach unlimited volumes or to create the most powerful car in the history: the company’s focus is mainly dedicated to the experience the future new driver will live by enjoying the upcoming Ferrari. Emotions and feelings are two critical factors to take always into account whatever the project the company is designing. Concepts like comfort on board, safety behind the wheel, full usability and unreachable performances pervade any new model in order to ensure to the customers all the critical aspects they might ask for. Clearly, being vehicles empowered by “*an extreme sporty soul*”¹¹⁷, it is not easy to balance all these factors and find the right compromise, especially on what it may concern the safety dimension: however, through the newest technologies like the recent ADAS¹¹⁸ (Advanced Driver Assistance Systems) the company is satisfying even this requisite. Specifically, in order to increase as much as possible the fun to drive, Ferrari explores: agility and nimbleness, steering, predictability and controllability, performances and speed. Through operations on

¹¹⁶ Ferrari corporate website

¹¹⁷ Product Manager of Ferrari S.p.A.

¹¹⁸ From 2022 the ADAS implementation will be mandatory throughout the Europe

weight distribution or balance and interventions on suspensions, wheels or tyre tuning, improvements on these dimensions are constantly achieved, implemented and experimented in the new models.

- 4) Performances: the last driving force of innovation is related to technical features of the model. Speed and acceleration are relevant factors, but these are not the only aspects explored: additional horsepower are not the key to conquer new customers and attract them. Any company is able to easily increase the power of own cars, and in the market already exists models faster than Ferrari's ones. Dynamics and aerodynamics are deepened in order to increase as much as possible the extreme nature of the model. The strict bond with Scuderia Ferrari allows the company to exploits several F1 derivations: for example, the newest S-Duct, implemented for the first time on the 488 PISTA, empowered the cars of supreme aerodynamics that was translated on superior performances. Finally, always benefiting from the F1 soul, the upload of newest software allowed the complete exploitation of the extreme sporty side. The SF90 STRADALE, as the name suggests¹¹⁹, has a very strict bond with the Formula 1 official car: in 2019 it represents the highest result in the whole history of the Prancing Horse in terms of performance.

Once identified the core dimensions, the company strategically position its products: in this way the company reduces as much as possible any potential overlap and, at the same time, it avoids the risks of 'cannibalization', mentioned in the previous chapter.

4.3.3 - The evolution of the process

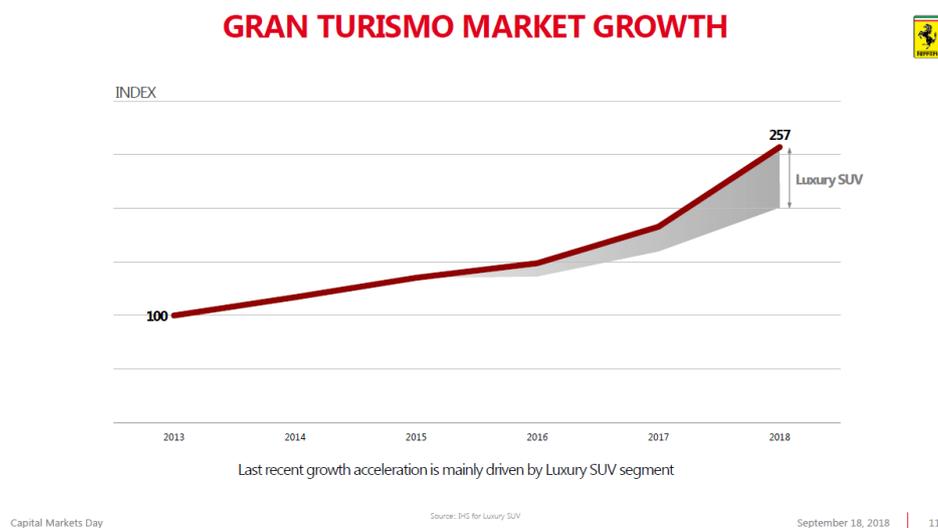
As clarified in the premise, Ferrari S.p.A. is driven by a Product Driven approach that is based on a bottom-up structure: its quality and elegance is recognized and appreciated everywhere, thus the company yearly projects and implements the best possible models. The Prancing Horse knows what the market will ask and how its customers may be satisfied: it explains why any new product introduced is always well-required. In this sense, Ferrari drives the offer: for example, decisions related to limited quantities have the positive effect to drastically increase its bargaining power and uniqueness.

In order to develop a powerful new product, the company activates two main processes that work on parallel through a strict and constant collaboration among different departments.

¹¹⁹ For the season 2019/20, the official F1 car is the SF90, to celebrate the 90 years of Scuderia Ferrari from its foundation

- From one side, Product Marketing and Marketing Intelligence jointly collaborate to understand the reference market. First, as anticipated, analysts make forecasts and projections on the next 5 years in order to understand the evolution of the segments of interest. For example, by looking at the future upcoming challenges, as exposed by the Ferrari’s CMO and Senior Vice President Enrico Galliera at the Capital Markets Day, the growth of the GT market in the luxury SUV segment (Exhibit 4.8) will conduct the company towards the realization¹²⁰ of the ‘Purosangue SUV’.

(Exhibit 4.8) – The GT Market Growth (*Capital Market Day*¹²¹, 2018)



Second, together with Sales, Marketing estimates commercial parameters that should go towards the same direction showed by the earlier stages. At the end, after the first units are sold to the customers, market researches execute consistent analyses based on the customer voice that aim to understand how the key contents of the new model are perceived. This analyses it’s aimed to support both product object of the survey and the new range evolution.

- From the other side, the department of Technical Direction gives a critical contribution to understand how the new product physically should be and if it is possible to make an innovation rather than another. There is a specific area of Technical Direction that study all the critical parts of R&D compared to the relative budget. Although pervaded by a pure technical nature, this specific department deserves critical attentions to the expenses required by any single component. In this sense, there exists a physical cost engineering

¹²⁰ The same new was confirmed even by the Ferrari’s CEO Camilleri during the press conference of the Geneva Motor Show in March 2019

¹²¹ Ferrari corporate website

function that have to justify all the efforts the company should sustain in the realization of the new model.

The Ferrari's NPD process mainly acts at the headquarter in Maranello, specifically at the building of Product Development Centre. In this place there are the two key departments of the process: the Product Marketing and the Technical Direction. As described above, the former investigates the reference market and lead all the economic direction pursued by the company, the latter examines and advances the technology content. On parallel, through the simultaneous interactions with the Design Centre, the evolution of the project moves from sketches and proposals to concrete guidelines that takes into considerations both new or critical trends and the strict bond with the company's heritage. Of course, due to the significant result the company aims to achieve, it is not easy to find the right compromise.

In this way, the company determines how a project is supposed to move on quantitative and macro analysis concerning several aspects:

- Market: does the innovation already exist in the market? How the competitors may react to the introduction? How the new model is coherent with the existing portfolio?
- Architecture: is this model a front-mid or a rear-mid engine? is the company planning to insert a coupé or a spider version?
- Performance: what are the main features to highlight? Does the company prefer increase model's efficiency through dynamics and aerodynamics? For example, how a better 0-100 Km/h acceleration might be achieve?
- Sales: how many volumes the new model wants to achieve? There will be (or not) limited units? Is the new model a special version, an extension of the existing portfolio or a replacement?

Thanks to the strict interaction among these departments and the high degree of detail provided by any actor, the emerging proposals start from a solid base in terms of feasibility, innovation and added value. Moreover, those idea contested in the previous chapters by marketing fathers like Al Ries or Jack Trout, directed to empower the top managers' careers rather than satisfy relevant customers' needs are immediately discarded. Indeed, sometimes the company might plan something incredible in terms of performances and design, however it might be not coherent with the market demand and customers' requests.

Once these three actors find the perfect compromise, able to powerful resume both economical, legal, technological, technical and stylistic aspects, the main responsible of these departments meet

the SMT¹²² to show own result and receive a final evaluation. This is the moment when, beyond the aforementioned cases above, a real screening happens. Both the CEO and the top management have the role to examine the validity of any projects proposed. They decide about the effective realization of the project through the examination of the full costs to sustain, the volumes to eventually produce, the price to be paid in order to return from the investment, the benefits gained by both companies and customers and, above all, the future impacts on the short and long run: once they agree, the physical realization and the development process can be activated. Sometimes, projects might be suspended still waiting the final decision of the top management: for example, the implementation of a new technology may require the edification of a new building. In this case all the evaluations will need more time and detail. Especially, being listed on the stock exchange, the examination and evaluation from the board of directors may require further time and analyses.

In general, this phase of emerging ideas, examination of the market, progress of the proposal and search for the right compromise moves at different speeds: especially the point of connection between the Technical Direction and the Design Centre is not always easy to achieve. The critical role played by the team driven by Flavio Manzoni is to ensure the respect with the tradition and historical Ferrari's style. In this sense, Ferrari, being universally recognized as symbol of elegance, cannot radically transform its nature to embrace a new tendency.

Once the top management gives approval of the project proposed, the time comes for the definition of the main players and responsible of the new product. Into the same Product Development Centre there are lots of areas of specialization to any single dimension concerning the future model, like the electrical and electronic systems, the "comfort on board" unit or the engine department. Depending on the project, a specific member of any interested area is selected in order to support the further development. These resources are precisely trained to perfectly assist the phases of assembly and architecture that are executed in three different locations:

- Design: at the beginning, the product development team elaborates the technical drawing drafted by the architects. The engineers prepare the CAD (Computer-Aided Drafting) where any minimum aspect is peculiarly examined: the chassis, the steering wheel, the seat, etc. Once the configuration of the individual components are approved,, their integration is studied and successively experimented;
- Pilot: once the technical drawings and simulations are completed, the project starts to be advanced manually by respecting the technical requirements highlighted in the previous stage. Specialist technicians understand the physical modularity and the combination among

¹²² Senior Management Team

any component: the final result will conduct to the primordial and static versions of the upcoming model;

- Productive line: once the configuration is ready and all the technical part is perfectly absorbed, if no already existent or compliant to what the new innovation requires, the company decides to open a productive line in order to speed up the process. Usually the installation of the plant require months: however, at the end the efficiency will be hugely increased and there will be produced more and more units.

In general, market testing consists on repetitive trials to experiment the innovation integrated on the new car: as the technology evolves, the model becomes smarter and its realization is more difficult. Numerous updating are constantly assimilated to the internal devises to pursue the route of continuous improvements: for example, the new Ferrari F8 TRIBUTO heavily invested on technical update on both the new version 6.1 of the Side Slip Angle Control and the extension of the control system Ferrari Dynamic Enhancer Plus (FDE+), to especially increase the comfort on board. Generally, tests are mostly focused on performances and validation in order to embrace both customers' requests for superior results and restrictive regulations. Aerodynamics and dynamics deserve particular tests due to the results that might conduct to: the latest S-duct experimented for the first time on the 488 PISTA is an important F1 derivation: in the recent Ferrari F8 TRIBUTO, thanks to its implementation, it gained +10% aerodynamic efficiency over the 488 GTB that replaced. However, due to the implementation of new required technologies like the ADAS¹²³, is becoming more and more challenging and difficult to reduce the dry weight to derive consequently aerodynamics and maximum power.

After defining the perimeter to act, the project backs to the marketers who focus on the formulation of the launch plan, by individuating any single step to follow in the next months to finally arrive at the real introduction. First, an operational committee is defined in order to assign important responsibilities to any single player involved in the project: employees from different functional areas two times per month interact in meetings that become more and more detailed as the final launch is approaching. Second, deadlines are fixed in order to define the main pillars of the launch: all project managers know what are the volumes estimated, who are the segments to serve, when the production will start and, above all, which is the concept of the new model. This is the most important part because it includes all the benefits including by the upcoming innovation that are directed to the target audience. Briefly, the company must be able to powerful communicate the real advantages and the unique value of the new model is planning to launch. The concept might be totally disruptive, as happened in the case of the Ferrari California launched in 2008, the first model

¹²³ Advanced Driver Assistance Systems

of the company's portfolio to adopt a coupé-cabrio bodywork with metal top. Whatever the case, the concept remains the most important and delicate part of the project and it is the main responsible of the future results: by referring to the same model, through this main innovation the California was able to generate 67% of new customers.

On parallel, other departments like Communication and Digital become more and more relevant to the definition of the project and the formulation of the final strategy: social campaigns and press releases are cleverly coordinated in order to create the perfect basis to the upcoming introduction. Moreover, the plan evaluates the best occasion to finally launch the model: as it will be discussed later¹²⁴, traditional events like the Geneva Motor Show might be the fixed deadlines inserted in the primordial launch plan to coordinate all the strategies backwards.

About what concerns market simulations and testing related to the pure commercial dimension, fewer efforts and experiments are needed if compared to other industries or segments. Pre-fixed scheme and huge brand positioning allow the Prancing Horse to set high prices well justified by its prestige, heritage, tradition and incredible social status addressed to the future new driver. At the same time, even the distribution is generally well-defined thanks to the worldwide efficient network the company may exploits, carefully coordinated to be ready on successive activities organized to diffuse awareness and stimulate the desires. Differently from these aspects, critical attention deserves, instead, the organization of relevant occasions like events or celebration to effectively launch the new innovation. Plans and forecast should jointly guarantee concrete results in order to be ready for the occurrence. Clearly, several evaluations are sustained in order to verify the relevance of the event, the estimated attendance and the possibility of achieving a consistent part of the pre-fixed target audience. Usually, as luxury companies waits for special occasion to introduce own latest innovations, at the same time Ferrari selects precise event: the already mentioned "*Geneva Motor Show*"¹²⁵ is one of the most preferred in this sense. Traditionally, the Switzerland is not the only city where famous exhibitions take place: in Europe, during the odd years, another great occasion takes place in Frankfurt, while in the even years the official theatre becomes Paris. However, this type of events are spread everywhere: the Shanghai or the New York Motor Show are other famous celebrations that allow luxury car companies to exhibit own newest arrivals.

In general, strong and sophisticated interactions between the headquarter and its dealers allow the company to constantly have own models in any part of the world: local launches, showroom, roadshow, racing and other activities are well-planned to both increase Ferrari's awareness and customers' involvement.

¹²⁴ Paragraph 4.4

¹²⁵ From the 1905 takes place in March

Marketing contribution is immediately provided to both sustain pre and after introduction phases to empower the future diffusion of the innovation. An official press release anticipates the upcoming launch, mentioned on the following days by several articles of the most important national and international newspapers that describe all the technical features of the new model. At the same time, official photos that focus on the architecture, internal and external perspectives of the new model are published in concurrently with the launch. Simultaneously, videos of different genres are provided to highlight the main new features of the upcoming model: technical performances, emotional impacts, aerodynamics and dynamics explanations and official presentation.

On average, the entire project, from the sketches to the physical realization, lasts 4 years.

4.3.4 – Financial and economic considerations of the process

The business analysis is based on the kind of project the company is planning to develop. No standard plans exist: whatever the case, the company especially evaluates the target audience, the growth of the reference market and marketing aspects, always maintaining a strict bond with the Ferrari's DNA.

When the company plans to introduce a new model, a productive climb should be guaranteed in order to effectively return from the investment: through the order collection, marketers must be sure of the convenience of the deal. Normally, due to its precious tradition and uniqueness, models are able to create long waiting list: in this case the management should be able to carefully handle situations post-launch to continuously stimulate the customers who are forced to wait even years for the desired model. Moreover, the same managers may revise the entire production process to faster the deliveries and embrace drivers requests. In this sense, a particular case faced during the development stage concerns the business of the Tailor Made, further discussed: once customers decide to personalize own new cars, waiting list gets longer and longer due to the time required by the configuration and the complicated job that is expected. In general, carbon fibres are some of the most requested materials, but its availability is very poor. Moreover, the personalization requires a strict cooperation between the Ferrari Design Centre and the client that is asking for customize own future new car. Managers must consider even these aspects because some relevant waits might be caused by the lack of specific materials or unexpected externalities. Whatever the case, usually the company strategically prefers to anticipate the demand from suppliers in order to have the instant possibility to provide a complete and rapid support in any condition.

Generally, critical indicators for financial estimations and business analyses focus mainly on:

- Volumes are discussed, in the first instance, by the Product Marketing that provide the estimation of the quantity to produce. Later, once the model is launched, volumes are revised even by the Retail Marketing that monitors the performances achieved by the upcoming innovation compared to the previous model and other analyses. Several stages are examined: first of all, the lifecycle estimations are the starting point in order to understand the period to which spread units along the years: second, other considerations that may influence the volume concern the idea of exclusivity the company wants to address to its new innovations. Historically, the Prancing Horse introduced uncommon models which formed the ultimate side of its portfolio beyond GT and sports cars: the special versions. In addition to the enviable aesthetics or the supreme performances, these particular models are produced through unlimited editions that consist on precise amounts of units to sell. It reflects, again, the idea of uniqueness that Ferrari tries to transmit to its public audience: what is important to highlight is the perception created by the company, superior even at the eventuality of gaining higher profits due to more units to sell. Evaluation about quantities of volumes to produce takes into consideration even the reference Countries to which the model specifically address: any area has its own legislations and requirements concerning emission, validation and, above all, taxation. Strategically, the company may decide to sell more units in some specific zones rather than others. Last, any model is inserted into a specific segment with competitors' proposal and volumes should consider even the decisions related to the reference opponent models. At the same time, due to the perfect quality required by the company, specific parts or components may not always be available in the market. As consequence, some quantities might be reduced even because of external inefficiency or to don't slow down the entire production processes;
- Costs: the department of Technical Direction is the main responsible of these estimations. The count includes all the activities planned during the entire lifecycle. Ferrari's cars are not only simple units to be sold: in any part of the world these models allow to organize events where new customers are invited to appreciate its uniqueness. The company must have clear all the activities the new car should sustain and which advantages or disadvantages these might bring. Markets constantly ask for the models in order to organize regional or local views: in this sense, the estimations consider even costs related to infrastructures, shipments, legal documents¹²⁶, insurances, eventual damages and repairs¹²⁷. Moreover, the expenses to sustain the future introduction and all the resources involved to the organization of the process must be immediately identified. When the company plans an event with the

¹²⁶ E.g.: for cars that move out of the European Union is required the Carnet A.T.A.

¹²⁷ Beyond unforecastable causes like accidents or fires

contribution of external specialists, it further investigates in order to understand the degree of support needed during any specific phase of the launch;

- Ferrari's commercialization decisions, beyond the organization of the events to promote the model introduced, concern even other strategic aspects. First of all, the saleability of the upcoming innovation is one of the most critical evaluation. Historically, the company is not new to situations in which the latest model is already sold out before the official launch. In an interview given to *'Fortune'* at the Paris Motor Show, Enrico Galliera, Senior Vice President and CMO¹²⁸ of Ferrari S.p.A., by referring to the exclusive LaFerrari Aperta¹²⁹ produced in only 209 units already sold before the official presentation, affirmed *"For us, a limited edition is a way to award our most loyal customers, indeed 200 among them have bought the car without even seeing it: they simply trusted on Ferrari"*. This approach follows the historical philosophy diffused by the founding father Enzo Ferrari: to build a Ferrari in less than what the market demands. It explains why, annually, the production is under 8.000 units, even if recently is reaching, for some models, the threshold of 10.000. Second, by looking at a more analytical perspective, the commercialization stage includes punctually checks and monitoring to verify the alignment of any new product with own objectives: usually, the marketing intelligence contributes to understand the performances reached by the innovation compared to the competition and the segment to which it refers to. Clearly, the models are examined even internally in order to measure the effective evolution of the proposal and highlight eventual factors of success. Targets are distributed according to any area to maintain a rigid control over the markets and understand if the level of production is able to achieve the financial objectives fixed during the previous stages. Moreover, the deep focus dedicated to any region or market allows the company to eventually react some negative results by organizing strategic activities or, differently, changing the areas where to direct own efforts. Third, evaluations are related with budget constraints that take into account even marketing activities that constantly support the car before and after the introduction. Materials and events are planned to boost up the launch and successfully sustain its rapid diffusion.

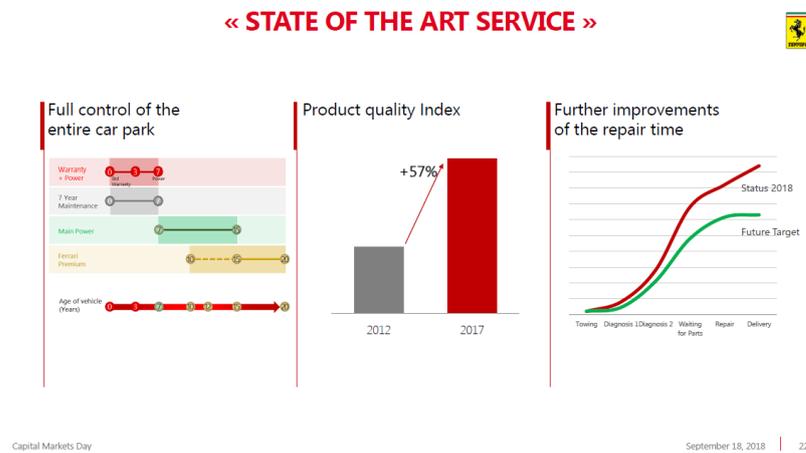
Fourth, by referring to the same budget, the company directs a consistent part to efficiently support the post-launch phase: after-sales services continuously improve and embrace new warranties to protect the investment made by the customers; quality index yearly increases due to the peculiar attention reserved by the company to any smallest details in order to justify the high price and, above all, the compliance with the historical standards; repairs and

¹²⁸ Chief Marketing Officer

¹²⁹ 2016, € 1.900.000

waiting lists are carefully monitored in order to reach superior targets capable to generate higher customer satisfaction and shorten development time from the order to the final delivery (Exhibit 4.9).

(Exhibit 4.9) – The State of the Art Service (*Capital Markets Day*¹³⁰, 2018)



Furthermore, Ferrari’s marketing plays a critical role to the organization of the activities directed to acquire new customers and coddle old ones. As anticipated, showrooms and roadshows are other important occasions organized by the company through its dealers located worldwide. The former is a pure static exposition of the company’s product range, the latter is a more dynamic activity organized in a well-specified areas to allow the customers to concretely try the models: both events pursue the purpose to attract new customers and involve the already attached. On general, some activities are full dedicated to prospect and potential interesting customers, like the famous “Esperienza Ferrari” that is an unique test drive program to conquer new drivers; others, differently, are completely dedicated to the owners: the “Passione Ferrari” is an official program that allow the customers to drive own models in the most famous international circuits, divided between road and track, or even to participate to special occasions like the “Passione Ferrari Rally”. Last but not least, great events are dedicated to the eternal Classic world of Ferrari with its timeless models that are punctually object of amazing occasions, usually divided into three categories: auctions, competition of elegance and classic racing activities.

4.4 - A real case: the Ferrari’s 488 Family

As anticipated in the brief introduction focusing on Ferrari S.p.A., the company’s product range is composed by both Sports and Grand Tourism vehicles, beyond special versions that complete the full portfolio. Clearly, due to the strict bond with Scuderia Ferrari and its well-known racing soul,

¹³⁰ Ferrari corporate website

the most appreciated car typology from the customers is characterized by a pure sporty DNA. Thus, in order to satisfy drivers' expectations and, at the same time, to maintain the powerful connection with its famous counter-side, the company annually launches full sporty models.

In the actual range¹³¹, the most relevant part is played by the 488 Family, specifically: the 488 Spider, the 488 Pista, the 488 Pista Spider and the F8 TRIBUTO. These models resume the concept of "family" debated by Ferrari: on March 2015 the company launched the original model called 488 GTB, a coupé V8 version. At the end of the same year, the homonym Spider was introduced: beyond technical and internal improvement, the car offered the possibility to transform own design; successively, on 2018, Ferrari completed the family with two special versions of the original model: the 488 Pista and the 488 Pista Spider. Finally, on March 2019, the company presented at the Geneva Motor Show the replacement of the 488 GTB: the Ferrari F8 TRIBUTO. In this way the customers may enjoy all the variants and the advantages of models originated by the same concept existing for 40 years: the newest F8 TRIBUTO replaced the 488 GTB who replaced the 458 Italia; at the same time, the respective spiders' versions followed the analogous path, with the 488 Spider that replaced the 458 Spider. In this sense, the company had the ability to reformulate and improve an already powerful and appreciated design that didn't required upheavals.

The NPD process implemented by Ferrari in order to give birth to these extraordinary family was part of a defined 5-years strategy that begun with the exploration of the market and the exploitation of some of the historical critical dimensions mentioned above. By these projections, the Product Marketing and the Market Analysis catch the future orientation towards the turbo technology. On parallel, the Technical Direction evaluated the possibility to exploit this direction and, above all, to "Ferrarize" it. As explained even by the interviewed Ferrari's Product Manager, at the beginning of the last decade McLaren gained competitive advantages through its turbo engine: the Britain company achieved incomparable performances thanks to this new power. Ferrari, after a peculiar examination of the market scenario, catch the exigence of moving beyond on previous naturally aspirated engine. Rapidly, the company improved own previous turbo-engine and its first application was on the California T. The implementation was a great breakthrough, but some imperfections persisted: the engine was reactive as the traditional aspirated, however the sound was dramatically penalized. Ferrari's customers are really sensitive about this feature: according to the aforementioned CTO Michael Hugo Leiters, this is probably the most important aspect they consider when they evaluate a new car. For this reason, this aspect was carefully examined by facing its entire evolution and projection along the years: finally, the solution arrived from the engineering department that worked and refined the exhaust pipe. In this way, the company

¹³¹ Paragraph 4.3, Exhibit 4.4

improved own previous technology and generated what is considered today the *'Engine of the Years'*¹³², a perfect combination between the sound desired by the customers and its most powerful key feature: the zeroed turbo-lag. The specificities were discussed by the same Ferrari's CTO during the Capital Markets Day (Exhibit 4.10)

(Exhibit 4.10) – The Ferrari's V8 Engine (*Capital Markets Day*¹³³, 2018)

INTERNAL COMBUSTION ENGINE AS PER FERRARI'S DNA 




"Without doubt we are looking at an engineering masterclass from Ferrari. No turbo-lag, beautiful delivery, raw emotion, a furious growl and so much power. The Ferrari V8 is a work of art"



"The engine technical specifications alone make it hugely impressive, but the experience it gives the driver makes it truly phenomenal: its sound and power are both amazing"

"THE SOUL OF A CAR IS ITS ENGINE" ENZO FERRARI

Capital Markets Day September 18, 2018 | 8

The first official implementation of this newest engine arrived in the famous 488 GTB, recently replaced by the successor Ferrari F8 TRIBUTO, as the name suggests a real tribute for this incredible result achieved by combining a critical customer need with a potential competitive disadvantage.

Other key Ferrari's dimensions as performance and fun to drive were exploited to achieve further improvements: technical adjustments were related to both aerodynamics and dynamics, beyond superior performances smartly achieved through the reduction and de re-distribution of the weight. Indeed, considering the latest model of the family, the Ferrari F8 TRIBUTO, through the F1-derivation of the S-Duct, gained +10% aerodynamics efficiency than the predecessor model (488 GTB). By looking at the same comparison, same results in terms of efficiency and higher performances are offered by the distribution of the dry weight: the latest model, through the -40 Kg compared to the previous, gained 50cv more.

The launches of these models, although belonging to the same family, exploited different techniques that allow the company to different position them. Starting from the most recent case, the launch of the Ferrari F8 TRIBUTO arrived, as in other cases, at Geneva Motor Show, the most frequent and exclusive occasion in which the company is used to official reveal its latest models.

¹³² Engine of the Year for four times in a row: 2016, 2017, 2018, 2019.

¹³³ Ferrari corporate website

The picture below (Exhibit 4.11¹³⁴) shows the official presentation during the event organized from the 7th to the 17th 2019.

(Exhibit 4.11) – Official Presentation of the Ferrari F8 TRIBUTO (*Geneva Motor Show, March 2019*)



A totally different approach was used for the launch of the 488 PISTA (Exhibit 4.12). Even if the model was presented, as the F8 TRIBUTO already discussed, at the Geneva Motor Show¹³⁵, the company planned a pre-launch phase by exploiting its huge dealer network. Two weeks before the official presentation in Switzerland, the company gave the possibility to its most relevant customers to “virtually” see for the first time the car directly in their reference dealerships. All the dealers were peculiarly trained to offer the maximum support and coordination: exclusive materials in order to raise and make the customer’s experience as much realistic as possible. At the end, more than 3.000 clients were involved and, according to the further surveys and investigations, the experience was really appreciated by both dealers and spectators.

¹³⁴ <https://www.quotidiano.net/motori/ferrari-f8-prezzo-scheda-1.4475609>

¹³⁵ March 2018

(Exhibit 4.12) – Official Photo Ferrari 488 PISTA¹³⁶ (*Digital Launch, February 2018; Geneva Motor Show, March 2018*)



Finally, the 488 family enjoyed the exploitation of one of the most powerful business of Ferrari, further discussed: the Tailor Made. At the famous 24 hours of Le Mans (2018), in the interval between the qualification and the racing, the Prancing Horse presented the famous Ferrari 488 PISTA PILOTI. Derived from the rich personalization program, the model was an acknowledgment to those customers drivers who run every day with Ferrari's cars. The distinctive feature was given by the tricolour livery along the car and in both sides to exalt the aerodynamics, with the bay tree at the end to celebrate the title won the previous year by Alessandro Pier Guidi and James Calado with the glorious vehicle number 51 of AF¹³⁷ Racing. In Maranello, the Tailor Made centre proposed its 488 Ferrari PISTA PILOTI in four exclusive dyes inspired to the racing world: Red Corsa, Blue Tour de France (Exhibit 4.13¹³⁸), Black Daytona and Silver Nürburing.

(Exhibit 4.13) – The Ferrari 488 Pista Piloti (*Blu Tour de France, 2018*)



¹³⁶ Official Photo belonging to Ferrari S.p.A.

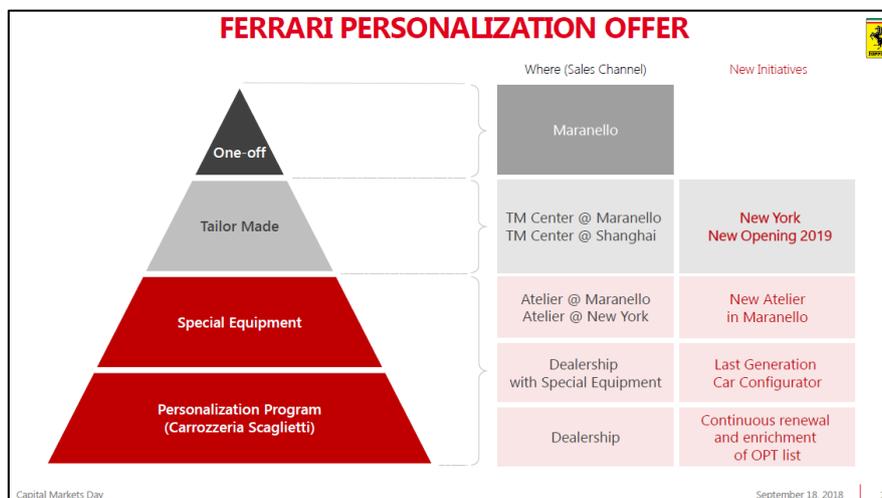
¹³⁷ Amato Ferrari, ex pilot (2002)

¹³⁸ https://www.google.it/search?q=488+pista+piloti&source=lnms&tbn=isch&sa=X&ved=0ahUKEwj3icGas6PiAhWBCewKHYYV7DIwQ_AUIDigB#imgrc=7z4jxGWOjs8muM:

4.5 - The winning elements of Ferrari S.p.A.

During its glorious history, the company planned and developed many models in order to attract new buyers instead of focusing on existing ones, even if they were continuously stimulated with newer innovations capable to inspire them. Among these improvements, on the wave of the massive and peculiar customization to which the entire luxury world converted, Ferrari decided to open dedicated centres to improve an already perfect proposal. By exploring the entire industry, almost all the luxury automotive companies exploits the personalization dimension: Jaguar, through its SVO (Special Vehicle Operations) department, designed the famous ‘007 film’ cars; McLaren, with its “Bespoke divisions” formed by specialist craftsmen, realized premium dyes being possible even edits to smallest details; at Goodwood, Rolls-Royce transformed the dashboard of its new Phantom as an art gallery with its most relevant masterpieces; Lamborghini and Maserati have own Atelier seats to increase customers involvement. Thus, from 2010 onwards, company’s customers started to be stimulated by kits of personalization capable to completely revolution the cars. During the latest Capital Markets Day, due to its relevance and potential, a consistent moment was fully dedicated to this main topic (Exhibit 4.14).

(Exhibit 4.14) – The Ferrari Personalization Offer (*Capital Markets Day*¹³⁹, 2018)



At the bottom of the pyramid, the Ferrari’s personalization offer begins from the basic OPT: drivers may choose among several different aesthetic components to adorn and decorate own car in order to personify it in own image. From the simply colours and materials basic selection, the company activated several customization program rapidly diffused and very appreciated.

The second stage is played by the so-called ‘*Special Equipment*’: when customers asks for more complex or particular OPT, then the dealers may suggest them to move directly to Maranello to

¹³⁹ Ferrari corporate website

personalize their future car. In the same headquarter there is a physical seat called Atelier where drivers may book a slot to meet a team of experts and define a common 'design'. The same place offers a widely availability of colours, materials and optional to add to the standard vehicle. This is the first concrete point of interaction between the Prancing Horse and its customers: moving directly to Maranello, the drivers increase own involvement enjoying an unrepeatabe experience.

The third stage of the Ferrari's pyramid incorporates the essence of this Purple Cow: the Tailor Made. It represents the highest level of the personalization where original chassis and engines are not touched neither modified. Customers have endless availability of uncountable materials, colours, features and devices. Opportunities are also increased by the unicity of customizing the vehicle even with own personal contribution or home-made material. Reservations are mandatory and, as the opportunities evolve, at the same time the personal experience lived by the customers reaches higher and higher degrees of happiness and uniqueness. A team of professional designers continuously support the future driver when the meeting takes place to perfectly project the new version of the pre-established model. Customers are stimulated by the fact of elaborating a product designed as they dream: almost any intervention can be executed to allow the receivers to drive a full-carbon or controversial and aggressive luxury cars. Furthermore, in order to select the most suitable according to customers' self-expression, the company inspires its customers with three historical collections: 1) the "Scuderia" aims to propose more sporty design in order to fill the customers' racing soul; 2) the "Classic" makes a tribute of the great and long tradition of the Prancing Horse and it is inspired by the glorious old myths; 3) the "Inedita" realizes something completely unique that allows the customer to be totally different from the rest of the world. Recently, the concept evolved in the emerging '*Digital Experience*', a first powerful interaction between the customers and the Tailor Made experience directly from into the dealerships: in this sense, both digitalization and *Industrial Internet of Things* haven't blocked the Prancing Horse to maintain traditional and conservative interactions. About this main relevant topic of Tailor Made, yearly Ferrari joins numerous events promoted by its dealers with the aim to support this incredible business: spectacular initiatives are continuously adopted, from long trips to press conferences and even private presentation in rented island, to impress more and more customers and make unique its interaction and emotional experiences. A recent example might be the great event organized in occasion of the 70th anniversary of the company, when Ferrari exploited its powerful business of the Tailor Made by presenting 70 exclusive liveries.

Finally, at the highest level of the "*Ferrari's pyramid of personalization*", there is the one-off: this is the '*out of the rule*' opportunity offered by the Prancing Horse which allow to modify even the chassis and the engine in order to satisfy customers' dreams. The experience is more unique than

rare: the committee plans together with the most important Ferrari's designers, usually those who effectively realize company's official models. Meetings are more frequent due to the length of the project, on average along 4-5 years. The result is something incomparable with a commercial value of millions: usually, press conferences and presentations follow the final delivery of these unique units. The most recent one-off was realized after four years: the newest "Ferrari P80/C" (Exhibit 4.15¹⁴⁰) was commissioned by an Hong Kong customer. It is inspired by both the 488 GT3 chassis and the 488 GTB and re-calling the legendary Dino 206S of the 1966: its cost was around €5 million and its design was elaborated by the Design Centre Ferrari S.p.A. under the direction of the famous head Flavio Manzoni.

(Exhibit 4.15) – The one-off Ferrari P80/C (*March, 2019*)



¹⁴⁰https://www.google.com/search?q=ferrari+80/c&client=firefoxbd&channel=crow&source=lnms&tbm=isch&sa=X&ved=0ahUKEwjGIy88cPiAhXJ2KQKHfVrDE4Q_AUIDigB&biw=1252&bih=579#imgrc=sDvKMvm3a0rp9M:

Conclusions

The premise of these thesis, as examined in the literature review, has advanced the following research questions:

- Does exist universal guidelines to develop and launch a powerful new product?
- How the BAH model may be considered suitable even in the luxury industry?
- Why the BAH model may be adopted also in the engineering industry by revealing more effective than specific engineering models?

Along the chapters, these questions were faced separately to understand the reference context and the peculiarity of any industry. The mass market showed completely different features from the luxury world and the specific automotive segment, while the BAH model allowed to evidence some common traits. However, in order to formulate definitive conclusions, it is important to underline the interdependence of these industries and the respective application of the NPD model.

The first part of this work focused on the evolution of the NPD models along the history and it explained why the process depicted by Booz, Allen and Hamilton was the most addicted in order to find some ‘universal’ guidelines. Again, the same model was further discussed both in the mass and luxury industries: although the process might identify common traits, differences arise due to the diverse nature of the industry. Unlike the mass-market, the luxury industry requires more stringent conditions due to the enormous financial effort: deeper degree of analysis, more complicated techniques, higher external support of agencies or specialists, unlimited testing and simulations.

Beyond the peculiar attention dedicated to any stage, the most critical evidence is revealed at the very beginning of the process: in the luxury world, original ideas are not always generated by unmet customer needs as in the mass market, rather they are piloted towards company’s tradition and distinctive features already recognized and appreciated worldwide. Luxury firms aim to hit customer’s attention and perception. What they offer is something unique but almost useless: probably the market already offers the same product at more convenient conditions, however customers don’t care. Usually, there are two explanations that justify the diverse reality perceived by the customers who daily faces both mass and luxury world:

- Brand: the customers rely on luxury company’s logo or name because they immediately understand quality and promises behind the proposal. Moreover, if no emergencies or time pressures are incumbent, they don’t even take into considerations competitors’ innovations;

- Positioning: luxury companies aim to collocate the new product not only in the market but, especially, into the consumers' minds. Through marketing mix variables or the exploitation of own brand, firms are capable to highlight their new products among the other proposals.

Both concepts are further discussed as follows.

Marco De Veglia, in his book *'Brand Positioning'*, starts from the historical definition of branding: originally, it is the classic 'fire stamp' made on the cows' back in order to make them different. Then, it extend the concept to the business world: branding is the activity that allows a distinction between two products, giving at the branded one more relevancy and notoriety than the other.

Through the 'fire stamp', branded products become completely different from the mass and important consequences are visible in relevant business dimensions:

- Customers: branded product lead to easier recognition. Consumers are very confused when they have to buy or make evaluations among several proposals: the brand 'illuminates the dark' and offers them a clear solution with a precise name or logo. In many cases, it doesn't indicate the product with the right features, but the one able to make different the customer from the multitude and to insert him/her into particular social groups or élites;
- Competitors: the brand makes the product completely different from the competition. It has the power to instantly recalls back the abstract image of the company behind together with all the promises and advantages it proposes. In many cases, a powerful brand is the highest entry barriers competitors have to face: no innovations or strategy may guarantee success against powerful and recognized companies. Repercussions are visible even on the entire NPD process because successful luxury companies, aware of its strong brand, are more relaxed against time pressures;
- Business: the brand let the company to achieve many advantages from a marketing perspective. It justifies higher prices, it facilitate advertising and distribution, it directly offer recognition and it increase reputation. Moreover, the brand alone is capable to give a strong 'reason why' to the customers.

Product positioning is the second key concept to address customers' preferences towards company's innovation instead of competitors' proposals: it indicates where the company's innovation fits in the marketplace and, especially, into the customers' mind. By definition, *'product positioning is an element of a marketing plan and it is the process marketers use to determine how to best communicate their product's attributes to their target customers based on customer needs,*

*competitive pressures, available communication channels and carefully crafted key messages*¹⁴¹. The goal is to make different own product from the competition and to create into the consumers' minds an instant and strong connection between the new product and the company behind, in order to facilitate its diffusion and conquer customers' loyalty. Product positioning requires a deep comprehension of the target audience, thus NPD stages of analysis and identification are decisive. Usually, the main criteria used to effectively position a new product are:

- Positioning by attributes: from the brand to the quality or the price, the best features are highlighted to generate immediate positive reactions;
- Positioning by benefits: it focuses on the strengths of the new products in terms of tangible aspects or concrete advantages;
- Positioning by category: grouping based on certain product classes or departments;
- Positioning by users: specific segmentation by respecting demographic, geographical or psychological distinctions;
- Positioning by Country of Origin (COO): orientation according to customs, religion, culture and values of the reference market;
- Ad-hoc positioning: more addicted to luxury companies, it combines the introduction of a new product with the preparation of a particular event or occasion capable to light up and effectively communicate the emerging innovation.

Brand exploitation and product positioning are key concepts used by luxury companies to gain continuous competitive advantages over the competition and pursue the uniqueness indicated in the VRIO model¹⁴². The recent combination of these two topics gave birth to one of the most relevant and discussed topics of the nowadays luxury industry: brand positioning. Both business articles and economic literature focused on what is becoming a real new subject. Today, due to the great importance that these concepts gained day by day, this phenomenon is deeply studied and spread everywhere, considered one of the main pillar towards the route of success: indeed, the brand positioning is the most diffused marketing strategy, recognized as fundamental by almost all the industries' experts. Among them, the already mentioned historical marketing's father Jack Trout, proposed the following definition to highlight the decisive human component to face: *'Brand positioning is just the way you differentiate your product or your company in the customer's mind'*. The point looks similar to what discussed in the previous paragraph about brand and product positioning: the former aims to create an instant, strong and positive connection between the product and the company behind it, the latter wants to collocate the innovation in the most effective

¹⁴¹ <https://smallbusiness.chron.com/importance-product-positioning-marketing-plan-24275.html>

¹⁴² Chapter 3, paragraph 3.1.6

way to enter into the customers' mind. Brand positioning combines these effects and it goes even beyond by trying to exploit the powerful connection activated by the brand into the customers' mind to finally reach and conquer their perceptions.

This last feature of brand positioning opens up to another relevant topic: indeed, the most consistent part of the continuous and dangerous unpredictability facing the nowadays reality is given by the strong receivers' subjectivity. Consumers have own specific perception of the reality, thus there are no universal brands or products appreciated everywhere. Not everyone in the world dreams an Apple iPhone or loves Starbuck's coffee or drinks Coca Cola: always there will be a person who prefers a Samsung mobile, a Lavazza's coffee and a Pepsi-Coke. At the same time, there will be another consumer who calls through Huawei, who drinks Moak's coffee and consumes Seven Up. Indeed, all the people are different because everyone has his/her own perception: today it is not anymore a mere matter of objects or features, what is decisive is the subject who will interact with the upcoming innovation. The same concept is well-explained by the aforementioned authors in their "*Law # 4 – The perception law: marketing is not a battle of products, but a battle of perceptions*" (J.Trout & A.Ries). Managers still think that the marketing is a continuous war among features, advertising, prices and other marketing mix variables: according to them, the richest will win while those with lower resources disappear. However, it is a wrong belief especially in the marketing world where there are no facts, but only perceptions into the consumers' mind. Thus, if companies focus only on attributes or financial aspects, they will be immediately out of the competition: market operators focus on facts, analyses, researches and knowledge that clearly help the decision maker, but don't conduct to the true. Today, analysts and experts should be supported by psychologists or neuroscientists who may know how some aspects into the customer's brain work, even if no universality may be detected because of external variables. Perceptions may be accentuated depending on the Country or the culture where consumers live: indeed, many brands enjoy great perceptions in some places while the same are negative considered in others. For examples, Wal-Mart is the most known supermarket in America while, except the numerous mentions in universities' books, it is almost unknown in Italy; Huawei is perceived as a full smartphone's company in Europe, while in Asia it shows its very identity of telecommunications' enterprise. Levi's diffused in some Countries a new 'young' positioning, but in some areas it is still perceived as 'old'.

As result, due to the unpredictable subjectivity, it is not possible to conquer all the market neither for luxury companies, even if their products might be the best in terms of performance and quality.

Subjectivity is a double-edged knife: it complicates a lot companies' efforts to effectively reach own target, but it guarantees market's survival to those firms with lower financial resources but

higher brand positioning. Indeed, consumers who decide to buy a Samsung smartphone instead of an iPhone - beyond eventual economic reasons – are driven by own perceptions about the Finnish company. They evaluate some Samsung attributes, experiences or services superior than those offered by Apple: the result is an higher collocation of the Finnish brand over the American one in their mind.

These hidden reasoning were deeper examined by authors, researchers and experts. Among them, George A. Miller did lots of psychological studies in Harvard to better understand how consumer's mind works: he concluded that, on average, people are not able to manage more than seven units at a time. The discovery revealed that consumers, when they have to decide among several products or brands, tend to exclude because they are not able to remember everything. Based on this main theory, many authors deepened the study and finally designed some mental models able to partially explain consumers' reasoning. Two of the most recognized and mentioned even in De Veglia¹⁴³, Trout and Al Ries' books¹⁴⁴, are further discussed:

- The scale's model: it is based on the main assumption that the market is formed by categories of products. For each of these, customers have own mental three-level scale to position the brands, respectively: the brand leader, the brand challenger and the last brand. From the third onwards, it begins the 'indifferent zone' that contains all those brands that customers are not able to maintain in their minds. For example, in the smartphone industry, an American user may think at Apple as brand leader, Samsung as brand challenger and Huawei at the last level of its mental scale. If this is the case, then Xiaomi, HTC and Motorola should not be considered. De Veglia calls this model *'the brand consideration set'*, a sort of list of expense. However, today this model is considered overpassed because of the plenty of both brands and advertising compared to the past: then, the best model to refer to is the mountain's one, further discussed;
- Mountain's model: again, the main assumption divides the market in several categories of products. Thus, into the consumers' mind there are as many mountains as the categories of interest: cars, jewellery, watches, etc. Unlike the previous model, in the mountains there is only one brand and it is placed at the top¹⁴⁵. According to the previous example of an American user in the smartphone industry, if in the scale's model he/she lived an interior battle between Apple, Samsung and partially Huawei in order to choose the 'best' phone, through the mountain's model he/she will go only for one direction. Subjectivity plays,

¹⁴³ 'Brand positionig: Zero concorrenti'

¹⁴⁴ 'The 22 unchangeable laws of marketing'

¹⁴⁵ De Veglia suggests to image a flag with the company's logo at the top of any mountain to represent the customer choice in own mind.

again, a critical role because different customers position different flags at the top of own mental mountains.

To underline the importance of these models, Trout and Al Ries wrote down a specific law: '*Law #3: The mind's law: it's better to be the first in the consumers' minds than the market leader*'. The authors affirm that, in order to survive or really conquer the market, is better to have half budget but double brand positioning. Large companies cannot rely only on financial aspects or massive promotion: indeed, the third law goes in parallel with the fourth mentioned previously, which identifies a perception's war rather than marketing battles. Business examples are capable to reinforce the concept: Xerox spent more than two billion dollars in 25 years with the objective of entering in the computers' industry. However, today the company is still remembered only for photocopies and not a PC producer. Thus, independently of the money invested to attract customers, receivers don't change because of own internal rigidity. Explanations referred to the luxury industry might be perception and association into the customer's mind generated by the strong and historical image of the company in front of them, now almost impossible to modify.

The key topic of positioning is integrated both with product and brand in order to achieve higher and higher results: all the luxury companies, even in the automotive industry, are able to exploit the advantages given by the brand positioning in their strategies. Today, all the best automotive luxury companies enjoy powerful brands known worldwide and capable to strongly position own image and the product itself into the consumers' minds. In this sense, Ferrari S.p.A. has an incomparable heritage and long tradition, but unlike the greatest part of the luxury car brands, the Prancing Horse possesses a key-advantage that allow the company to achieve the top of the VRIO Model: the purple cow.

Seth Godin, in its famous homonym book '*The Purple Cow*', refers to a very particular 'P' of the marketing mix: the extraordinariness. According to the authors, a company should not offer to its customers what they simply desire: differently, the producer should try to deeply impress the receivers with something really unique and unpredictable. Moreover, this incredible effort should not be something '*una tantum*': contrary, whenever the company plans to launch a new product, it should be able to introduce critical and unexpected innovations to continuously conquer the customers. Common belief is 'to guess right' the first product and then, once the fame is consolidated, simply introduce incremental innovations: however, several business cases (even coming from the luxury market) show negative evidence. Monotony and repetitiveness are the most difficult challenges to face: beyond the prestigious offered by the powerful brands, no customers may be eternal satisfied if no concrete novelties are added to the main base.

Seth Godin introduces, then, the concept of *'the marketing of the extraordinary: the art of creating products and services that integrate extraordinary elements that stand out'* (Seth Godin). The concept perfectly suits with another key element highlighted by the same author and perfectly inherent with the Ferrari's world: the "Otaku". Tom Peters, in its *'Wow, a success to scream'*, sustained that the only products able to gain success in the future will be those moved by customers' real passion and, thus, capable to generate something special. In the long run, the true leader will be the one that continuously do something extraordinary: the decision to reduce its efforts may dramatically lead the company to lose own market share.

Ferrari's ability was to continuously exploit the Purple Cow by introducing new concepts, components, technologies, designs, innovations and most powerful engines, increasing day by day an already widespread and eternal "Otaku". In this sense, the company had the capability to exploit the powerful combination derived by its racing souls with the huge customers' passion to drive its prestigious models. Moreover, not only the company continuously faced a comprehensive monotony by proposing more and more variety, but it even challenged another reality described by Peppers and Rogers in their *'The One to One Future'*. According to the authors, companies usually find easier to maintain an old customers than acquire a new one. In this sense, many articles and researchers affirm the reality of their findings, and it explains the uncountable efforts and services directed to cuddle the loyal customers. The Prancing Horse raised the bar even in this field by proposing, every year, several 'prospect' events and occasions to conquer higher percentages of new customers.

Whatever the launch or the improvement, Ferrari S.p.A. always guarantees element of extraordinariness into any innovation: the main concept is developed in order to bring concrete added value capable to go really beyond the normal expectations. A proof of the intrinsic power of the Otaku is confirmed by the pure racing soul of the Prancing Horse, the Scuderia Ferrari: after glorious years at the beginning of the 2000s, the company is still living very negative years in terms of Formula 1 Championship victories. However, nevertheless in the last decade the Prancing Horse didn't reach any constructors or pilots title, though the continuous path towards the innovation and the huge 'Otaku' burning inside its customers, the brand has been recently (*January 2019*) considered the most powerful and influencing of the world¹⁴⁶.

¹⁴⁶ According to Brand Finance, 22.01.2019 (Chapter 4, paragraph 4.3)

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