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A RESEARCH FOR ESSENCE OF A COMPANY'S CONTINUOUS GROWTH: Implications from Johnson & Johnson

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Abstract

The rapidly changing business circumstances of 21st century go beyond the traditional competitive advantage theories such as Porter's SCP model and Barney's Resource Based View, which makes companies hard to sustain its competitive position over time. In this context, the thesis aims to examine how a company should achieve its long term growth in a dynamic business environment through an in-depth analysis of Johnson & Johnson (J&J) and its mechanism of continuous renewal of strategy and organizational capabilities.

As examinations, four analyses are adopted: 1) Era analysis of J&J comparing with other players in the pharmaceutical industry to clarify J&J's unique business activities, 2) Dynamic Capability Framework (DCF) analysis to unveil how J&J achieves its competitive advantage, and extract its core competence to see why it is possible, 3) Activity System analysis to investigate how core competence relates and enforces with each other, and 4) Relationship analysis of J&J's strategy and core competence development to look into how the strategy influence on building core competence and vice versa.

It is evidential that J&J has been successful in sustaining its competitive position by constantly launching valuable new products in its core healthcare business domain through a series of acquisitions of external venture firms as well as organic development. Such activities can be articulated by DCF perspective, namely an effective use of processes of opportunity sensing, idea

seizing and business reconfiguring. Moreover, the in-depth analysis of J&J's long term growth path has revealed that the essence of performing DCF lies in the company's intrinsic ability and culture determined by its core competence (or activity system). Specifically, core competence of customer and market knowledge ensures its open innovation to identify promising venture firms for acquisition, and decentralized management flexibly reconfigures the organization to utilize the acquired assets. At the center of J&J's core competence, Our Credo acts as the adhesive to interrelate each core competence into J&J's activity system. The set of core competence has been generated by each phase of J&J's strategy, and the core competence in turn has enabled the company to develop next strategy.

The result of J&J's real-life case analysis implies how a company should achieve continuous growth, and implementing DCF, especially identifying changing customer and market needs in its sensing process should be effective in rapidly changing business environment. The result poses a further implication on why the company can implement DCF, and developing the mechanism to renew strategy and core competence based on the company's core value with customer orientation should be of essence.

<Inside Cover>

A Research for Essence of a Company's Continuous Growth: Implications from Johnson & Johnson

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CHAPTER 1. CHAPTER1. INTRODUCTION

Section 1. OBJECTIVE

Now the time is in the era of VUCA (Volatility, Uncertainty, Complexity, and Ambiguity) and hypercompetition, which makes business circumstance rapidly changing, going beyond the traditional business theories such as Porter's SCP model and Barney's Resource Based View, and makes a company hard to achieve continuous competitive advantage. Therefore, they are now required to have foresight in advance toward a market and develop strategy and tactics to acquire a series of "temporary" competitive advantage for continuous growth. Along with the situation, Dynamic Capability Framework (DCF) which highlights companies' strategic process and flexibility not only to adapt to the market but to lead it has been getting more paid attention. How in detail to implement DCF, however, remains to be uncovered, and there seems to be few previous researches to illustrate "real-life" DCF implementation cases.

Given such a situation, this research tackles to investigate Johnson & Johnson's (J&J) DCF, core competence which makes it possible, and how the competency has been developed through the mutual relationship between strategy and core competence. The implications extracted from this research must be beneficial in that they cast light on how a company should achieve continuous growth through a series of temporary competitive advantage, and why the company can implement DCF.

Section 2. COMPOSITION OF THIS THESIS

This thesis consists of mainly three compartments: 1) Necessity of DCF, 2) J&J's case analysis for DCF and core competence, and 3) Implications for essence of a company's continuous growth (Figure 1). Compartment 1 explains necessity of DCF through reviewing how the business environment has changed into VUCA and hypercompetition world, where famous traditional theories for competitive advantage cannot be well applied but DCF is becoming more important. Compartment 2 introduces J&J company profile and history, followed by its DCF, activity system analysis, and core competence which enables J&J to carry out DCF. Relationship between strategy and core competence on how it influenced each other for development is also analyzed. Compartment 3 describes implications based on analysis of J&J as to how should a company achieve continuous growth through a series of temporary competitive advantage, and why a company can implement DCF

Figure1 : Composition of Thesis

Compartment	**Contents to cover**	**Chapter**
Necessity of Dynamic Capability Framework (DCF)	✓ Market environment change ✓ Traditional theories for competitive advantage and their limitations ✓ DCF and its essence	**2-3**
J&J's case analysis for continuous growth	✓ Company profile and history ✓ J&J's DCF ✓ Activity system ✓ Relationship between strategy and core competence	**4-6**
Implications for essence of a company's continuous growth	✓ How should a company achieve continuous growth? ✓ Why can a company implement DCF?	**7**

CHAPTER 2. THE ERA OF VUCA AND HYPERCOMPETITION

Section 1. VUCA AND HYPERCOMPETITION WORLD

No manager would deny the current business environment is rapidly changing into the world where a new business model emerges while the traditional one becomes obsolete. Consumers have more various needs and get empowered. Companies in any industry can handle with new entrants of whom they have never though as competitors. The situation is often represented as “VUCA”, abbreviation of Volatility, Uncertainty, Complexity, and Ambiguity. Under VUCA world, “Good old days” of familiar competitive landscape no longer exist, but fierce competition among companies with different background take place instead.

D’Aveni (1994) calls the world “hypercompetition”, where he defines the environment as characterized by intense and rapid competitive moves, in which competitors must move quickly to build advantage and erode the advantage of their rivals. He also states four arenas of hypercompetition, which are 1) cost-quality advantages, 2) timing and knowhow advantages, 3) strongholds from erecting entry barriers, and 4) deep pockets. Cost-quality advantages refer that competition forces a company to move to a position of ultimate value which is a high-quality product for a low cost as actions to create differentiation and avoid a price war ultimately prove futile. Timing and knowhow advantages suggest that first mover advantages exist but competitors imitate. The more they imitate, the better and faster they get, forcing the innovator to speed up its own cycle of innovation. Ultimately the cost of innovation exceeds the short-term gains that can be made from innovating. Strongholds from erecting entry barriers means few barriers to entry last long when severely challenged. Competitors build up their own resources and skills and are able to get over or around barriers that have been erected. Deep pockets suggest that companies can derive advantage through a larger resource base and superior concentration of focus to crush a smaller competitor through brute force.

Section 2. IMPACT OF GLOBALIZATION, CAPITALIZATION AND DIGITALIZATION

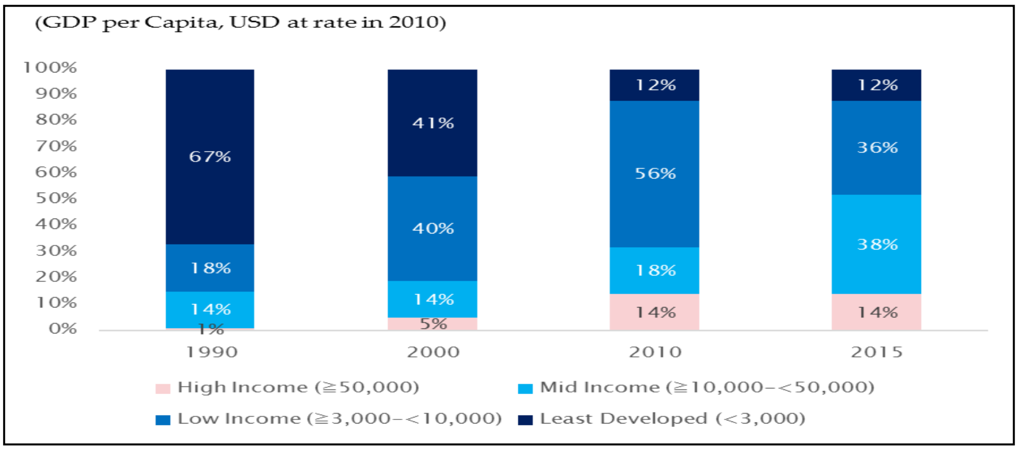
Background surrounding VUCA and hypercompetition can be articulated when looking at the environment change since 1990, the end of cold war. Hirano (2017) stresses three key factors as 1) Global, 2) Capital, and 3) Digital. How each of the three has impacted on developing VUCA or Hypercompetition can be explained as below.

Global

Hirano points out the globalization in post-cold war era is characterized by the radical expansion of economic market size from 600 million people in developed countries into 4 billion in developing ones, with connection of the two worlds where have quite different political systems, social criteria and national income level. Figure 2 shows the trajectory of population by income level since 1990, which clearly indicates emerging population of mid income level which implies an expansion of economic market. On the other hand, the world GDP share of developed countries such as US, EU and Japan decreased while the rest of world increased instead, which suggests that key players in economic market have been shifting to the emerging countries.

Along with these trend shifts, multi-national companies are trying to enter the new frontier and seize the opportunity but there seems to often struggle with the distance between host country and the new markets which Ghemewat (2001) calls “CAGE”. In addition, the more emerging markets are born, the harder companies deal with their global business management to strike a balance between global integration and local responsiveness as Bartlett and Ghoshal (1989) illustrate so called IR framework. All taken into account, globalization made economic market expand and diverse, which then influences a company’s business strategy and execution toward VUCA.

Figure 2: Population Share by Income Level (100%=7.35 Billion)



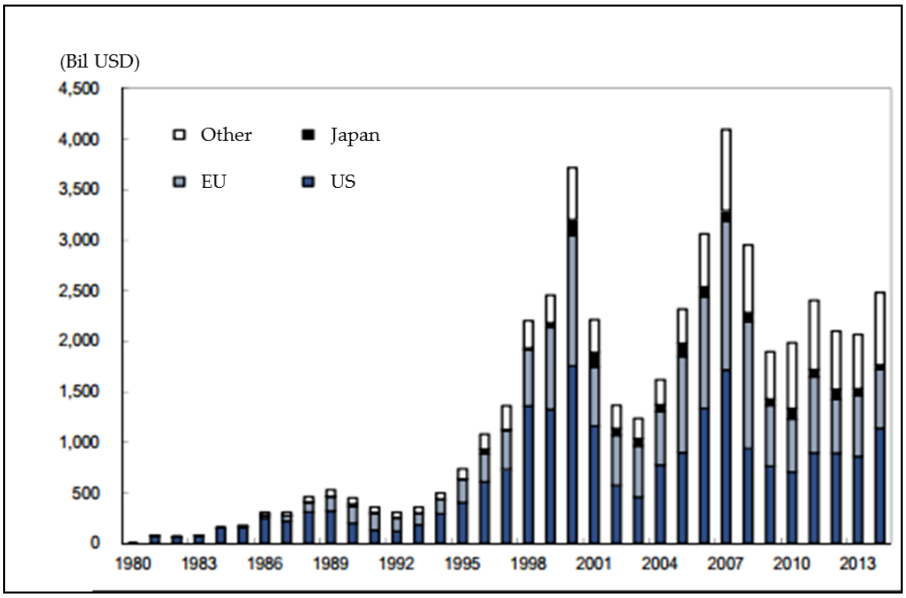
Source: Hirano (2017)

Capital

Swelling capital economy is regarded by Hirano as one of the major trends since 1990s. He explains the background of its expansion attributes to an excessive investment supply due to macro level monetary easing led by the government and/or financial institutions. On the other hand, micro level economic activities such as innovation of finance technology (ex. securitization of equity and credit, and derivative products), rising of hedge funds and private equities, and increasing M&As are also mentioned as playing an important role in augmentation of capital economy. Figure 3 shows the world M&A deal value trends from 1980, and it is obvious that deal value increased significantly since after the end of the cold war. Hirano stresses that while the capital economy enhanced dynamism of company activities, negative aspects arose. Based on globally connected capital market, substantial speculative investment can easily be transferred, which caused a problem that some local financial crisis can give critical impact on the systemic global market and destabilizes the world economy. So-called "Lehman shock" is one good example which aggravated the worldwide economy because securitized bad debts had been spread into many parts of the world.

Inasmuch as the impact of globalization on VUCA, the growing capital market also acts as a huge risk factor for stability of business environment. M&A is surely an effective methodology for companies to enlarge their entity for obtaining scale merit, restructure resources or ownership for strategic change, and secure a prompt access to a new business area or a local market. The great tool, however, comes with the great risk that deal objectives cannot be met for the reasons such as misunderstanding synergetic effects for sales up or cost down, lack of contemplating business aim and deal structuring in strategic level, and insufficient due diligence and valuation in execution level, and critical cultural difference and malfunction of governance and stakeholder management in PMI. Although M&A connotes those risks, companies have continued investing in big deals to acquire an advantage over competition, resulting in hypercompetition. Four arenas of hypercompetition which D'Aveni indicates would be owed, at least to some extent, to the increasing deal of M&As.

Figure 3: World M&A Deal Value



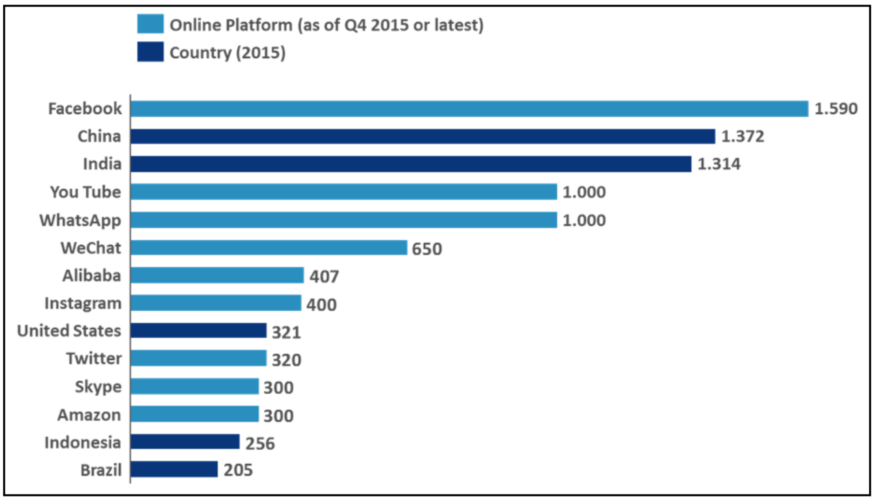
Source: Thomson Reuters, City Group

Digital

Hirano explains starting digitization of economy originates from the end of cold war, when utilization of internet was released from military to public. One major characteristics of digital economy is platform, where startups can launch their business efficiently and can access to global customers from the start as "Born global". Suppliers of platform, on the other hand, begot huge profit and grew to occupy top lists of world's company market capitalization such as Apple, Alphabet, Microsoft, Amazon and Facebook. It is also of note that digitization broke barriers of time and distance, and things were connected as IoT, which triggered emergence of a new business model. Through the impact of digitization, it cannot be overestimated that quality of life of people has been improved.

Although digital economy has bestowed a company a lot of benign effects, there are also some malignant aspects in VUCA and hypercompetition for companies. First, digitization often disrupts existing industry markets. It is through an innovative invention of totally new business model which is never created without digitization. For example, Amazon destroyed the traditional book store industry by creating an online book website. Uber disrupted existing TAXI industry by developing a sharing business model connecting drivers and passengers with smartphone App. Those cases appear good for customers, but for a company who have played for years in the stable environment and competed with familiar rivals digitization can surely be the big risk because it has enough power to make a current business model obsolete in an instance and invalidate a boundary of some industry, which an existing company has to compete with who have totally different business model and resources. Second, empowered consumers increase VUCA for a company. Under the digital economy, consumers can respond quickly for goods or services provided by a company and share it with others in a platform. The “real-life” user experience and response are instantly penetrating among other users in the platform, and they are cherished more than advertisement or any other commercial activities delivered by a company. Figure 4 shows the number of online active users compared with country populations, indicating that they are now organizing tremendously huge groups which are far larger than the big nations such as China, India and US, which endows consumers an ability, or agility, even to change politics. Likewise, the size of the platform should not be too small to give a tremendously huge impact on a company’s reputation and brand image. Thus, a company is required to carefully think about how consumers would react for their goods or services as well as take advantage of its impact to maximize business performance.

Figure 4: Active Users of Online Platforms vs Country Populations (Million)



Source: McKinsey Global Institute

CHAPTER 3. WHY DYNAMIC CAPABILITY FRAMEWORK IS IMPORTANT?

Section 1. TRADITIONAL THEORIES OF COMPETITIVE ADVANTAGE

Creating competitive advantage has long been an area of interest for a company, and academia accordingly have pursued theories. Three most famous ones are Porter's SCP model, Barney's Resource Based View, and Prahalad and Hamel's Core Competence.

Porter (1980) states that an industry structure defines intensity of competition, which develops a company's conduct for competitive strategy, and the conduct results in performance. In other words, profitability of a company is determined by the structure of the industry. According to the theory, there are five forces in an industry to determine the profitability of a company: potential entrants, substitutes, suppliers, buyers and finally industry competitors. The theory also premises that all the five components are regarded as "competitors". Thus, Porter explains that analysis of the structure is the fundamental underpinning for formulating competitive strategy and a key building block for most of the concepts, and once it is diagnosed, companies proceed to identify their strengths and weaknesses relative to the industry, which finally makes a company take a strategic position from three approaches: overall cost leadership, differentiation, and focus. It is mentioned in the theory that overall cost leadership can be achieved through aggressive construction of efficient scale facilities, vigorous pursuit of cost reductions from experience, tight cost and overhead control, avoidance of marginal customer accounts and cost minimization in areas like R&D, service, sales force, advertising and so forth. Porter says that once the low cost position is achieved, it can protect the company against all five forces since bargaining can only continue to erode profits until those of the next most efficient competitor are eliminated, and since the less efficient competitors will suffer first in the face of competitive pressures. Differentiation strategy suggests that it should create uniqueness in the industry. It refers to, for example, design, brand image, technology, customer service, and so forth. It is pointed out that although differentiation strategy does not mean to ignore costs, but they are not the primary strategic target. Porter stresses that differentiation is a viable option to obtain above average returns in an industry since it creates a defensible position for coping with five forces, in a different way from cost leadership. Finally, focus strategy premises that a company can focus on some specific, narrow target more effectively than competitors who are competing more broadly. Through focusing on some particular target, the company can achieve either differentiation by satisfying a specific target better than competitors, or cost leadership by lowering cost for focused target than competitors, or both. The focus strategy accompanies trade-offs, however, between profitability and sales volume.

Barney's Resource Based View (1991) in turn cast light not on external factors but on a company's internal resources to achieve competitive advantage. It is said that the theory provided by Barney goes just the opposite direction to Porters' SCP model. Barney points out that SCP model has placed little emphasis on the impact of idiosyncratic company attributes on a company's competitive position, and implicitly adopted two simplifying assumptions; the environmental model of competitive advantage assumed that companies within an industry are identical in terms of strategically relevant resources they control and the strategies they pursue, and assumed that resource heterogeneity develop in an industry, that this heterogeneity will be very short lived because the resources that a company uses to implement their strategies are highly mobile. In this context, Barney stresses the difference between his Resource Based View and SCP model in that since Resource Based View stands on the link between a company's internal characteristics and performance, it cannot build on the assumptions adopted in SCP model. Rather, Resource Based View premises other two assumptions. First, the model assumes a company within an industry may be heterogeneous with regards to the strategic resources they control. Second, the model assumes these resources may not be perfectly mobile across companies, which indicates heterogeneity can be sustained. Barney classified a company's resources which can lead to competitive advantage into four perspectives: 1) Valuable Resources, 2) Rare Resources, 3) Imperfectly Imitable Resources and 4) Organization. Those four resources are so called VRIO framework, and key questions for each of the four resources were presented as below;

1. The Question of Value: Does a resource enable a company to exploit an environmental opportunity, and/or neutralize an environment threat?
2. The Question of Rarity: Is a resource currently controlled by only a small number of competing companies?
3. The Questions of Imitability: Do companies without a resource face a cost disadvantage in obtaining or developing it?
4. The Question of Organization: Is a company's other policies and procedures organized to support the exploitation of its valuable, are, costly to imitate resources?

Barney insists that all the four resources are required to achieve "sustained" competitive advantage, and inability of current and potential competitors to duplicate the resources makes a competitive advantage sustained.

Prahalad and Hamel (1990) developed the theory called Core Competence. The theory rests on the condition that major global companies have almost reached the level that both cost reduction and quality improvement cannot be enhanced any more, and those activities are getting less reliable to obtain competitive advantage but rather are minimum requirements to participate in competition. Instead, building core competence with less cost and in shorter time than competitors generates competitive advantage. Prahalad and Hamel also stress that acquiring and nurturing of core competence is a company's organizational learning, and it needs to be given sufficient investments and protected. In addition, core competence is an adhesive to bond existing business portfolio and to create some new business opportunity, and they deny that attractiveness of a market analyzed through five forces defines the pattern to enter a new market or diversify a company's business portfolio, but core competence does. For example, 3M consistently has invested in its core competence in adhesive and coating technology and developed methodology to combine those competence. As a result, 3M diversified its business to many industries, but what made it diversified can account for its core competence, and the core competence rests behind its diversification. Prahalad and Hamel point out that three conditions should be considered to identify a company's core competence. First, core competence must be something to bring an ability to enter broad and various markets. Second, it must contribute to the value of products to customers. Third, it must be what is difficult for competitors to imitate. Prahalad and Hamel admit that achieving competitive advantage can be possible temporary at least without developing core competence. In this sense, relying on outsourcing would be a shortcut for producing some great product, but it never contributes to nurture skill which is vital to acquire and sustain market leadership position, or which is accomplished through learning within an organization. Therefore, they suggest that a company should identify what kind of core competence to develop within its organization, and invest not on business units or their products, but on developing and retaining core competence.

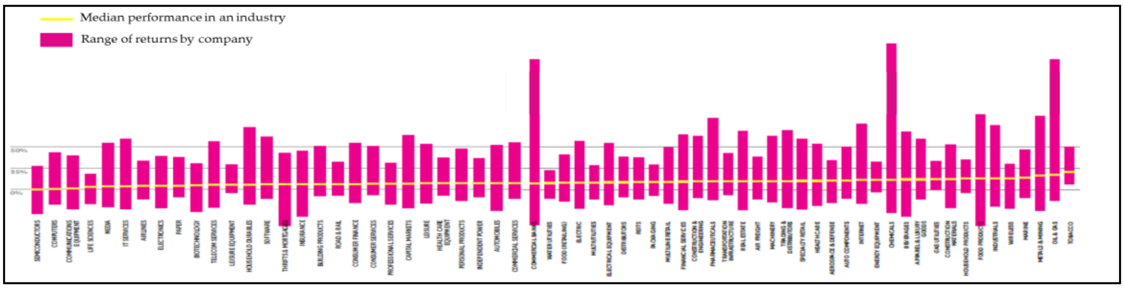
As explained, the three major theories for competitive advantage were developed respectively during 1980-1990s, and they can be categorized into two different assumptions for acquiring competitive advantage; Porter's SCP model seeks for competitive advantage deriving from an external factor such as the attractiveness of a market through analysis of the five forces surrounding a company, while Barney's RBV and Prahalad and Hamel's Core Competence count on an internal factor of a company's distinctive resources.

Section 2. SHORTER PERIOD OF COMPETITIVE ADVANTAGE DUE TO CHANGING ENVIRONMENT

As the business environment changed rapidly into VUCA and hypercompetition, it has become more challenging for companies to obtain and retain competitive advantage. Indeed, Wiggins (2005) researched whether the period of companies' competitive advantage is becoming shorter over time, and proved that it was happening in broad range of industries. The research also found the occurrence of hypercompetition and large part of economy is characterized increasingly by hypercompetitive behavior, and managers have reacted to this hypercompetition by seeking not for a single sustained competitive advantage, but for a series of short advantage which can lead to competitive advantage over time. Wiggins suspects that even industries with stable traditional technology bases are increasingly subject to the effects of changes in information technology which are ubiquitously deployed across all industries.

Findings by Wiggins gives an important issue to the traditional theories; those theories were developed based on a static market point of view. For example, Porter's SCP model starts from an analysis of structure of an industry to select which industry should be entered and what position a company should take. It means that a company's strategy is developed through a snapshot of the industry structure, and excludes from taking it into consideration that its environment could change at any point. In fact, Evan (2013) analyzed annual total shareholder returns (TSR) in various industries during 2001 to 2011 and found out that there were little differences among industries (Figure 5). Rather, the data shows striking differences in terms of range of returns by company in the same industry, which indicates that in the era of hypercompetition, the selection or switching of industries are not important but a company should concentrate on achieving the top of the industry they play. In addition, Ruefli (2003) proved that corporate factors better predict business performance than industry ones, indicating managers in a company can have an influence on business performance. Chen (2010) supports the evidence using a survey for 104 companies to investigate the behavioral aggressiveness of top management team that in the hypercompetition, a company which have the top management team with competitive mindset behave more aggressive actions, and its aggressiveness leads to a company's performance than other companies who do not. Other related researches also provide similar results that companies' competitive aggressiveness contributes to acquiring market share (Ferrier, 2001) or enhances ROA and ROS calling “the Red Queen Effect” (Derfus, 2008).

Figure 5: Annual Total Shareholder Returns by Industry (2001-2011)



Source: Evan and Rangan (2013)

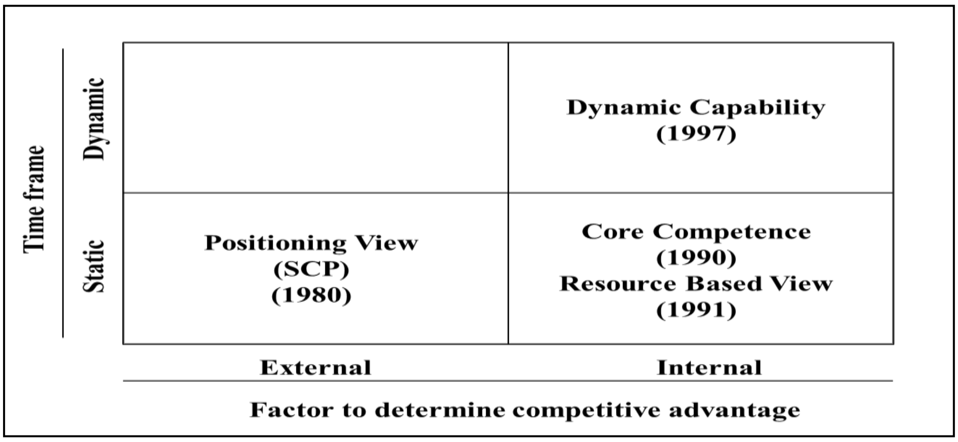
Limitations can also be seen in Barney's Resource Based View. Barney stands on the assumption that companies within an industry are heterogeneous in the resources they control, and these resources may not be perfectly mobile across companies. Based on these assumptions, the concept of VRIO was developed. But they can be vulnerable if there are some drastic or unpredicted changes in resource value, rarity, inimitability, and organizational system. D'Aveni (2010) challenges Porter's SCP model and Barney's RBV saying both five forces and RBV are rooted in a conception of the world that is essentially stable, and what if equilibrium is impossible or fleeting, or what if industry structure is too temporary to be called structure? Ikegami (2016) points out that there exist resources which act both as positive and negative effects, and the two sides can change depending on the business environment. Given the implication, RBV is actually required not just to look into internal resources but to outlook external circumstances. In fact, Barney (1991) himself admits that sustained competitive advantage does not mean that it will last forever, and unanticipated changes in the economic structure of an industry may make resources which have been valuable, rare, and inimitable obsolete and no longer source of competitive advantage. In this context, Core Competence by Prahalad and Hamel lacks a perspective how it should be nurtured and utilized in dynamic market environment.

Section 3. Dynamic Capability Framework for a series of temporary competitive advantage

Considering what has been discussed in the previous researches in the era of VUCA and hypercompetition, it is evident there should be a theory besides Porter' SCP model and Barney's RBV which premises the business environment change and adapt to it, while looks for competitive advantage. Again, both SCP and RBV were developed in 1980 and 1991 respectively, when was before or in the tipping point of the end of Cold War, following globalization, capitalization and digitization into VUCA and hypercompetition.

In this context, Dynamic Capability Framework (DCF) (Teece, 1997) casts light on how a company obtains competitive advantage in an industry with constantly changing, and DCF is critically distinct from the traditional theories in that it premises dynamic environment (Figure 6). Teece defines DCF as a company's ability to integrate, build and reconfigure capabilities not only from internal but also from external to apply to the business environment changes. Thus, DCF reflects an organizational ability to achieve new and innovative forms of competitive advantage. DCF can clearly be distinct from capability in that DCF is the ability to implement strategy according to the stream of business environment change or even attempts to lead the market through innovative actions, while capability just indicates something to implement a particular task.

Figure 6: Categorization of Theories for Competitive Advantage



Source: Author

Teece (2009) provided three key components and requirements for consisting DCF.

1. Sensing: Abilities of individual or organization is required not to access to information but to understand customer behaviors and new creative activities in the industry and to have the practical knowledge in the market. The reason why these abilities are necessary is because sensing an opportunity counts on an interpretation of information such as breakthrough of technology, conversations in a trade show, or concerns and unsatisfaction of customers. A company is then required to develop hypotheses for sensing new opportunities by interpreting and filtering information which has been accumulated through the interaction with the market they play. Teece suggests that it should be more ideal approach to embed the process of scanning and interpreting some valuable information from external resources not into individual but into organization, in case a company can weaken its capability if depending on only a few individual skills.
2. Seizing: Once the new opportunity is identified, a company is required to work on tasks to invest for R&D and commercialization. Its decision making may be, however, sometimes impaired due to a company's culture and its organizational structure. An organization which has multiple layers for decision making is inclined to be bureaucratic, resulting in preventing from the new opportunity or innovation. On the contrary, as is often the case with such structure, the management committee would head for balancing and

compromising, and some of the members even interfere since their organizational position can be threatened by the new opportunity. A company which have a successful experience in an existing business unit also tends to have a culture of regarding the new opportunity as risky, and sticking to established procedures, capabilities or management routine. Therefore, recognizing a company's culture and leadership are critical to avoid those negative bias and appropriately seize the opportunity toward investment in R&D and commercialization. Selecting a business model is another ingredient for seizing, such as identifying a target segment, technology to adopt to the new product or service, a way to meet customer needs and so forth.

3. Reconfiguring: The final component refers to reorganizing a company's specific tangible and intangible assets to take the opportunity into action. Teece remarks that decentralization is effective to conduct reorganization since it can retain flexibility and responsiveness, and enhance quickness and accountability of decision making. Open innovation is also vital to go beyond an organization and access to an external technology for integration. Other two required abilities are co-specialization and knowledge management. Co-specialization is introduced by Teece designating the relationship between assets, which can give a synergetic effect with each other when combined. Knowledge management in this context is defined not only as an ability for learning itself

> but as integration of knowhow within a company or between a company and an external organization such as a university or another company. Integrating knowhow of both internal and external have significant impact on success if the system and network for it exist, and those are critical in DCF.

Teece stresses that the past defines not only the current performance, but also performance in the future. Hence, managers should strive to try a lot of activities to discharge a dilemma of process and structure which have been built in the past. DCF then can provide managers with guideline to evade zero profit or even acquire a series of competitive advantage. DCF is an orchestration process of sensing, seizing and reconfiguring, and Teece suggests that a company should develop the capabilities to drive sensing, seizing and reconfiguring process to obtain and retain competitive advantage.

CHAPTER 4. JOHNSON & JOHNSON: THE COMPANY WHICH CONTINUES GROWING

Section 1. COMPANY PROFILE

Although it is in the time of shorter period of competitive advantage for companies, some companies do exist with continuous growth. Johnson & Johnson (J&J), the largest health care company, is one of them. J&J is a holding company, which has more than 230 operating companies conducting business all over the world. The company's primary focus is products related to human health and well-being. J&J was founded in 1886 in New Brunswick, New Jersey (the Headquarters is still located at the same place) by Robert Wood Johnson and his two brothers with 14 employees. The executive committee of J&J is the principal management group responsible for the strategic operations and allocation of the resources of the company. Within the strategic parameters provided by the committee, international operating companies are each responsible for their own strategic plans and the day-to-day operations of those companies. Each operating company is managed as decentralized by residents of the country where located.

J&J's business portfolio is divided into three segments: Medical Devices, Consumer, and Pharmaceutical (Figure 7).

Medical Devices:

The Medical Devices segment includes a broad range of products used in the orthopaedic, surgery, cardiovascular, diabetes care and vision care fields. These products are distributed to wholesalers, hospitals and retailers and used principally in the professional fields such as physicians, nurses and eye care professionals. They include orthopaedic products: general surgery, biosurgical, endomechanical and energy products; electrophysiology products to treat cardiovascular diseases; sterilization and disinfection products to reduce surgical infection; diabetes care products, such as blood glucose monitoring and insulin delivery products; and disposable contact lenses.

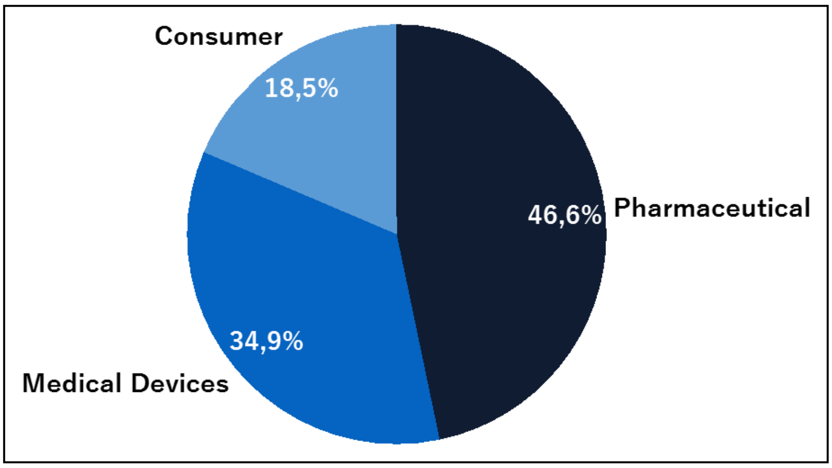
Consumer:

The Consumer segment includes a broad range of products used in the baby care, oral care, beauty, over-the-counter (OTC) pharmaceutical, women's health and wound care markets. Baby care includes the JOHNSON'S® line of products. Oral care includes the LISTERINE® product line. Major brands in Beauty include such as NEUTROGENA® and ROC® product lines. OTC is well known for TYLENOL® brand. Wound care brands include the BAND-AID® product lines. These products are marketed to the general consumers and sold both to retail outlets and distributors throughout the world.

Pharmaceutical:

The pharmaceutical segment identifies five therapeutic areas: immunology, infectious diseases and vaccines, oncology, neuroscience, and cardiovascular and metabolic diseases. Products in the segment are distributed directly to retailers, wholesalers, hospitals and pharmacies for prescription use.

Figure 7: Sales Share by Business Segment



Source: J&J Annual report 2016

The business of J&J is conducted by more than 230 operating companies located in 60 countries. The products made and sold in the international business are based on the three segments

(Medical Devices, Consumer, and Pharmaceutical). The principal markets, products and methods of distribution in the international business may vary with the country and culture, according to decentralization by local management. Sales split by geography shows that US accounts for 52.6% of sales, while the rest goes to other areas such as EU, Asia Pacific, Latin America and so on.

Section 2. HISTORY

4.2.1. Phase1: Foundation

Robert Wood Johnson, the founder of J&J with his two brothers, was 16 years old when he moved from Pennsylvania to Poughkeepsie, New York in 1861. The time was in Civil War, and his mother secured him an apprenticeship at her family's pharmacy there since he was too young to serve as a soldier. There he learned the business of mixing medicated plasters, which made him have interest in healthcare business. After several years of apprenticeship, Johnson worked as a salesman of drug products, and in 1873 he co-founded his own company with George Seabury for plaster. In 1876, Johnson visited the World's Fair of International Medical Congress, where he listened to Dr. Joseph Lister explain his radical, new procedure "antiseptic surgery". While many doctors were skeptical, Johnson was convinced that it was the future of medicine. His aspiration came from the fact that the Civil War deprived 720,000 Americans lives, the vast majority due to infection and disease. To limit the spread of infection, doctors performed limb amputations, and it significantly deteriorated quality of life of soldiers. These operations were performed by surgeons who did not wash their hands or clean their tools between patients, thus infection was common and often fatal even though the injury itself was not necessarily fatal. Based on this serious situation, Johnson aspired for helping those lives with sterile products. Inspired by Lister's antiseptic methods, Johsnon parted ways with his business partner, Seabury, and started Johnson & Johnson in 1886 with his two younger brothers, Edward and James. Their company manufactured the world's first mass-produced sterile surgical supplies. The company was developed in New Brunswick, New Jersey with 14 employees: 8 women and 6 men. Today, the world headquarters remains in the same place. J&J produced sterile sutures, absorbent cotton, gauze and ready-made surgical dressings which contributed to decreasing infections rates and saving lives. The Johnson brothers soon discovered that manufacturing sterile supplies was not enough—they needed to teach doctors how to use them. In 1888, the company published Modern Methods of Antiseptic Wound Treatment, a how-to guide on antiseptic surgery. Itinerant salesmen traveled far and wide to distribute Modern Methods across the U.S. Within a matter of months, they had given out 85,000 copies to doctors and pharmacists. Modern Methods was hailed as a major contribution to the field. It also served as a sales guide for J&J products, which were listed among the back pages. The guide helped spread germ theory and antiseptic surgical methods. Just 13 years earlier, in 1875, surgeons had operated in street clothes and worked with unclean hands. By 1889, most surgeons had adopted Lister's methods. They operated in sterile robes. Here, a modern surgical team wears white uniforms and uses sterilized tools. J&J helped to make sterile surgery a reality. Since its founding in 1886, the company has revolutionized the field of medicine, manufacturing the world's first mass-produced antiseptic medical supplies.

4.2.2. Phase2: Entry to Consumer Business

J&J took advantage of its sterilization technology and knowhow for consumers products. the company launched various pioneering products, such as first ever first aid kits, first mass produced women's sanitary protection products, and silk dental floss in 1890s. The famous JOHNSON'S® Baby Powder was launched in 1893, with J&J's intention to save lives for mother and babies. At the time, the majority of American women gave birth at home, often without the help of a trained midwife or with medical professionals untrained in sterile procedures. In an unsterile environment, infections were common and claimed the lives of one in ten infants and many mothers. To combat these statistics, J&J released its first Maternity Kit in 1894. The kit included sterile medical supplies to help with birth and the first days of life, as well as a science-based educational pamphlet for expectant mothers and their delivery aides. BAND-AID® brand adhesive bandages was launched in 1921, which was invented by one employee to consider taking care of his wife with cut during cooking, with gauze put in the middle of medical tape. Through these products' introduction, J&J broadened its business into the consumer market, and its distribution was expanded into pharmacies. Behind those consumer products, J&J's core technology and knowledge for sterilization and medication was embedded.

4.2.3. Phase3: Globalization

During World War I, the U.S. Military relied on Johnson & Johnson’s line of sterile products. These were used to treat wounded soldiers and prevent infection from muddy trench warfare, keeping soldiers healthy enough to help fight off infectious diseases. It was the beginning of J&J’s products to go overseas. The first global expansion began from Canada in 1919, but the expansion did not go rapidly thereafter. In the era of after World War I, there was an atmosphere in US public opinion that strongly supported isolationism. It came from the devastating damage due to World War I, and citizens in US thought that they were forced to be involved in the war unreasonably and got tragic harm. As such, even managers in J&J only supported an idea of limited expansion into domestic agencies and wholesalers. Robert Wood Johnson Jr, the son of the founder and later the president from 1932-1963, only believed that J&J should build international business, and he tried persuading the management board many times resulting finally in approval and visiting twelve countries to meet stakeholders in health care in each country. In 1924, Robert built the first factory at the suburb area of London, UK and initiated producing products outside US. Further global business expansion was made in South Africa and Mexico in 1930, Argentina and Brazil in 1937, European and African countries during 1930-1940s, Philippines in 1956, India in 1957, Japan in 1978, China and Egypt in 1985, Russia in 1992 and so forth.

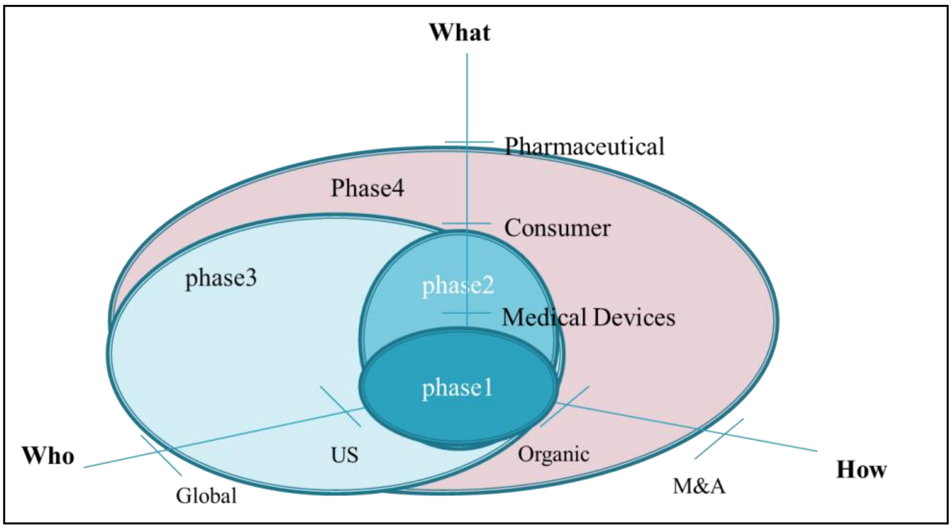
4.2.4. Phase4: Broaden Portfolio into Pharmaceutical Business

J&J expanded its business portfolio into pharmaceutical medicines. In 1959, J&J acquired McNeil Laboratories (known as Tylenol) in US and Cilag Chemie in Swiss. Moreover, the company acquired Janssen Pharmaceutica in Belgium in 1961 to strengthen its business in pharmaceutical portfolio. The company continued to grow its pharmaceutical business portfolio by organic new product launches as well as strategic acquisitions. While broadening into pharmaceutical business, the company fortified the existing medical devices and consumer business portfolio through M&As. It includes RoC S.A. in 1993, Neutrogena in 1994, and consumer business segment of Pfizer in 2006 for consumer portfolio, and Cordis in 1996, DePuy in 1998 and Synthes in 2012 for strengthening or expanding business within medical devices portfolio.

Section 3. CONTINUOUS GROWTH

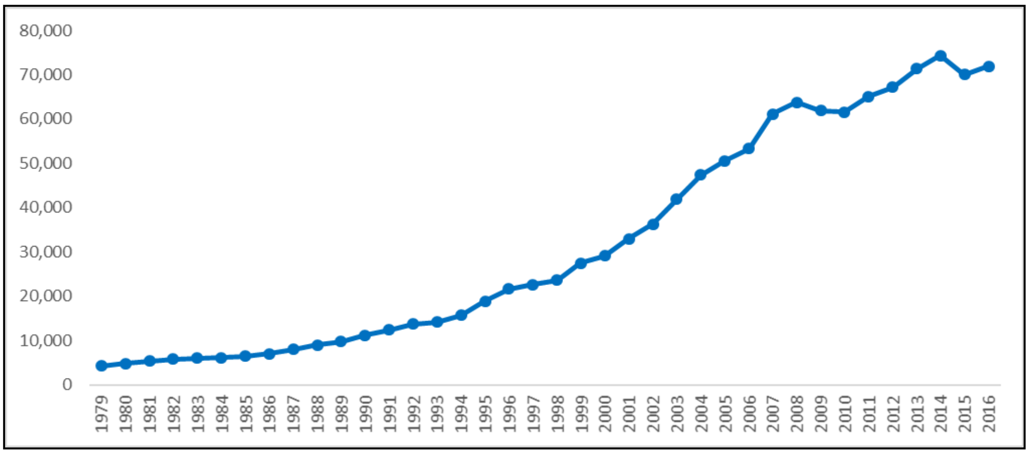
As seen in the history in SECTION2, J&J has been expanding its business in terms of globalization and business segment, but focusing consistently on the healthcare business from foundation in 1886 (Figure 8). What is remarkable in J&J is not just the history over 130 years, but the performance. Figure 9 shows J&J's sales trajectory from 1979 to 2016, which has been continuously growing. In addition, the stock price has also been following similar trend with sales, and its growth is far above other health care industry, DOW and S&P500 (Figure 10). Given its outstanding performance all the way, it must be worth analyzing how J&J has been implementing dynamic capability to achieve a series of temporary competitive advantage.

Figure 8: Business Expansion of J&J



Source: Author

Figure 9: J&J Sales Trajectory (Mil USD)



Source: SPEEDA

Figure 10: Stock Price Growth Trajectory (J&J vs Health care, Dow, S&P500)

Source: REUTERS

CHAPTER 5. ANALYSIS OF JOHNSON & JOHNSON'S CONTINUOUS GROWTH

Section 1. METHOD

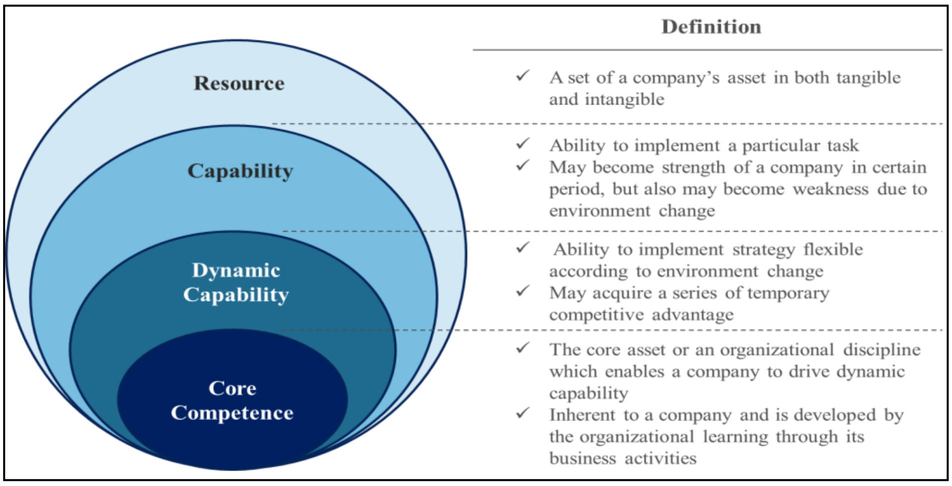
5.1.1. Era Analysis

In order to analyze key drivers of J&J's continuous growth, era analysis was conducted as follows; first, ten pharmaceutical companies including J&J were identified by three criteria that total sales value is ranked within top ten in 2016, the yearly sales trajectory can be confirmed from 2000, and the sales from pharmaceutical business segment accounts for the largest part of total company sales. Screening base on the three criteria, the following ten companies were identified: J&J, Pfizer, Roche, Novartis, Sanofi, Merck, GSK, AstraZeneca, Eli Lilly, and Bristol Mayers Squibb. Second, annual sales growth % compared with 2000 was confirmed through 2016, which uncovered the year of apparent trend change. Third, according to the year that was identified as the point of change, key events were confirmed that have contributed mainly to the change. Investigating with those four steps make it possible what J&J is different from other companies with regards to the way of growing.

5.1.2. Dynamic Capability Framework Analysis

Through what was identified with era analysis for J&J's key drivers for continuous growth and the difference with other companies, Dynamic Capability Framework analysis was conducted so as to clarify how J&J is achieving continuous growth and keeping a series of competitive advantage from DCF point of view. The analysis was divided into each component of DCF as sensing, seizing and reconfiguring, and each of the three has key execution factors. Then J&J's key activities were analyzed applying to those items. Further, J&J's core competence was extracted through DCF analysis which enables J&J to achieve dynamic capability. For clarification of terminology, core competence in this thesis is defined as literally the core element of a company's ability to drive dynamic capability. Thus, it premises that a company's dynamic capability cannot be accomplished without core competence at the very core of a company's ability in this context (Figure 11).

Figure 11: Definition of Resource, Capability, Dynamic Capability and Core Competence



Source: Modified from Ikegami (2016)

5.1.3. Activity System Analysis

Based on core competence of J&J extracted from DCF analysis, it was crystalized by Activity System, the concept originally articulated by Porter (1996). Porter uses it to capture the strategy of a business unit, identifying elements of the strategy which differentiates from rivals and achieve competitive advantage and connecting them with lines which represents relationship on how they reinforce with each other. Lafley and Martin (2013) adapt Porter's Activity System in a way that capabilities substitute for strategic themes and the relationship among capabilities are expressed in connected lines to show how they reinforce respectively. For analysis of J&J's core competence, the thesis adopts the latter definition and scrutinizes how each core competence of J&J relates together and enables dynamic capability.

5.1.4. Relationship Analysis of Strategy and Core Competence Development

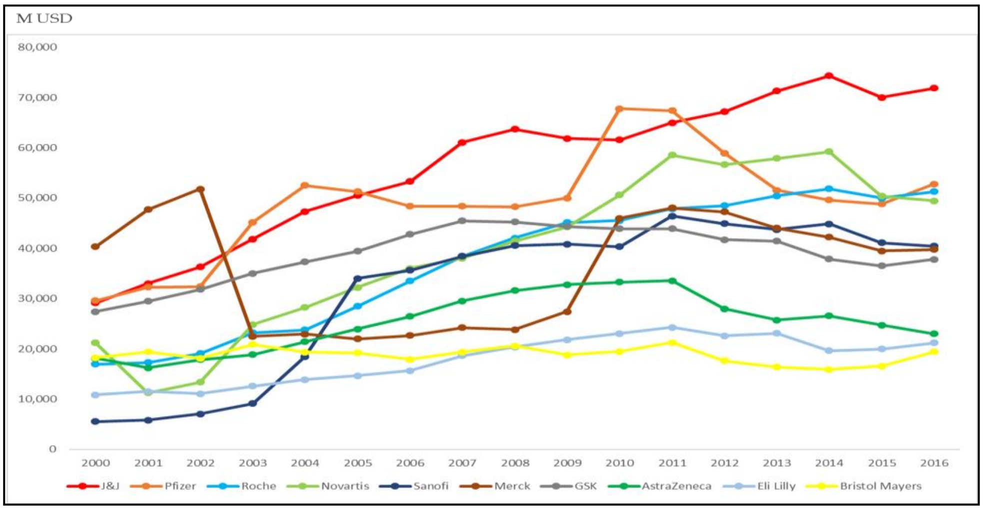
Once the relationship of core competence in J&J was captured in Activity System, the analysis moved to the final step to look into the relationship of strategy and core competence development, making sure how strategy built and reinforced core competence and vice versa. It would be meaningful to attempt to uncover its relationship because the result may have implications for a company on how it should start thinking about strategy and core competence to conduct dynamic capability, which in the end leads to a series of temporary competitive advantage. Therefore, the last analysis refers to revisiting J&J’s strategic history and investigate how its core competence was created and nurtured to the extent that drives J&J’s dynamic capability.

CHAPTER 6. RESULTS

Section 1. KEY DRIVERS OF JOHNSON & JOHNSON'S CONTINUOUS GROWTH

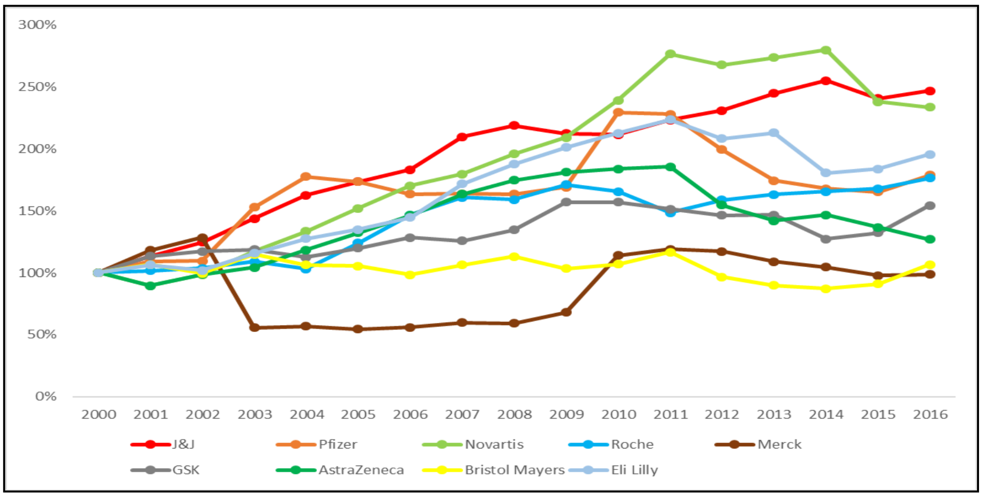
First, based on ten identified pharmaceutical companies, yearly sales trend was confirmed from 2000 to 2016 period (Figure 12). The graph shows that J&J has been steadily increasing sales value and leading the industry with approximately 70 billion USD, followed by Pfizer, Roche and Novartis with around 50 billion, and Sanofi, Merck, and GSK with 30-40 billion, and AstraZeneca, Eli Lilly, and Bristol Mayers Squibb with 20 billion class. Second, yearly sales growth trend was analyzed in 2000 vs following years until 2016 (Figure 13). Sales growth of Sanofi was excluded from the graph as the sales has grown significantly in a short period to be over 600% vs 2000 and disturbs the visual for analysis.

Figure 12: Companies' Sales Value Trajectory from 2000 to 2016



Source: SPEEDA (Local currency was converted into USD)

Figure 13: Companies' Yearly Sales Growth % from 2000 vs Following Years



Source: SPEEDA(Conversion was NOT applied for local currency)

It is interesting that some companies have the growth trend in a certain pattern, and others have otherwise. Then, era analysis was conducted based on the growth trend of each company to see what made it draw such a line (key events for growth of each company are listed in APPENDIX 1). It was found out that the patterns can be categorized into the following three.

1. Launching new blockbusters seamlessly: This pattern is characterized by continuous new product launches which grow to be blockbusters (more than 1 billion USD sales). It can also be seen that the growth trend goes up gradually, and the impact of down growth is relatively small to the contrary. The reason for this tendency lies in the characteristics that steady launches of new products minimizes the downside risk of patent expiration. Hence, the product portfolio consisting of total sales have diversity. The pattern is most applicable to J&J and Novartis (for Novartis, sharp growth drop in 2015 attributed to sales decrease of Alcon, which sells contact lenses, and Sandoz, which covers for generic drugs). For

example, J&J's top 5 selling products consist of 23.6% of its total sales, and Novartis's ones cover 24%. It is true that both J&J and Novartis faced sales down due to patent expiry in a few years, but its impact was limited within -5%.

2. Depending on a few "super" blockbusters: The growth of this pattern comes mainly from big blockbusters among them. Eli Lilly, Roche, GSK, AstraZeneca, and BMS apply the most to the pattern. These companies tend to have the product portfolio that a few super blockbusters account for substantial percentage of total product sales. In addition, growth tends to continue as long as those block busters are secured by patent right, but steep sales drop is seen once they encounter patent expiry. For example, Eli Lilly has grown its sales by +8.6% CAGR from 2003 to 2011 with major products such as Zyprexa and Cymbalta, but it faced rapid sales decrease as -7% in 2012 due to Zyprexa patent expiry (Zyprexa sales in 2011 reached 4,622 million USD covering 19% of total sales, and the sales in 2012 dropped to 1,701 (-63%) in just one year). Likewise, Cymbalta lost its exclusivity and decreased -15% of total sales in 2014 (Cymbalta sales in 2013 reached 5,084 million USD covering 22% of total sales, and the sales dropped to 1,615 (-68%) one year later). GSK achieved growth during 2005-2009 with a new blockbuster Advair. In 2009, there was also an increasing demand for vaccine product for influenza pandemic, which contributed to augmenting the company total sales +16%. 2014 was a tough year for GSK with decreasing

total sales by -13% due to the patent expiry of Advair. AstraZeneca has increased sales during 2003-2009 by +9.1% CAGR thanks to Crestor, Seroquel, Nexium and Symbicort. Those four drugs accounted for 60% of total company sales in 2011. In 2012 and 2013, the sales went down significantly due to those patent expiries, impacting -23% of total sales in 2013 vs 2011. BMS had two blockbusters, Plavix and Abilify, and the sales of the two in 2011 reached about 10 billion USD occupying 46% of total BMS product sales. By the end of 2014, however, those products have faced patent expiry and the sales dropped significantly to 2,278 million USD, impacting -25% of total BMS sales from 2011. Only Roche is enjoying relatively stable growth thanks to expanding indications of existing oncology blockbusters without patent expiry plus seasonal demand for influenza vaccine Tamiflu, but the company may trace the same path with others since over 40% of its sales consists of just three oncology products with patent expiry in coming years.

3. Huge M&A: This pattern shows tremendous sales growth in a very short period through huge M&A deals. Sanofi, Pfizer and Merck go to this type. Sanofi-Synthélabo, the former company name of Sanofi-Aventis, bought Aventis in 2004 for 65 billion USD and its sales skyrocketed from 8,048 million EURO to 27,311 in 2005, which was +339% growth. The company also acquired Genzyme in 2011 for 20 billion USD, and increased sales +10% vs previous year (the company name was changed into Sanofi in this year). Pfizer acquired

Warner–Lambert in 2000 for 111.8 billion USD with +83% sales growth from 1999. The company also bought Pharmacia in 2003 for 60 billion, resulting in +40% sales growth. Further M&As continued in 2010 when the company bought Wyeth for 68 billion with +36% sales growth, Hospira for 15.2 billion in 2015 and Medivation and Anacor in 2016 for 14 and 5.2 billion each. Merck acquired Schering-Plough in 2009 for 41.1 billion USD contributing to +67% sales growth in the next year. The company on the other hand divested Medco Health, a pharmacy service company, which decreased substantial sales to -57% in 2003. While those M&As augmented sales quickly by obtaining existing key products which target companies had, they cannot evade sales down by patent expiry. Indeed, in 2012 Pfizer faced 13% down growth by erosion of generic entry for Lipitor patent expiry and the negative impact lasted following three consecutive years. Lipitor was originally the product of Warner-Lambert, selling 12,886 million USD at its peak in 2006. It is also of note that the three companies have in common that they suffered from low growth trend for years after M&A, which is mainly due to the offset of sales growth for products by acquired companies and down growth for ones with loss of exclusivity in parent companies.

It was found out through era analysis that J&J has the characteristics for its growth by launching new products relentlessly. For further investigation of J&J's uniqueness, the following two key questions are raised: 1) How much value do those new products have in the market? and 2) How can J&J achieve such continuous product launches? To answer the first question, drug sales ranking in the total pharmaceutical market in 2016 was confirmed, and the data shows 122 blockbuster products in 2016 and J&J proves to be No.1 company with the largest number of blockbusters ranked, 11 products (according to Monthly Mix Jul, 2017). It is also remarkable that each blockbuster is not necessarily big compared with others, but as a set of 11 products, they contribute to J&J's growth. Moreover, J&J has the largest number of R&D pipelines for expected blockbusters in 2022 among companies compared in the era analysis (Figure 15). Those data support the result of era analysis of J&J that the company launches new products constantly and the sum of the value of products rather than one super blockbuster leads to continuous growth with minimizing substantial sales down risk of patent expiries by the super blockbuster.

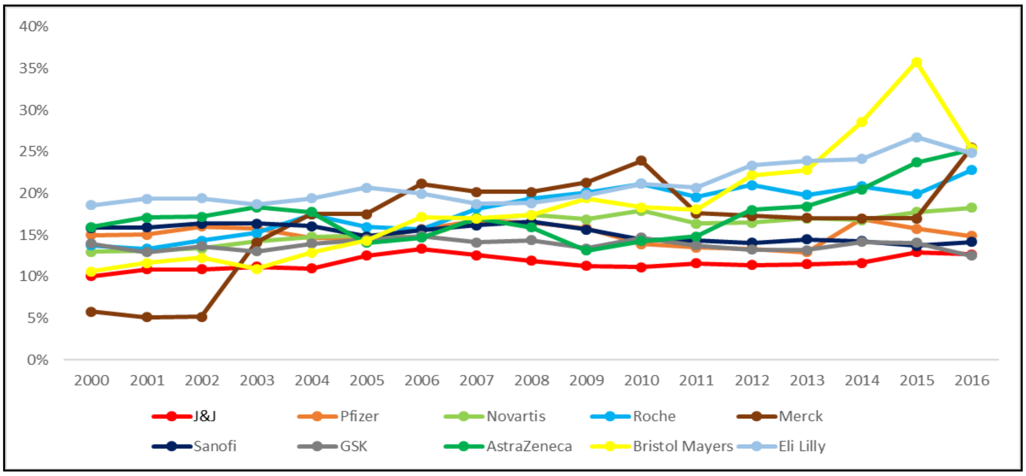
Figure 15: Top 20 Most Valuable Product Pipeline in 2022 (Based on NPV)

Rank	Product	Company	Phase	Pharmacological Class	NPV (M USD)
1	Aducanumab	Biogen	Ph3	Anti-beta-amyloid MAb	10,199
2	Apalutamide	J&J	Ph3	Anti-androgen	9,839
3	Abemaciclib	Eli Lilly	Ph3	CDK 4&6 inhibitor	8,840
4	Rova-T	AbbVie	Ph2	Anti-delta-like protein 3 (DLL3)	8,486
5	Ozanimod	Celgene	Ph3	S1P 1&5 modulator	8,174
6	Axicabtagene Ciloleucel	Kite Pharma	Filed	CART	7,427
7	Bictegravir/F/TAF	Gilead Sciences	Ph3	NRTI & HIV integrase inhibitor	7,178
8	Semaglutide	Novo Nordisk	Filed	GLP1 agonist	6,943
9	Guselkumab	J&J	Filed	Anti-IL-23 MAb	6,392
10	ABT-494	AbbVie	Ph3	JAK 1 inhibitor	6,285
11	Emicizumab	Roche	Ph3	Anti factor IX/X bispecific MAb	6,129
12	Epacadostat	Incyte	Ph3	IDO 1 inhibitor	5,866
13	Sirukumab	J&J	Filed	Anti-IL-6 MAb	5,423
14	SHP643	Shire	Ph3	Anti-plasma Kallicrein MAb	5,327
15	Elagolix	AbbVie	Ph3	GnRH antagonist	4,956
16	CTL019	Novartis	Filed	CART	4,794
17	Shingrix	GSK	Filed	Herpes zoster vaccine	4,321
18	Tremelimumab	AstraZeneca	Ph3	CTLA 4 MAb	4,302
19	Glecaprevir & Pibrentasvir	AbbVie	Filed	HCV NS3/4A & NS5A inhibitor	4,066
20	Lampalizumab	Roche	Ph3	Anti-complement factor D MAb	4,063

Source: Evaluate Pharma

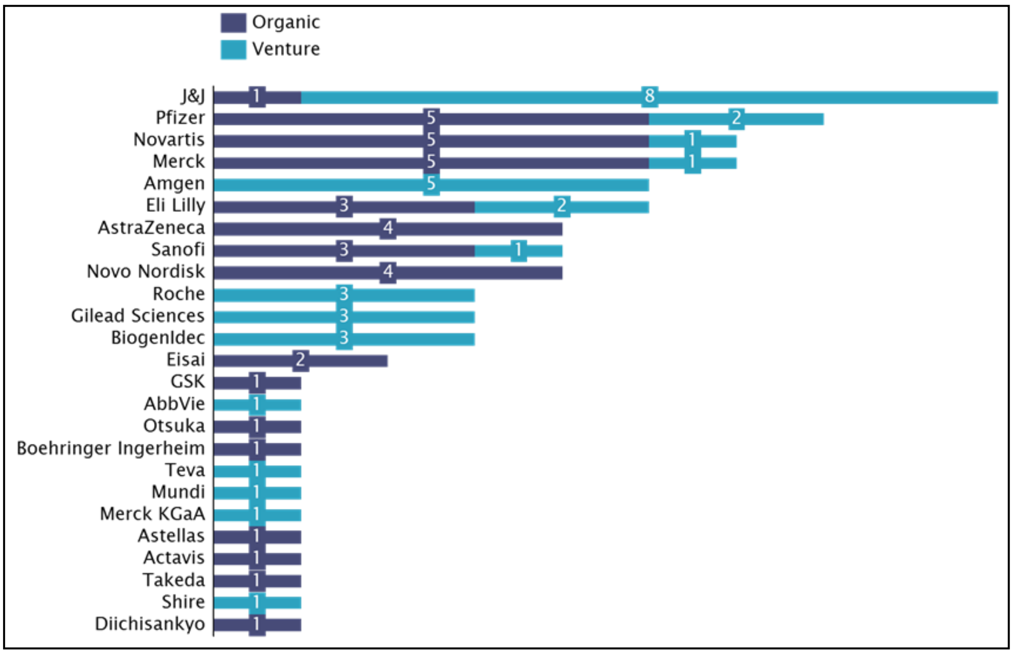
Now that the fact of J&J's growth pattern has been confirmed, the issue goes to the second question on "How" J&J can make it come true. In order to answer the question, facts are presented. First, Figure 16 depicts investment ratio for R&D to companies' total sales, which clearly indicates one interesting feature: J&J has been running with the smallest R&D investment ratio. Second, the origination of top 50 products by company during 2009-2014 shows that J&J has 8 out of 9 products from acquired bio ventures (Figure 17). Indeed, J&J is conducting many M&A deals toward venture firms, and data shows that the company is ranked in the second among all pharmaceutical companies in 2015, with 62 deals which are far more than the followings (according to IMS PharmaDeals Review of 2015). On the other hand, another data indicates that J&J does not invest so much in M&A deals in terms of value, and the company is in fact ranked in 6th among compared companies (Kameda, 2016). Taking all the facts into consideration, J&J takes advantage of a number of tiny M&A deals for small ventures instead of focusing on organic R&D or big M&A deals, and many products come out through those ventures, later growing to be blockbusters.

Figure 16: Trajectory of R&D Investment Ratio to Sales



Source: SPEEDA

Figure 17: The Number of Top 50 Sales Products by Origination (2009-2014 Total)

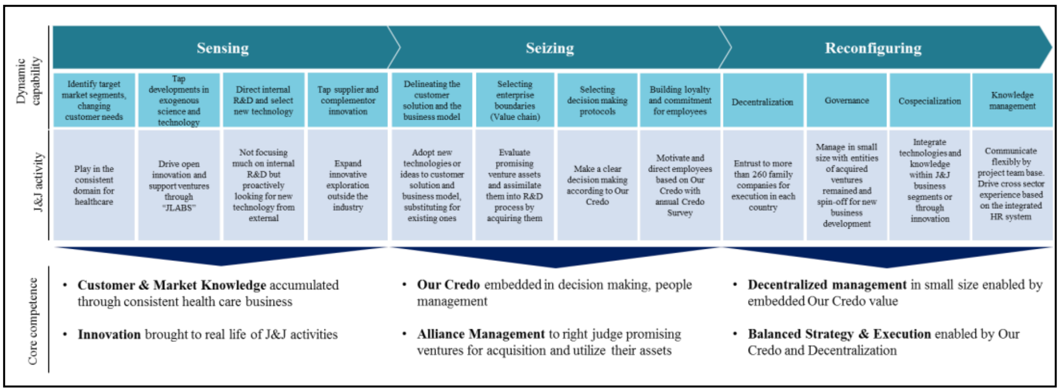


Source: Modified from Kameda (2016)

Section 2. Core Competence Extracted Through Dynamic Capability Framework

Given that J&J achieves a series of temporary competitive advantage which leads to long term growth by launching blockbusters via a number of acquired small ventures, how such implementation is viable analyzed from DCF perspective. The result is shown in Figure 18, where J&J's conduct is applied into the framework which articulates the three components as sensing, seizing and reconfiguring, and each of which has key execution factors.

Figure 18: DCF Analysis for J&J's Continuous Competitive Advantage



Source: Developed by author based on DCF

First, regarding Sensing, DCF presents key factors such as identify target market segments and changing customer needs, developments in exogenous science and technology, direct internal R&D and select new technologies, and supplier and complementor innovation. For those key factors for sensing, J&J has been playing consistently in the healthcare domain and therefore is keen to what is required for unmet medical needs in the industry. The company is committed to open innovation for exploring new and promising technologies or seeds outside the company, and founded J&J open innovation centers in Asia Pacific, Boston, California and London. J&J also sets a platform named "JLABS" at 7 locations in the world (San Diego, San Francisco, South San Francisco, Cambridge, Mass, Houston and Toronto), where more than 140 various venture firms reside and are being "incubated" by J&J. Those venture firms are supplied with J&J resources such as knowledge and the network all over the world. Each JLABS has the authority to select venture firms to incubate based on the common criteria that the new technology or knowhow they have matches one of the three J&J business segments. Even when a venture does not meet the criteria but has some uniqueness, JLABS staff keep in touch with the firm for communication. JLABS intends to explore new opportunities from very early phase of R&D unlike other competitors which take in-licensing strategy for some pipelines usually in the phase of clinical trials. It also aims to find promising "candidates" among venture firms for M&A investment, and even if a firm is not applicable to the candidate, JLABS keeps support for the firm to accomplish what it aims in the collaboration and "graduate" from

JLABS. Even if a venture firms cannot achieve its goal, JLABS permits the failure as it premises that a failure is inherent to innovation. JLABS plays an important role in knowing both tangible and intangible assets of venture firms (including who works in the firm), and it acts as identifying and communicating with promising venture firms quicker than competitors, and enhancing the probability of success for M&A. It is the critical uniqueness of J&J activity, and indeed there are no other companies but J&J which have an incubation laboratory by themselves. While J&J takes advantage of open innovation, its internal R&D is of course conducted. What should be important is that J&J strikes a well balance between external R&D exploration and internal R&D exploitation. The last factor of sensing capability, supplier and complementator innovation, is meant by Teece (2009) that companies must search the core as well as to the periphery of their business ecosystem, and search must embrace potential collaborators-customers, suppliers, complementors-that are active in innovative activity. In this context, the scope of J&J's innovation is covered to the suburbs. For example, in medical devices segment J&J collaborates with IBM and Apple for the new service for patients. In the alliance, J&J utilizes Watson Health Cloud provided by IBM to develop mobile-based coaching system to support patients before or after the surgery for joint replacement and spines. Watson Health Cloud uses data from HealthKit developed by Apple which gathers personal healthcare record data from Apple watch, health check apps or fitness devices. Through this innovation, J&J aims to provide personalized medical services to patients.

The second component, Seizing, is made up of four factors as delineating the customer solution and the business model, selecting enterprise boundaries (Value chain), selecting decision making protocols, and building loyalty and commitment for employees. For the first and second factor, J&J adopts new technologies or ideas to customer solution and business model, and sometimes substitutes them for existing ones. The personalized medical services explained in sensing part is one of examples. When it comes to the pharmaceutical business segment, J&J proactively adopt promising R&D seeds from acquired venture firms, and sometimes replace them for internal R&D projects. This activity may include dilemma or cannibalization for decision between the two, but J&J dares to conduct and reflect the output through open innovation on its real-life business activities. The ability for the decision relates to the third factor, selecting decision making protocols. Teece stresses that a manager's ability to override certain "dysfunctional" features of established decision rules and resource allocation processes is one of crucial parts in DCF. According to Teece, this comes from the inclination of the top management team that top managers make a decision for balance and compromise. Some board members may even attempt to prevent from welcoming innovation in the organization in the fear their status quo would be threatened by something new and radical. The existence of multiple procedures, current capabilities, and routine of management may also promote decision making bias. That is way selecting decision making protocols is important, and J&J has one universal protocol: Our Credo (the statement is put in APPENDIX 2). The philosophy of J&J consists of four "Responsibilities", and the responsibility for customers is put in the highest priority, followed by employees, communities, and stockholders at last. There are also 21 "Must Dos" written in the statement, and it is clarified to develop innovative programs, and to experiment with new ideas. In other words, Our Credo defines criteria and priority for decision making. Indeed, J&J cherishes Our Credo and put it in the core of the company's decision making for not only the top management level but each business segment of operational companies throughout the world. As for the last factor of seizing, building loyalty and commitment for employees, J&J makes full use of Our Credo to motivate and direct employees. The management team frequently communicates with employees all over the world via e-mail or video to remind how important Our Credo is for daily business conducts and decision making, often introducing real world cases J&J has recently encountered. Along with the top management, each family company holds a town hall meeting per year and there the case study is implemented toward employees. The case study depicts the situation of real life business decision making, and urges them how they must think and determine their conduct according to Our Credo. It includes topics such as ethical corporate culture and health care compliance. Moreover, J&J conducts an annual "Credo Survey" to all family companies in the world to make sure if employees feel strategy from the corporate to the business unit level is properly executed, and more importantly it is healthy and aligned with four responsibilities of Our Credo. The survey requires 100% participation of all the family companies, and the top management team and managers in operational countries remind many times for its completion. The result is analyzed and shared with all employees, and they can compare the result of their team with other organizational level from business segment and country level. Employees discuss with colleagues in the absence of their managers to understand the result and how it should be improved, and share with managers. Managers then contemplate the action plan and carry it out. Through those activities, Our Credo is knitted in every single organization in J&J and family companies, which is the core culture of J&J.

The last component, Reconfiguring, is the ability that drives recombine and reconfigure assets and organizational structures for execution of what a company seized from sensing phase. For reconfiguration, four factors are identified as decentralization, governance, cospecialization, and knowledge management. Decentralization is as good as a synonym for J&J. The company has long been managing based on decentralization since the initial stage of its globalization, when Robert Wood Johnson insisted sustaining speedy decision making even in the swelling business size and the organization. J&J has more than 260 family companies in three business segments in the world, and while corporate and three business segments strategy is integrated in the headquarters level, family companies are authorized to execute their business in a way they think is the best depending on the business environment in a region. For example, a local company can determine whether sales and marketing for a newly upcoming drug should be standalone by the company, having co-promotional agreement with some partner company, or out-licensing according to the company's resources, competitive situation or prevalence of the disease in that country. In addition, as Teece mentions the merit of decentralization for retaining flexibility and responsiveness of an organization, J&J leaves it to each family company for the organizational change better to execute based on the local environment. Hence, it is not necessarily the same organizational structure among countries although the business segment itself is the same. Apparently, it may cause inconvenience for communication among countries in the same business segment, but in fact it is not the case as communication is mainly by way of project team base. The governance of J&J is related in many parts to its decentralization management style. Its governance is characterized by small sized management aiming to retain prompt decision making within an organization. As implied from more than 260 J&J family of companies, J&J subdivides the organization size and the policy applies to venture firms acquired, or new business developments. Venture firms can keep their entity and pursuit their project, and for the case of a new business development J&J conducts spin-off into one startup. It is also of note that remaining in small size can enable J&J headquarters to divest the entity when necessary. For cospecialization, J&J takes advantage of three business segments to generate a new value. For example, the company launched Drug Eluting Stent (DES) named Cypher in 2003 for the surgery of ischemic heart disease. The product was developed by Cordis, a family company of J&J, and praised by physicians as big innovation in that the drug is applied in the stent to elute gradually after the stent placement to decrease the risk of stenosis. This innovation is made by cospecialization of assets or knowhow in Medical Devices segment and Pharmaceutical segment (In 2015 J&J divested Cordis to Cardinal Health, as a result of fierce competition versus following similar products launched after several years later of Cypher launch). Regarding the last factor, knowledge management, employees in each family company of J&J have the communication network. In detail, they organize a cross functional project team for a task such as a new drug introduction with counterparts in the world, and as a team they exchange information and solve issues. They usually have regular web meetings, and sometimes meet face to face. The network surely gives an opportunity for integrating and exploiting learning among employees in different countries. J&J also has the integrated system for human resources (HR). In the system, J&J is committed to talent development and conduct a job posting for three business segments. The company provides its job posting information in the intranet, where any kinds of jobs in recruitment is open to all the employees all over the world. For instance, if an employee in pharmaceutical segment in Japan has an aspiration for working in Medical Devices segment in US, he or she is permitted to apply for the position as long as the job is posted in the intranet. For HR evaluation criteria, J&J cherishes “Leadership Imperatives” which the company defines four types of leadership as Connect, Shape, Lead and Deliver. The criteria are common in all the three business segments in all the countries. The two integrated HR systems, job posting and common leadership criteria, ensure that employees can move flexibly to another country or business segment, and knowledge is intermingled. Indeed, J&J promotes employees to have cross sector experiences, and it is one of the uniqueness of J&J. For networking with external organizations, it goes without saying that J&J's open innovation system and JLABS play a key role.

Analyzing J&J's activities according to the three components of DCF, it was found out that J&J does practice sensing, seizing and reconfiguring with its unique capabilities, and orchestrates all the processes to achieve a series of temporary competitive advantage. While the orchestration of the three processes is the essence of DCF, how to implement and why it is possible is what the theory cannot tell because the approach may depend on capabilities which a company has. Now that how to implement J&J's dynamic capability is uncovered, the question proceeds to why. Then, core competence of J&J which makes its dynamic capability come true was extracted from each process.

First, in the sensing process, two core competence were identified: customer and market knowledge, and innovation. The former derives from the feature of J&J that the company has been consistently playing in the healthcare domain as medical devices, consumer and pharmaceutical. Although the industries the company plays are three in a narrow sense, each industry has to do with each other in terms of healthcare and customer and hence it is not conglomerate. J&J has accumulated customer and market knowledge from the foundation in 1886, and it contributes to J&J's dynamic capability that it is keen to sensing customer changing needs. Innovation is another core competence of J&J as the company successfully takes advantage of it for sensing phase and reflect it on the real-life business. The company has management system for innovation through setting open innovation centers, incubating venture firms, and absorbing promising new technology or ideas into its real business. The commitment for innovation is extraordinary.

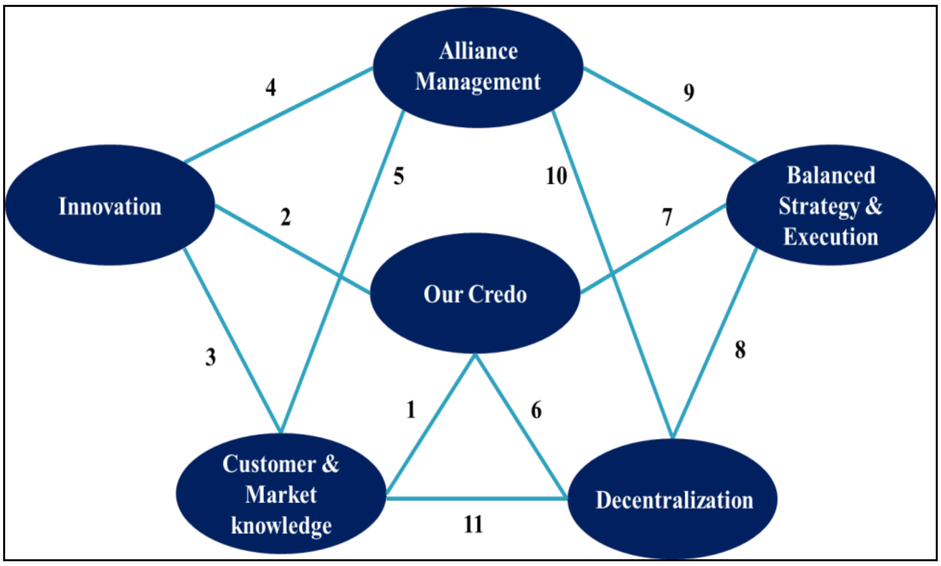
For the second seizing process, other two core competence enable J&J to implement its dynamic capability. Our Credo acts as the core driver for decision making and people management in J&J, and it is deeply embedded in the organization. The company has system to penetrate the principle into all family companies and employees in the world and reflect on their daily tasks. Another competence is alliance management, which ensures appropriate judgement for acquisition of promising venture firms for future value creator.

Core competence of J&J for the last reconfiguring process are decentralized management and balanced strategy and execution. J&J conducts decentralized management in a way that each family company runs in small size, and each of them is connected under shared value of Our Credo. Balanced strategy and execution is another J&J's core competence coming from Our Credo and decentralization, which validates the company's reconfiguring activities with flexibility.

Section 3. ACTIVITY SYSTEM COMPOSED OF CORE COMPETENCE

Based on the six core competence of J&J which enable the company to implement dynamic capability, they were crystalized into Activity System (Figure 19). Each core competence is connected with lines and formed into the set of J&J's uniqueness, and every single of core competence is indispensable for J&J's activities today. The interpretation of 11 lines are written as below.

Figure 19: J&J's Activity System



Source: Author

1. Our Credo clarifies in the statement that doctors, nurses and patients are customers of J&J,

which defines its target market as healthcare and consistent domain they play. Customer and market knowledge is nurtured thanks to this determined company's aspiration.

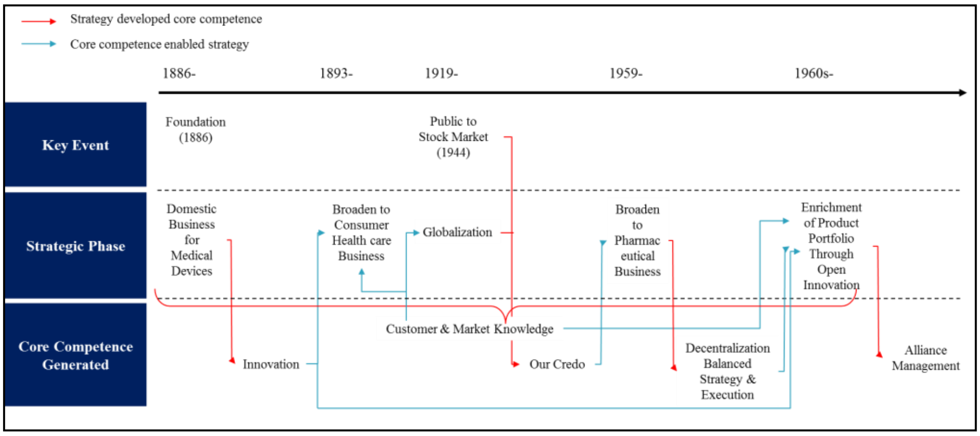
2. The sentence "We must experiment with new ideas" in Our Credo endows an incentive for innovative activities and company's commitment to offering a new value.
3. Accumulated customer and market knowledge senses unmet medical needs and determines direction for innovative exploration. The discovery of new technology or seeds explored through innovation exploits and deepens customer and market knowledge to the contrary.
4. Incubation-based open innovation gives an opportunity to get in touch with many venture firms with tangible and intangible assets, which broadens the variety of choices for promising venture firms to acquire as well as enabling quick decision making.
5. Accumulated customer and market knowledge enhances the ability of connoisseur in selecting candidate venture firms and their assets for acquisition which may generate future value.
6. The system or discipline of penetrating Our Credo into all family companies of three business segments in the world harnesses management with decentralization under the shred value of the principle.
7. Striking a balance between strategy and execution is secured by annual Credo Survey, which works as vigilance if the organization is healthy in terms of strategy and execution based on four responsibilities of Our Credo.

8. Decentralization permits the balance of strategy and execution. While strategy of corporate and business segment level is integrated into the top management team in J&J worldwide headquarters, execution is localized by region so that it can be carried out in a desirable way.
9. The new technology or seeds that venture firms have is obtained by acquisition, which is aligned with the integrated strategy in corporate or business segment level. The acquired assets are introduced to local execution for clinical trials according to local regulations.
10. Venture firms after acquired remain their entity and continue their research under the decentralized management.
11. Decentralized management leads to accumulation of customer and market knowledge in each region and business segment. The knowledge can be referred to understanding and sensing unmet medical needs for further exploration activities.

Section 4. How Core Competence is Developed

Last but not least, the analysis proceeds to uncover how the core competence of J&J was developed. The result was obtained through revisiting the history of J&J and analyzing the relationship between strategy taken and core competence developed (Figure 20). It clearly shows that strategy has created core competence and carved its characteristics, and core competence in turn helped to develop new strategy. For example, when J&J initiated its business, the company proactively adopted the new technology from external into the innovative product, “sterile plaster”. In other words, the company did not have knowhow to launch the product with its own resources, but its aspiration for saving people’s lives drove leveraging external environment. The strategic intent then nurtured J&J's innovation competence, which later broadened its business to consumer segment and introduced many "first in market" innovative products such as emergency kit, silk dental floss, baby powder and adhesive bandages. The competence of innovation also enables J&J to implement current open innovation strategy.

Figure 20: Relationship of Strategy and Core Competence Development



Source: Author

Our Credo was developed during the strategic phase of globalization, when J&J expanded into regions outside US. Along with its expansion, J&J had to conduct management of subsidiaries in the world with localized employees, and it increased the need to make the company's philosophy in documentation. It was also the time when J&J became a publicly held company and opened its stock to New York Stock Exchange in 1944. Under such situations, the president Robert Wood Johnson Jr. created Our Credo so that J&J can have the universal shared value in all companies in the world, as well as declaring to the stockholders and the market that J&J would not change the company's management philosophy. At that time (even now) putting customers the very first ahead of stockholders was uncommon, and in fact some J&J board members even objected to Our Credo as the responsibility for stockholders was put in the last. Robert Wood Johnson Jr., however, disagreed vehemently saying "If we put the customer first and follow through on our other responsibilities, I assure you that the stockholders will be well served. And, don't forget, I am the largest stockholder".

He actually wrote a book in 1935 for business leaders in US to express his idea for management:

> Out of the suffering of the past few years has been born a public knowledge and conviction that industry only has the right to succeed where it performs a real economic service and is true social asset. Such permanent success is possible only through the application of an industry philosophy of enlightened self interest. It is to the enlightened self interest of modern industry to realize that its service to its customers comes first, its service to its employees and management second, and its stockholders last. It is to the enlightened self interest of industry to accept and fulfill its share of social responsibility.

Although the time was in the great recession and business leaders did not follow the idea, Robert Wood Johnson Jr. strongly believed the concept of customer first before developing Our Credo, and he even told other board members and employees of J&J when Our Credo was introduced that those who do not endorse it could look for employment elsewhere. Based on his aspiration for who J&J is, the philosophy of Our Credo was spread in the organization and retained all the way to the current management through the system such as Credo survey and Credo town hall meeting. Core competence of Our Credo that its shared value is penetrated and maintained as a system in all employees helped the strategy to broaden the business portfolio into three with small sized management and with balanced strategy and execution. The strategy to take advantage of open innovation is validated by the philosophy of innovation from the foundation, decentralized management, balanced strategy and execution, and customer and market knowledge. And the strategy supported by those core competence generates the ability of alliance management. Customer and market knowledge has ever been nurtured throughout J&J's business trajectory from the foundation as the company has devoted itself to the healthcare business domain (in precise, J&J once created a company through the internal R&D in 1961 named Devro which produced sausage casing in mind that collagen inside casing would be beneficial to its healthcare purpose. Collagen as its ingredient derived from the technology from a suture from Medical Devices segment, but Devro was divested in 1991 after the decision to quit the suture product). It is obvious that the nurtured competence of customer and market knowledge ensured J&J's strategy to broaden business segments within the healthcare domain, and open innovation for sensing promising venture firms. The strategy in turn deepened the competence.

As seen in a series of relationship between strategy and core competence through J&J's history from 1886 to the present, strategy creates core competence, and core competence then enables strategy for the next step. Once the core competence was generated, J&J nurtured and enforced it throughout its activities such as customer and market knowledge, and the set of core competence gifts J&J to exert its dynamic capability.

CHAPTER 7. DISCUSSION

Section 1. HOW SHOULD A COMPANY ACHIEVE CONTINUOUS GROWTH?

DCF analysis discovered how J&J achieves a series of temporary competitive advantage and continuous growth. The company does practice and orchestrate each sensing, seizing and reconfiguring process of DCF. It would be valuable that the effectiveness of DCF was confirmed by the in-depth analysis of J&J's real-life case for continuous growth.

J&J's DCF is based on the activity which coheres to healthcare domain all the way but continues to be competitive and lead the market. Playing in the consistent domain may include the risk that a company's resources would be fixed to the level they cannot be flexibly reformed when it is necessary to deal with environment change. Henderson (2006) points out that the problem of "competence trap" attributes to the organizational proclivity. In that sense J&J's DCF should be remarkable since the company evade falling into such a trap by exploring external opportunities which would lead the future market and assimilating within its organization. The company on the contrary take advantage its customer and market knowledge accumulated thanks to playing long time in the same business domain to identify the new opportunities and promising venture firms for acquisition in the open innovation activity.

While J&J plays in the same field, others may achieve dynamic capability by restructuring the business domain. A good example is General Electric (GE), the company well known for changing business domains or portfolio aggressively with the method of Product Portfolio Management (PPM). Both the two are named as the great company by Collins (1994) for outstanding long term growth, but their approach for dynamic capability goes to the opposite. The result thereafter projects a different view; J&J continues growing, and GE stagnates. It suggests that implementing DCF itself is not sufficient, but "How" to implement is more of essence in the current business environment. Now, Environment, Social and Governance (ESG) investment and Corporate Social Responsibility (CSR) is in fashion all the more VUCA and hypercompetition go, and this situation clearly asks for "raison d'etre" of a company. Lessons learned from "Lehman Shock" and empowered consumers harnessed by digitization may contribute to the increase of its awareness. In addition, under VUCA and hypercompetition, a company may encounter unexpected competitors at any moment. Then a company should recognize even subtle changes of customer and market needs, and proactively explore the new opportunity from external as well as internal to prevent from being overwhelmed by the disruptive competition and more to lead the market with offering new value to customers and the market. Conducting such activities should require a company to deeply understand its customers and market. Based on those backgrounds, it is getting more critical than ever to understand customers and a market they play, which indicates more importance of sensing process of DCF to identify target market and changing customer needs. Martin (2010) insists that it be the age of "Customer Capitalism" taking over shareholder value capitalism showing that companies with customer capitalism which prioritizes customers' satisfaction first (He introduces J&J as representative) actually do better in terms of shareholder value than ones with shareholder value capitalism which prioritizes to maximize shareholders' value first. Martin (2016) also remarks below:

> Pursuit of shareholder value maximization does a crummy job of maximizing shareholder value. The reason is that it cannot be pursued directly. Shareholder value only grows when other things – like making customers happy, creating an environment for employees, being a great corporate citizen – happen.

What Martin states definitely duplicates what is stated in J&J's Our Credo. J&J brought the customer capitalism over 70 years ago when companies and societies suffered from the world great depression, and it is the reincarnation and quite suggestive that the idea is becoming paid attention from the great recession by Lehman Shock.

Section 2. WHY CAN THE COMPANY IMPLEMENT DYNAMIC CAPABILITY?

It was found out through the analysis of J&J's activity system that the set of core competence as the activity system has enabled J&J to implement its DCF. In addition, the analysis clarified that each core competence of activity system has been developed and fortified through a series of strategy, and the core competence in turn has enabled the company to develop next strategy. Behind its relationship, Our Credo as the company's core value and the very core of core competence has been directing the course of strategy and core competence development. In detail, Our Credo puts customers first in its business priority, and the renewal of strategy and core competence is triggered by this customer orientation.

The discovery poses an implication that a company should develop the mechanism to renew strategy and core competence based on its core value with customer orientation, which enables the company to implement DCF. Collins (1994) states the requirement to become a company with sustainable growth rests on the penetration of the company's core value in the organization. He explains that GE has the core value to create a leader inside the organization who can manage the company to change its business domain or portfolio with restructuring the organization. However, it seems that GE's core value does not lead its DCF in a way the company can retain continuous growth. The situation that J&J's core value successfully directs the development of strategy and core competence for continuous growth while GE does not although both the two have the embedded core value would support the implication.

As articulated, J&J's commitment to Our Credo is extraordinary. It is so much pierced into the organization because the company earnestly intends to do so. The company continues to invest in nurturing the core value to every employee through the system noted in the previous chapter, and it even refers to the story of "Tylenol" tragedy in 1982, when someone from external adulterated a fatal poison into capsules of Tylenol at pharmacies in Chicago, leading to deaths of seven people who had taken the capsules, and the company recalled all the products throughout US at the cost of 80 million USD according to the customers first philosophy of Our Credo. Schwartz (2013) explains ethical corporate culture consists of core ethical values, ethical leadership and ethical program, and J&J has been nurturing Our Credo by meeting those factors to the disciplined organizational core competence. It is just unlike other companies which declare CSR "plausibly". The commitment of J&J is much more of the discipline that "forces" employees to behave and exert their leadership for the business goal, which has been unchanged from the time when Robert Wood Johnson Jr. said in 1943 that those who do not endorse it could look for employment elsewhere. Collins (1994) expresses J&J’s enthusiasm as “cult-like” culture, and points out that great companies with long term growth have the tendency to enlighten the philosophy to employees and those who are not willing to adapt would be flicked off. J&J does require sheer observance to employees, and thus they owe the great responsibility. It would mean in turn that the employees watch closely behaviors of the company whether it conducts daily business according to Our Credo. J&J acts in conformity with what the company is committed all the more the company coerces its commitment to employees. Without it, the employees would not continue to hold loyalty to the company, and the company cannot retain the core value to drive the mechanism to renew strategy and core competence for continuous growth.

CHAPTER 8. CONCLUSION

The thesis attempts to uncover how a company should achieve continuous growth through a series of temporary competitive advantage in the era of VUCA and hypercompetition through real-life case of Johnson & Johnson. The result indicates that J&J has been achieving continuous growth through orchestrating DCF process of sensing, seizing and reconfiguring. Further analysis based on J&J's activity system reveals that the set of core competence ensures DCF implementation, and J&J's Our Credo is put at the core of core competence and acts as the adhesive to interrelate each core competence into J&J's activity system. The set of core competence has been generated by each phase of J&J's strategy, and the core competence in turn has enabled the company to develop next strategy.

The result of J&J's real-life case analysis implies how a company should achieve continuous growth, and implementing DCF, especially identifying changing customer and market needs in its sensing process should be effective in rapidly changing business environment. The result poses a further implication on why the company can implement DCF, and developing the mechanism to renew strategy and core competence based on the company's core value with customer orientation should be of essence.

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APPENDIX

APPENDIX 1: The Result of Era Analysis for Compared Companies

(J&J)

Year	Growth vs Previous Year	Key Event for Growth
2003-2006	+10% (Ave.)	• Growth of Cypher • Growth of Remicade
2007	+15%	Acquisition of Pfizer consumer business
2009-2010	-2% (Ave.)	• Patent expiry (Risperdal) • Fierce competition for Cypher
2011	+6%	New drug launches (Stelara, Simponi, Zytiga, Invega Sustenna)
2012	+3%	Growth of recently launched products
2013	+6%	Growth of recently launched products
2014	+4%	• New drug launch (Olysio) • Growth of recently launched products
2015	-5%	• New drug launch (Imbruvica) • Growth of recently launched products
2016	+3%	• New drug launch (Darzalex) • Growth of recently launched products

Source: J&J Annual Report

(Pfizer)

Year	Growth vs Previous Year	Key Event for Growth
2003	+40%	Pharmacia Acquisition (Pfizer acquired Warner Lambert in 2000 with +83% growth vs 1999)
2005-2006	-2% (Ave.)	Patent Expiries (Diflcan, Zithromax, Zoloft)
2010	+36%	Wyeth Acquisition
2012-2015	-13% (Ave.)	Patent Expiries (Incl. Lipitor)
2016	+6%	• Three acquisitions (Hospira, Anacor, and Medivation) • Growth of existing products

Source: Pfizer Annual Report

(Novartis)

Year	Growth vs Previous Year	Key Event for Growth
2002-2011	+12% (Ave.)	Growth of recently launched products (Glivec, Diovan)
2012	-3%	Patent expiry (Diovan)
2013	+2%	Growth of recently launched products
2015	-15%	• Competition in Generic division • Slump of acquired company (Alcon)
2016	-2%	• Slump of acquired company (Alcon) • Patent expiry (Glivec)

Source: Novartis Annual Report

(Roche)

Year	Growth vs Previous Year	Key Event for Growth
2005-2009	+9% (Ave.)	Growth of recently launched products (Herceptin, MabThera/Rituxan, Avastin, Actemra/RoActemra)
2009	+8%	Urgent demand for Tamiflu due to influenza pandemic
2010	-3%	Recoil from demand for influenza pandemic
2011	-10%	Withdrawal of breast cancer indication for Avastin
2012-16	+3% (Ave.)	Growth of Herceptin, MabThera/Rituxan, Actemra/RoActemra

Source: Roche Annual Report

(Merck)

Year	Growth vs Previous Year	Key Event for Growth
2003	-57%	Divest of Medcohealth
2010	+67%	Acquisition of Schering-Plough
2013	-7%	Patent expiry (Singulair)
2015	-6%	• Divest of consumer business • Patent expiry (Remicade EU)

Source: Merck Annual Report

(Sanofi)

Year	Growth vs Previous Year	Key Event for Growth
2004	+85%	Acquisition of Aventis
2005	+84%	Inventory valuation by acquisition of Aventis
2011	+10%	Acquisition of Genzyme
2013	-6%	Patent expiry (Eloxatin, Plavix, Aprovel, Lovenox)
2015	+10%	Growth of products from Genzyme

Source: Sanofi Annual Report

(GSK)

Year	Growth vs Previous Year	Key Event for Growth
2004	-5%	Patent expiry (Paxil)
2005	+6%	Growth of recently launched product(Advair)
2009	+16%	Urgent demand for vaccine for influenza pandemic
2014	-13%	Patent expiry (Advair)
2016	+17%	• Growth of recently launched products (Relvar/Breo, Anoro) • New product launches (Tivicay, Triumeq)

Source: GSK Annual Report

(AstraZeneca)

Year	Growth vs Previous Year	Key Event for Growth
2003-2009	9% (Ave.)	Growth of existing products (respiratory, antipsychotics and oncology)
2012-2013	-23% (Ave.)	Patent expiry (Seroquel, Crestor and Nexium)

Source: AstraZeneca Annual Report

(BMS)

Year	Growth vs Previous Year	Key Event for Growth
2006	-7%	• GE entry of competitor of Plavix • Patent expiry (Pravachol)
2007-2008	+7%	• Growth of Plavix • Growth of recently launched product (Abilify)
2012-2014	-25% (Ave.)	Patent expiry (Plavix, Abilify)
2016	+17%	Growth of recently launched product (Opdivo, Eliquis)

Source: BMS Annual Report

(Eli Lilly)

Year	Growth vs Previous Year	Key Event for Growth
2003-2011	9% (Ave.)	Growth of major products (Zyprexa, Cymbalta)
2012	-7%	Patent expiry (Zyprexa)
2014	-15%	Patent expiry (Cymbalta, Evista)
2016	+6%	Growth of existing products (Cialis, Alimta, Forteo and Humilin)

Source: Eli Lilly Annual Report

APPENDIX 2: J&J's Our Credo

Our Credo

We believe our first responsibility is to the doctors, nurses and patients, to mothers and fathers and all others who use our products and services. In meeting their needs everything we do must be of high quality. We must constantly strive to reduce our costs in order to maintain reasonable prices. Customers' orders must be serviced promptly and accurately. Our suppliers and distributors must have an opportunity to make a fair profit.

We are responsible to our employees, the men and women who work with us throughout the world. Everyone must be considered as an individual. We must respect their dignity and recognize their merit. They must have a sense of security in their jobs. Compensation must be fair and adequate, and working conditions clean, orderly and safe. We must be mindful of ways to help our employees fulfill their family responsibilities. Employees must feel free to make suggestions and complaints. There must be equal opportunity for employment, development and advancement for those qualified. We must provide competent management, and their actions must be just and ethical.

We are responsible to the communities in which we live and work and to the world community as well. We must be good citizens—support good works and charities and bear our fair share of taxes. We must encourage civic improvements and better health and education. We must maintain in good order the property we are privileged to use, protecting the environment and natural resources.

Our final responsibility is to our stockholders. Business must make a sound profit. We must experiment with new ideas. Research must be carried on, innovative programs developed and mistakes paid for. New equipment must be purchased, new facilities provided and new products launched. Reserves must be created to provide for adverse times. When we operate according to these principles, the stockholders should realize a fair return.

Johnson & Johnson