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# Organizational Change: Material Rationality and Formal Rationality as two approaches of change

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## **Introduction**

The role of globalization in the last two decades has dramatically changed most of industries' environment, widening their borders and making it more turbulent.

Final markets have multiplied bringing a great deal of opportunities, especially for those mature industries that were declined in developed countries. On the other hand, the number of competitors has dramatically increased, with the rising importance of far-east companies that have been able to penetrate developed markets by turning the logic of the competition upside-down. The impact of globalization has occurred also in cultural terms, as a result also of the increased interdependencies between firms and countries. A cultural shift has impacted on the society making it global. Such process has in turn change the order in terms of political power, by increasing the importance of Transnational Organizations and Multi National Enterprises.

Moreover, the rise of the internet and the related social technologies has further facilitated this shift at the cultural and economic level, by strongly changing the competitive environment of most firms.

In this new global framework firms have to deal with a turbulent and changing environment, being flexible to adapt to it and having the capability to stay tuned with the external environment to anticipate possible changes.

The topic of Organizational change becomes central in most of industries.

The number of changes organizations have to undergo to deal with their competitive environment makes the capability to manage organizational reforms crucial to achieve competitive advantage over

rivals. Change Management becomes fundamental for companies to survive and thrive.

However, in this new Globalized environment the approach organizations have toward change is not always the same. With a strong cultural shift brought by the Globalization, progressively merging National Societies in a unique Global Society, Companies have increasing pressures to comply with standards imposed by a highly demanding society, such compliance impose organizational reforms that are not led by the interest to increase the organizational performance but with the purpose to be compliant with societal norms to increase their prospects of survival.

This work aims to analyze the difference between two approaches of change based on two types of rationality identified by Max Weber as Formal and Material Rationality, and verifying how the difference of Rationality used by the firm to change its organization impacts on the actual changes the organization undergoes and finally the impact on the organizational performance.

The first chapter analyzes the several forces leading to organizational change with a specific focus on the role played by the Globalization in determining a new competitive environment and new solutions for dealing with the new context. The last paragraph of the first chapter goes through the typology of change organizations can undergo.

The second chapter, starting off highlighting the new role played by organizations in the Global context, identifies the two types of Weberian Rationalities, Formal and Material Rationality, as two drivers of organizational reforms. The chapter deep-dives the concept of Organizational Innovation practices as models based on material rationality and brings about a brand new practice born and developed in the Globalized era, Olocracy.

The third chapter aims at deep-diving a management model leading to organizational change based on Formal Rationality, The ISO9000 set of Standards. In contrast, the fourth chapter analyzes a management practice based on Material Rationality, the Lean Management.

The fifth chapter is based on an empirical case study on data gathered through a questionnaire provided to firms operating in the Chemical and Plastic sector. The purpose of the analysis is to highlight whether a different rationality of adoption of managerial practices impacts differently on the organizational culture, organizational processes and organizational structure, and in turn on the organizational performance.

# **1. Forces leading to Organizational Change and the role of Globalization.**

## **1.1 Introduction to the firm's operating environment**

The environment where companies operate is continuously changing imposing organizational reforms as reactions from external pressures or proactive actions to gain competitive edge over rivals. These external and internal forces for change have dramatically increased as the phenomenon of Globalization has spread all over the world intensifying the number of economic and social exchanges between states and by creating a complete new global society<sup>1</sup>. These parallel effects of Globalization have led on the one hand to a more complex operating environment. On the other hand, as it will be later explained in the next paragraphs, they have created a fertile environment for the production of models and standards to deal with organizational change.

The first three paragraphs are going to analyze the complexity of the companies operating environment characterized by three dimensions: the External Environment, the Internal Environment and the Historical environment<sup>2</sup>. With the advent of Globalization each of these dimensions has become more and more turbulent imposing a higher focus on organizational reforms. These three dimensions are tightly interrelated, that means that turbulences coming from a dimension influence the complexity of the others and in turn the overall turmoil of the firm's operating environment.

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<sup>1</sup> Gili S. Dori, Meyer, Hwang 2006

<sup>2</sup> Senior and Swailes 2010

## **1.2 The external environment and external forces leading to Organizational Change. The PEST Framework.**

The connectedness between an organization and its external environment makes the turbulences coming from outside the boundaries of the firm critical factors triggering organizational changes.

An organization can be thought "*as a system receiving inputs from the environment and releasing output back to it*"<sup>3</sup>, not just in economic terms but even in political, socio-cultural, technological terms. The relationship firm/environment in terms of these factors it's radically changed with the rise of Globalization.

A useful framework used to analyze the different kinds of external factors determining turbulence in the context where a firm operates is the PEST (Political, Economic, Socio-Cultural and Technological factors) Framework.

This model can in turn be used, to consider the globalization's impact on the firm's external environment.

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<sup>3</sup> Senior and Swailes 2010

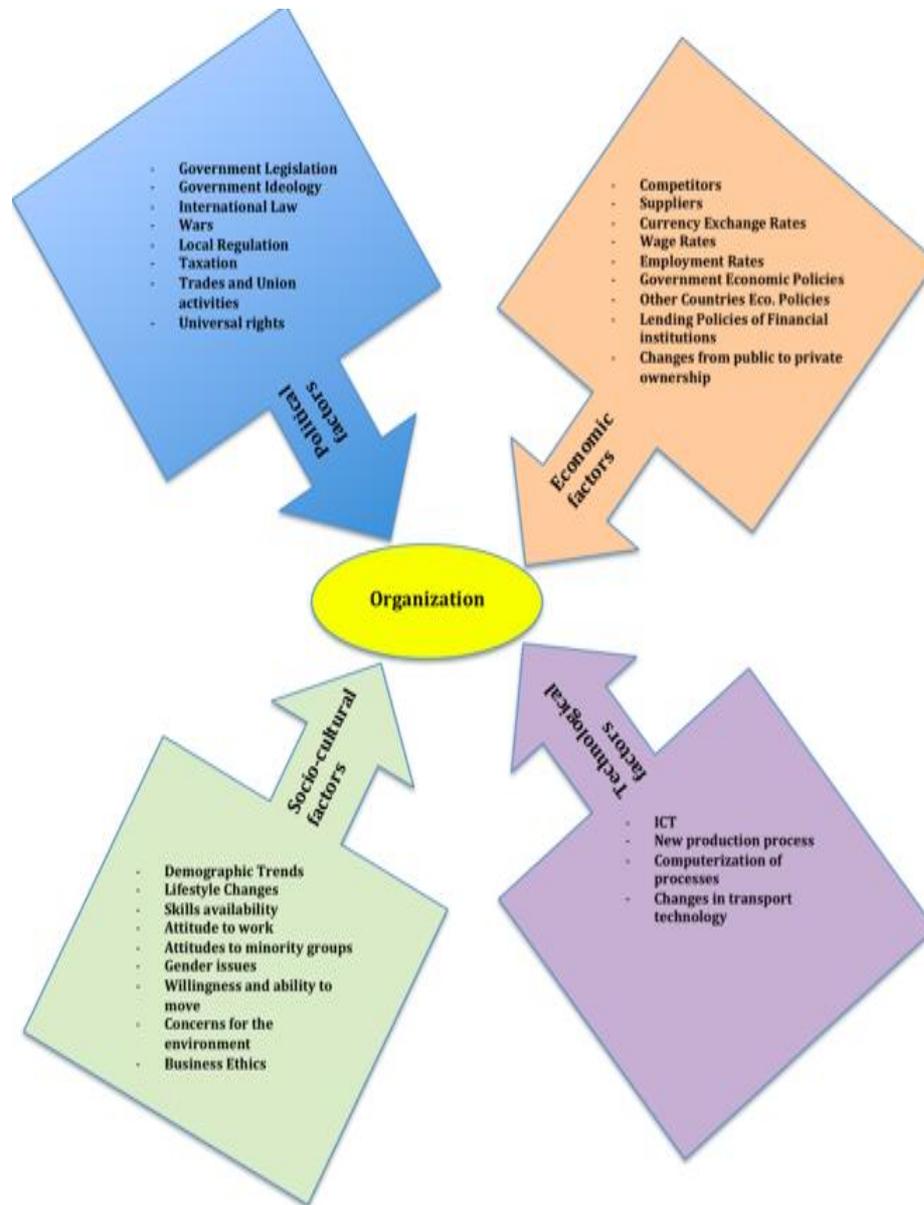


Figure 1.1.1 Source: Organizational Change, Barbara Senior and Stephen Swailes (2010)

**Political Factors** are a strong external force influencing firms and impacting on organizational change. National law still remains an important political trigger for organizational reform, in fact a government through regulations can positively or negatively influence the environment where a firm operates. A clear example of political a factor at the national level is the national taxation policy that may influence a firm’s organizational choices in terms of headquarters

location, such as Fiat that recently has relocated its headquarters in Netherlands clearly for the Italian lack of competitiveness in terms of taxation policy. Moreover Fiat, like most of MNCs, has relocated part of its operations in Eastern Europe countries where national labor laws are less strict, allowing the company to be more competitive in terms of costs. Globalization with respect to these political forces, on the one hand has increased the numbers of feasible organizational responses by giving companies the possibility of relocation of production plants and headquarters, on the other hand it has increased the diversity of national laws firms have to deal with.

Globalization has impacted on political triggers of change also by increasing the importance of the International Law and international standards and model spread by transnational organizations (such as ISO or ONU) that have increased their global relevance as factors of organizational reforms.

In this sense, Globalization can be thought as a political and cultural process generating a sense of global society<sup>4</sup> where problems are perceived as global concerns and so regulated by international laws.

Political factors are tightly interrelated to the other three environmental factors, especially to economic socio-cultural triggers. In fact changes in the political context may influence firms indirectly by influencing economic or sociocultural factors that in turn impact organizations<sup>5</sup>. A clear example of indirect influence of political factors is the case of China, where the government has recently allowed, revising the previous rule, the second son/daughter per family. This change in the regulation (political factor), have impacted on Chinese demographic trends (socio-cultural) and in turn have positively influenced the baby products industry that have registered

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<sup>4</sup> Gili S. Dori, Meyer, Hwang 2006

<sup>5</sup> Senior and Swailes 2010

an unprecedented growth with the entrance of new players and the reinforcement of the existing ones.

**Economic Factors** like political triggers are closely intertwined with political decisions, socio-cultural and technological factors. Economic characteristics of a nation are in part the result of its culture and its government's decisions. The skills availability in a country (socio-cultural factor) influences the type of firms in a country and in turn their organization. In developed countries such as USA or UK the majority of the business are knowledge based (E.g. the financial service industry) this in turn impacts on the organizational features of companies. In contrast, the wide availability of cheap labor in developing countries impacts on the diffusion of manufacturing organizations. Obviously the type of skills available in a country doesn't remain the same over time but are impacted in turn by political factors such as government's education policies.

The role of Globalization in influencing economic factors and, by doing so, increasing the complexity of the environment where firms operate is significant. Globalization can be thought even as a process that intensifies economic exchanges between social units<sup>6</sup> located in different parts of the world. These intensified exchanges at the global level impact on the economic triggers of organizational change, such as the level and type of competition in a specific industry. For instance, the mobile phone industry that recently has seen the entrance in its competitive field of new players coming from other sectors such as Google, Microsoft, Apple and also new players coming from other countries such as China (it is emblematic the case of Huawei) that until a decade ago were characterized by the lack of competitiveness on the most profitable activities in the industry value

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<sup>6</sup> Gili S. Dori, Meyer, Hwang 2006

chain (design and marketing) that were typical backbones of the competitiveness of developed countries such as U.S.A.

The impact of Globalization as a process of intensified global exchanges on economic factors can be viewed also as an opportunity for firms to widen their choices in terms of supply base, by having the possibility to get in contact with suppliers all over the world and choosing those that are more convenient. This in turn increases competition among those firms that supply other businesses.

The role of Globalization affecting the economic factors of the external environment can be relevant also in financial terms, by increasing the volatility of the currencies exchange rates that imposes to firms a more focus on financial aspects and risk management even for those companies that are not directly involved in financial markets.

**Socio-Cultural Factors** are also important environmental triggers for organizational change that can impact directly on firms or indirectly by influencing economic, political or technological factors that in turn will trigger organizational reforms.

Since Globalization can be viewed, as we explained above, a political and cultural process characterized by the spreading of a new global culture, its impact on these factors is significant. Lots of concerns coming from the society are treated as global issues, this is the case of the environmental concerns, provoking pressures of compliance on firms that to be compliant reform their operations or supply base to meet the standards set by the global society. Others two important effect of globalization on socio-cultural factors are: increasing the workers' ability to move to other nations giving more flexibility to the labor market; dramatically change the national lifestyle especially in those developing countries that are progressively increasing their GDP per capita such as China. This last effect opens new market opportunities to European and North

American companies that are enlarging or reshaping their distribution channels to penetrate those developing markets. This trend is consistent both for established multinational companies (such as Zara; H&M) and for new start up that are born global<sup>7</sup> exploiting from the beginning foreign markets that are closer than ever before in terms of lifestyle features. A significant example to this growing trend of International Entrepreneurship is Crash Baggage a startup in the Luggage Industry born in Italy in Riviera del Brenta. On the one hand, the company has focused on the conception of products(R&D), design and marketing keeping these activities in Italy. On the other hand, Crash Baggage has exploited international relationships from the beginning: upstream locating the manufacturing activities in China, and downstream selling its products internationally through distributors (for the Far east area) and salesman (for EMEA region). This approach of 'going international' from the moment the company was born has allowed the company to be competitive from the beginning on the costs side and in terms of sales, exploiting markets (e.g. Japan) that before the advent of Globalization were more difficult to penetrate, especially for SMEs.

**Technological Factors** have been increasingly relevant environmental triggers for organizational change. Their connectedness with other environmental factors is high since technological changes derive basically from socio-cultural features of a country, especially the type of skills availability (most of the technological changes in the last two decades have come from western countries whose societies are knowledge based in terms of skills). Moreover, technological triggers have forced national governments to take actions to regulate the new environment created (with the advent of social media such as Facebook the

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<sup>7</sup> McDougall and Oviatt 2000

privacy issue has been increasingly important in the national government agenda), these new regulations have in turn impacted on firms. Yet these technological triggers have had a ripple effect on economic factors, changing for example the terms of competition in several industries especially those in the tertiary sector where the cost structure of companies have shifted radically by changing the competition and the requirements to compete. This change in the competitive field has been led by the computerization of existing processes through ICT and the rise of new processes exploiting the internet and social media (such as crowdsourcing). These new processes are characterized by low variable cost, low structure costs and high R&D costs that by definition are sunk cost and applicable to several businesses, allowing huge economies of scope and scale<sup>8</sup>. That's why industries characterized by a strong presence of ICT show a high level of concentration where big players don't focus just on a business but leverage the high R&D cost for broadening their business scope and penetrating in relating industries (e.g. Google). The role of Globalization on technological change is quite different compared to the role played on the other environmental factors. In fact Globalization, other than having influence on technological factors, has been implemented and amplified by technological breakthroughs such as the Internet, that has allowed people coming from different countries to be closer and has increased economic and social exchanges in turn creating a new global culture and politics. Technological changes in the globalized era have also allowed an easier relocation of operations that can be managed seamlessly with ICT and powerful ERP software.

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<sup>8</sup> Parolini 2011

### **1.3 The internal environment and internal forces leading organizational change.**

Internal triggers can be responses to external factors of change, in this case there's a tight connectedness between external and internal factor of change. Internal triggers can be also not related to external factors but the result of internal decisions or generation of new ideas. In these cases organizational changes are purely proactive actions.

The importance of new ideas as an internal trigger that generates organizational change is significant. Cases such as the MM's invention of post-it have a high impact on the organization requiring a reform to manage the new idea and enclosing it in the firm's organization. This practically means hiring new employees and workers for covering new job positions, setting the production process and procedures for implementing the new idea, and fitting the new components of the organization with the existing ones.

Other than new ideas there are other internal decisions that can be viewed as internal factors leading organizational change.

Some of the most important are: decisions regarding the relationship firm-Unions; hiring new executives or senior managers; redesigning jobs in the organization; decisions to penetrate a new market; a new marketing strategy; decisions regarding the acquisition of a new business unit; decisions regarding the adoption of a new technology<sup>9</sup>

The impact of Globalization on the firm internal environment is significant. On the one hand, the hypercompetitive and complex environment has stimulated the proactive research of new ideas for gaining competitiveness over rivals. On the other hand, firms'

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<sup>9</sup> Senior and Swailes 2010

reactivity to the external changes has increased for realign the organization to the continuously changing environment. To sum up, in the global era most of companies' internal environment have become more turbulent.

#### **1.4 The temporal environment. The industry life cycle and the organization's life cycle.**

The temporal environment is the third dimension, part of the operating environment, in which firms operate.

It impacts on organizational reforms in two ways, at the industry level and at the single firm level<sup>10</sup>.

At the industry level the temporal environment impact can be described by using the industry life cycle framework. This model shows how industries features change over time in relation to different levels of sales. As industries features change over time, firms have to change their organizations accordingly to fit with the new competitive context.

At first industries go through a stage of fragmentation, characterized by firms having a variety of business models and offering a variety of product at low volumes, in this stage organizations are focused on increase their market share by emphasizing functions such as Marketing and R&D. Manufacturing activities are characterized by low efficiency. Procedures and routines are not important in organizing the firms, there is rather a trial and error approach to find the right business model for increasing sales and moving to the shake out stage, when a business model become dominant and the industry competition concentrates over fewer players with respect to the previous phase. In this stage where firms

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<sup>10</sup> Senior and Swailes (2010)

start to increase the volume of sales, even organizations undergo to a significant reforms. The focus shifts on efficiency of manufacturing activities. Since volumes produced increase and operations become more relevant the role of procedures and routines applied to processes get more important as a means to lowering costs. Organizations, since the increasing importance of operations, start getting bigger with the consequence of an increase of layers in the organizational chart to manage the increased operational complexity. Over time sales become more stable and the main player in the industry consolidate their market share, the focus on efficiency remains high. The industry then moves to the decline phase characterized by a drop in terms of volumes of sales. The organizational efficiency in this stage becomes a feature to survive in the environment added with organizational improvements to try to recover profitability<sup>11</sup>

This model has been reviewed in terms of industry revitalization when emerging firms or established ones implement radical changes on their business models that revolutionize the industry itself in the decline stage. This refresh of the industry life cycle is characterized by an increase in terms of sales that has significant organizational effects on those established companies that have to adapt to radical changes brought in the industries by upstarting firms or by other established players<sup>12</sup>. Hence the organizations of those companies that were experiencing the decline stage have to become 'ambidextrous' that means deal with matters of efficiency and innovation and flexibility at the same time.

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<sup>11</sup> Harvard Business Review: The industry life cycle revisited Oct 2004, Vol 82 Issue 10

<sup>12</sup> Harvard Business Review: The industry life cycle revisited Oct 2004, Vol 82 Issue 10

Dealing with this paradox is fundamental to survive in an environment that can be undergone to revolutions due to innovations brought by newcomers. Ambidextrous companies exploit benefits of size in functions such as marketing, manufacturing and finance but at the same time keep units small and autonomous by fostering sense of entrepreneurship on risk taking throughout the organization, that gives the organization the ability to be responsive to radical changes brought by upstarting firms or others established players<sup>13</sup>. A significant example, cited by G.Hamel in its book "Leading the revolution", of a company that has managed to revitalize the industry where it operates and, at the same, time have renewed itself is CEMEX a Mexican firm operating in the cement industry, a sector known to be a mature industry with lack of innovativeness. CEMEX led by its CEO Lorenzo Zambrano have exploited its size (the company is one of the largest cement companies in the world) and at the same time have implemented, with an entrepreneurial spirit, new projects and startups that have allowed CEMEX to develop and broaden its capabilities (e.g. logistic competencies developed with the GPS dispatch system-DSO- set up in the trucks delivering cement to construction sites) and exploiting them not just in the cement industry but in all the materials construction industry. Such approach has been developed by implementing organizational changes that have allowed the company to exploit its size and at the same time to develop an entrepreneurial approach based on innovation. An example is the institution in the organizational structure of a board dedicated to innovation, composed by three senior VP, two younger managers and two outsiders (e.g. consultant or suppliers) that takes in examination new ideas and breakthroughs proposed by cross-functional teams commissioned by an innovation staff in charge for

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<sup>13</sup> Tushman and O'reilly III 1996

come up with new ideas around major themes. This ambidextrous approach has allowed the company to renew itself and the industry in which it operates

Other than the ILC, the temporal environment influences organizational reforms through the life cycle of the organization itself that is tightly related to the specific organization in terms of its historic pattern from its foundation, expansion cycles, changes in culture and leadership styles over time. The organization life cycle can be more or less tight to the industry life cycle.

### **1.5 The role of Globalization in determining the need of change and spawning models and standards as solutions**

The phenomenon of Globalization has definitely increased the turbulence of the overall operating environment where firms operate. As a consequence of the increased complexity in the external environment (paragraphs 1.2), the internal environment of organizations has become more turbulent. In fact, the capability of established firms to innovate themselves and the industry they operate has become a fundamental factor to remain competitive in a globalized environment. Moreover organizations have been changed upside down in terms of management, processes and corporate culture to realign with the new context.

In terms of management for example, has been recognized the need to develop three different dimensions of management processes: *Geographic Management*; *Functional Management* and *Business Management* with global product responsibilities<sup>14</sup>.

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<sup>14</sup> Bartlett and Ghoshal 1987

In fact, as argued by Bartlett and Ghoshal Geographic Management stimulate organizational responsiveness by staying fine-tuned to the local market requirements that are different across several countries. Business Management with global product responsibilities allows companies to achieve global efficiency and integration especially on those activities such as base R&D, Finance or global sourcing that can generate economies of scale if managed globally. Functional Management *“acts as repository of organizational learning and as the prime mover of learning across the organization, by stimulating the creation of specialized knowledge from functional managers and creating links across function to transfer this knowledge and apply it in other contexts”*<sup>15</sup>.

The companies’s ability to develop these three capabilities (efficiency, responsiveness and worldwide learning) through the implementation of the three management processes listed above, is crucial for dealing with operating environments that are increasingly turbulent due to the phenomenon of Globalization.

This phenomenon other than impacting on environmental complexity can be viewed as a cultural process that influences the generation and spreading of new organizational practices, through standards and models, that address directly to the issue of organizational changes. These new practices have been spreading in the fertile globalized world for a series of reasons that are going to be analyzed.

According to Gili S. Drori, J.W. Meyer and H. Hwang three features of this cultural process have been the main drivers in fueling new solutions for dealing with organizational change: *The rise of a new global society; an increased rationalization and*

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<sup>15</sup> Bartlett and Ghoshal 1987

*standardization; the rise of a culture based on empowerment and actorhood.*

The rise of a new global society is mainly due to the fact that globalization after having influenced social and economic exchanges, through the opportunities given by technological breakthroughs, has dramatically shorten distances between national cultures and at the same time has created a culture where society is viewed as global and most of the issues are dealt with at the global level (E.g Global Warming, Universal rights or management practices) and sponsored by organizations operating globally such as ISO or ONU.

The second and the third features are closely related, in fact a more focus on standardization and rationalization is mainly due to a global scientization of modern society characterized by a tighter relationship between science and the society itself<sup>16</sup>. Scientific approach in fact, is not anymore used by scientist in specific sectors but is applied to most of the aspects of the modern society. Examples of global scientization are the increased focus that companies have on R&D and their close relationships with Universities and Research Centers where they can exploit knowledge and apply it to find solutions for specific problems they are dealing with.

So the authority of science has increased in several sectors included in the economical one, this trend in the business sector is reflected by the growing importance of business schools that have applied a scientific approach in managerial education providing tools and models supporting management decision making for dealing with change. The scientific approach commonly uses rational rules for regulating events and tame uncertainty, likewise these tools elaborated by Business Schools and Consulting Companies have

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<sup>16</sup> Gili S. Dori, Meyer, Hwang 2006

been used to cope with the turbulence brought by Globalization that requires a continuous alignment to changing environmental conditions, highlighting the importance of change management. Since more and more firms in several sectors compete in the same global field, where national boundaries progressively fade, the spreading of these organizational practices and standards is more effective even at the cross-sectorial level. Moreover as a result of the global scientization that have brought standardized practices, the spreading of models have led to a phenomenon of *isomorphism* of organizational practices<sup>17</sup> characterized by the applicability of standardized tools and models on companies operating in different sectors and context.

The increased importance of Business Schools as a consequence of global scientization has played a fundamental role in spreading management standards at the global level. The process of institutionalization of B-schools at the global level has been driven by normative pressures (such as positive discourses by business people, well known companies that have been early adopters and benchmarks), a mimicking process of developing countries that have noticed positive results brought by these models applied by companies in developed countries, the involvement of national states in the globalization in terms of involvement in global markets, membership in transnational organizations and involvement in the global polity have also been an important factor leading the institutionalization of B-School.

The availability of management standards have in turn determined an increased empowerment of people operating in companies that can rely on these tools for decisions, making organizations more flat and at the same time empowering the

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<sup>17</sup> Gili S. Dori, Meyer, Hwang 2006

organizations themselves, that in the era of globalization are characterized by an increased actorhood that at the global level have lowered the influence of national states. In fact, multinational companies have become a major issue in terms of regulations since their activities are spread all over the world and can't be ruled just by national law. In contrast to this trend have emerged lots of transnational organizations that aim to regulate, at the global level MNCs' activities imposing standards that reflect the need of the audit society to regulate such entities. Such standards (like ISO standards), as it will be explained in the next chapter, are managerial models implying organizational change, that have been spreading in the same way of the managerial tools elaborated by business school and successful companies, but differ radically from them in terms of reason of application. If the first type of practices are applied for be compliant to requirements imposed by transnational organizations reflecting the need of regulation coming from the global society, the second ones are practices that companies apply to be more competitive in the marketplace.

Both of these types of management standards are the result of the three drivers characterizing the globalization as a cultural process. Moreover both types of practices, if applied, may determine a change in the organization. However the changes determined on the organization by these two type of models strongly differ, having in turn a different impact on organizational performance.

To sum up, Globalization have played a critical role both in increasing the complexity of the operating environment where companies operate, but at the same time, as a cultural process, has created a fertile environment for the elaboration of management practices to deal with uncertainty.

Such practices, often lead to organizational change that differs according the model used and most importantly according to the

reason why is used (for compliance or for obtain competitive advantage over rivals).

This work analyzes two cases of management standards, ISO9000 and Lean philosophy that both require change in the organization to achieve an higher quality of organizational processes and in turn in the final output organizations deliver, but are used by most of companies for different reasons. Furthermore it will be analyzed the ramifications in terms of change management and performances of these two types of models that, in the last years, have been spread by Globalization and are recognized as two of the most common organizational practices.

## **1.6 Organizational Change: different types and characteristics.**

Organizational change practices implemented in firms aim at finding the right alignment with the operating environment, anticipating threats and opportunities coming from the external environment and leveraging internal resources. The kind of alignment that has to be found to stay tuned with the environment, may require different changes in the organization according to the current posture of the company and to the changes happening in the external context. For example there are established companies that coming from successful years of high earnings and stable growth ignore the external changing context and by doing so will be forced to major and harsh changes in the organization when the company won't be able to survive anymore in the changed environment. On the other hand, there are companies that remain tightly connected with the external context seeking continuous alignment overtime by implementing continuous changes in the organization that will

prevent radical revolution. In contrast there are sectors where despite the connectedness between firms and environment, the level of turbulence imposes radical changes that oftentimes cannot be foreseen.

*"Firms are complex system consisting in different elements each of which can be change"*<sup>18</sup>. These elements composing a firm can be grouped into two main categories: *the business system* and *the organizational system*.

The first one determines the way the firm's resources, value adding activities and product offerings are configured to create value.

The second one refers to how the company organizes the work to conduct its business configured in the business model.

The organizational system is in turn composed by the *organizational structure*, determining the division of labor; *the organizational processes* that control and coordinate the different tasks of the organizational structure; *the organizational culture* in terms of value and behaviors shared by the people working in the firm.

Strategic change refers to changes occurring in the business system or in the organizational system. This work will analyze change just in terms of changes in the organizational system.

Moreover, according to De Wit and Meyer (2010) these systems can be altered differently determining several dimensions on which measuring change.

The scope of change is the defined by the number of parts of the system altered at the same time. It is narrow when change occurs in just one function of the organization, on the other hand it

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<sup>18</sup> De Wit, Meyer 2010

is broad when changes involved several parts of the organization interesting several functions.

The amplitude of change is determined by the extent to which parts of the organization are altered from the previous situation. The amplitude of change is low when change is implemented with moderate adjustments from the previous on the other hand the amplitude of change gets high when change is implemented by dramatically changing the previous situation.

Coupling together these two measures of change it is possible to determine a third one, the magnitude of change. When change is comprehensive and radical the magnitude of change is large, on the other hand when change is narrow and moderate the magnitude of change decreases<sup>19</sup>.

Change can be measured also in terms of pace, in turn pace of change is characterized by timing of change measuring the time change is initiated, it can be intermittent highlighting specific moments when change is initiated or constant when a specific moment of implementation of a new change cannot be spotted.

The pace of change is also characterized by the speed of change, the time span within which change takes place. High speed of change highlights a fast implementation of changes in the organization on the other hand, a low speed of change determines a longer period of time over which changes are implemented.

According to these dimensions of change it is possible to define two major type of change.

On the one hand, changes that don't build on the status quo but overthrow it, by revolutionizing the organizational system and/or the business system. In these terms change is a sort of revolution characterized by a large magnitude, intermitted and fast bursts.

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<sup>19</sup> De Wit, Meyer 2010

On the other hand changes can be thought as a sort of evolution that builds on the current status quo and continuously adapt it making it evolving in small steps. In this evolutionary perspective change may be characterized by a large magnitude, but the way radical change is pursued is by taking advantage of small improvements that over time lead major changes. In this perspective learning is a critical capability that allows the company to evolve. The Change pace is slow characterized by continuous adjustments rather than intermitted bursts.

This paper is going to analyze two cases of organizational change, implemented for different reasons but with similar characteristics. The Lean philosophy and the ISO9000 standards are both models of organizational change that have an evolutionary perspective, emphasizing the concepts of quality and learning in the business processes.

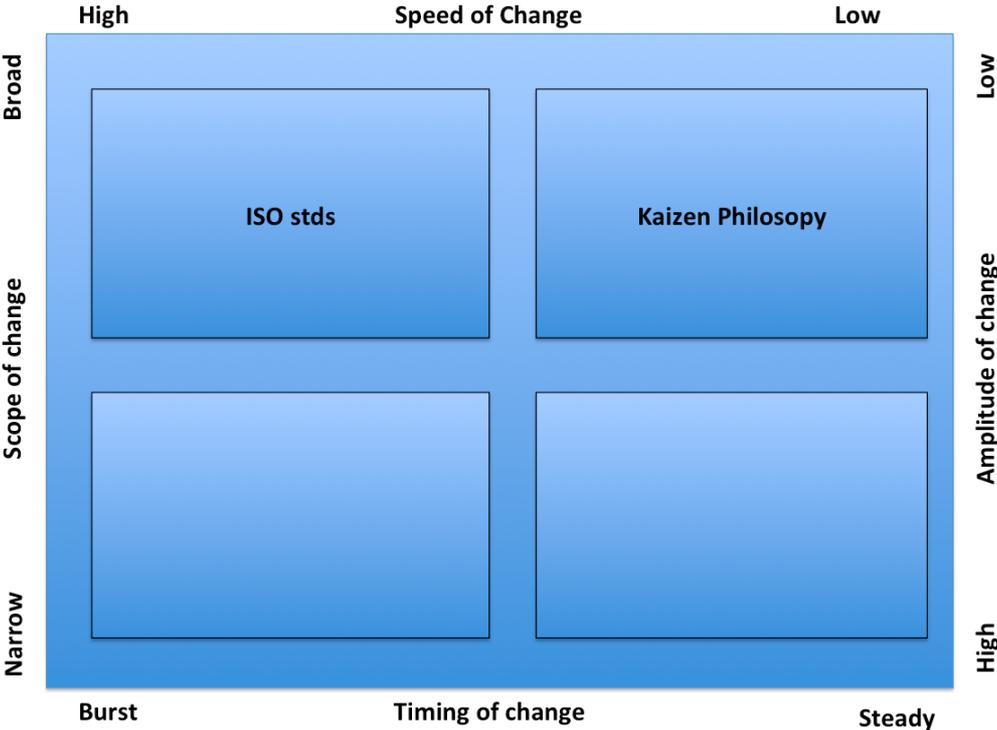


Figure 1.5.1.

The Lean philosophy in terms of change has a low pace characterized by low speed and a steady timing of change. For ISO standards the speed is relatively higher since changes on organizational processes have to meet the requirements in terms of timing to get the certification. The timing of change is also more intermittent with respect to the timing characterizing the Lean. In terms of amplitude of change both models build change upon the status quo without overthrow it, so the amplitude is low. On the other hand the scope of change is broad for both Lean and ISO standards since these management standards don't affect just a specific department or function but the entire organization.

Regarding the object of change characterizing these two techniques, the Lean Management affects primarily the organizational culture (at least in the first steps at the top of the organization) and in turn, the cultural change impacts on processes and also on the organizational structure. ISO standards instead are techniques impacting directly on processes even without requiring a cultural and structure change.

What differs between the two management standards is the reason why they are applied. On the one hand Kaizen philosophy is a model that was born in the automotive industry with Toyota and in turn spread by Business Schools as a 'best practice' for organizational change and performance improvement. On the other hand ISO standards have been spread by a transnational organization as a means of compliance to quality requirements and get the 'acceptance by customers' that are getting more sensitive on quality issues. In the next chapter is going to be analyze the different ratios behind the adoption of these two management standards, that aim both at organizational change but with different purposes.

## **2. Two different approaches to deal with Organizational Change: compliance vs. self interest**

### **2.1 Organizations as new social actors**

In the modern societies characterized by the increasing influence of globalization, in terms of increased economic exchanges and in terms of political and cultural process raising global concerns and spawning global practices and solutions, organizations assume a complete new role. In fact if in the post world period organizations were thought, in a bureaucratic approach, as a mere structure serving the external decision maker, in the modern societies organizations become social actors setting their own goals and pursuing them by formulating their own strategy. This ability can be defined agency<sup>20</sup>.

The new role played by organizations in the globalized era is the result of the cultural process of Globalization that, as mentioned in the previous chapter, has been characterized by a rationalization processes based on an empowered scientized society, that in turn has weakened the power of nation state and increased the authority of scientific knowledge and those actors producing that knowledge (such as Business School, Scientist, International Organizations, Consultant, MNE's). *"The scientific approach based on rational rules is characterized by processes of classification. Organizations by using this rational approach tend to classify themselves in the society as social actors. This identity activation through rational practices allows organizations to set their own goals and strategically acting for*

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<sup>20</sup> Gili S. Drori, Meyer, Hwang 2006

*pursuing them*"<sup>21</sup>. In this sense organizations are not anymore a means for achieving goals of an external authority/decision maker. By activating actorhood these new social actors, embedded in the society, draw continuous expectations from the society itself in terms of quality, environment, value creation issues. Such expectations are met by implementing practices that require organizational change. Business School, Consulting Firms, MNE's, Transnational organizations provide standards useful for meeting expectations and at the same time allowing them to increase their actorhood. This virtuous circle has changed the role of organizations, increasing the related organizing and organizational changes.

However, in this new context the ratio behind organizational change may differs according two logics: the logic of compliance and the logic of mere performance improvement based on the Firm self-interest.

In the next paragraph it is going to be analyzed the difference in these two logics of organizational change, by starting from the M.Weber discourse on rationality.

## **2.2 Two ratios behind Organizational Change: Formal Rationality and Material Rationality**

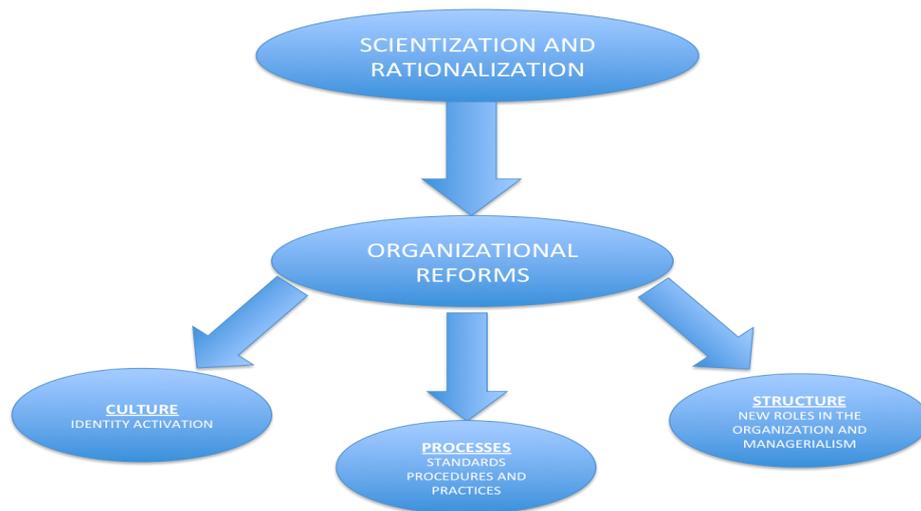
The rationalization process characterizing modern societies has created a fertile environment for organizations to spread and dealing with organizational change at different levels.

At the cultural level by the activation of organization actorhood, implying a formulations of its own goals, mission and strategy. In terms of processes, by spreading the standards and models for

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<sup>21</sup> Gili S. Drori, Meyer, Hwang (2006)

organizational change. In terms of structure by creating new roles and departments in Firms and increasing the level of managerialism.



**Figure 2.2.1**

Organizational reforms can be triggered by two different logics. On the one hand Firms change their organization for a need of compliance with standards elaborated by International Organizations, reflecting the expectations of the audit society. On the other hand change may be implemented because of the firms self interest on performance improvement for gaining competitive advantage over rivals.

These two logics triggering organizational change are related to different firms behavior, that can be traced in the Weber discourse on rationality in *Economy and Society*.

Highlighting the pervasiveness in the modern society of social actions based on means-ends logic, Weber defines four different types rational social actions: *Practical/Material Rationality*, *Theoretical Rationality*, *Formal Rationality* and *Substantive Rationality*<sup>22</sup>. These

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<sup>22</sup> Kalberg, 1980

types of actions are characterized by universality, that means they can be applied to several contexts. This work deep-dives the Rational and Material Rationality, applying them to the organizational context.

The Material Rationality is *"a way of life that views and judges worldly activity in relation to the organization's self-interests"*<sup>23</sup>. The starting point of this rationality is the acceptance of given realities and calculation of the best means for dealing with uncertainties and difficulties characterizing the daily routine.

This logic on how organizations should act emphasizes Firms efficiency and effectiveness. With this ratio, organizational change is implemented for increasing the performance in terms of efficiency and effectiveness. Material rationality drives change in the *"more practical/actual work activities"*<sup>24</sup>, performed for gain competitive advantage over rivals. Practices and models used by organizations for implementing change according to the material rationality are called "Management Innovation"<sup>25</sup> or Organizational Innovation practices.

Formal rationality on the contrary, indicates the *"tendency to act according a means-end calculation by referring back to universally applied rules, laws or regulations"*<sup>26</sup>

Whereas the rational calculation for acting, based on a means-end logic, has the same logic of the Material Rationality, in the Formal Rationality there's the dominance of universal and abstract rules to which the action has to comply with.

Formal Rationality relates to spheres of life that acquired a great deal of importance with the industrialization, such economic, legal and scientific spheres<sup>27</sup>.

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<sup>23</sup> Kalberg, 1980

<sup>24</sup> J. W. Meyer and Rowan, 1977

<sup>25</sup> Kimberly, 1984

<sup>26</sup> Kalberg, 1980

<sup>27</sup> Kalberg, 1980

This logic strongly relies on a rational authority that through a governance approach plays a teaching role in setting, spreading and sponsoring standards and practices<sup>28</sup>.

Strong pressures for adopting these standards come from the society in several ways: through the enforcement by law (such as the case of ISO standards in the European Union); through the support coming from the public opinion (Business School or Consulting Firms); or through a cognitive process that lead companies to take for granted these standards.

In contrast to the logic of material rationality, organizational reforms based on formal style are characterized by the implementation of procedures for comply with standards reflecting the needs of accountability coming from the society. In this sense, the organizational change can be seen as a means for compliance with societal requests and a way to gain legitimacy form the society itself. Being a legitimated actor positively influence the firm survival prospects<sup>29</sup>.

The role of institutionalization of rules and standards is central in the Formal Rationality. It can be defined as "*processes by which social processes, obligations or actualities come to take a rule like status in social thought and action*"<sup>30</sup>. This implies that pressure for organizational change for compliance with these institutionalized rules are far stronger than pressures related to the adoption of practices leading to organizational change according a material style.

Such difference in terms of pressures on organizational change determines that most of the organizational reforms performed with a formal logic don't reflect the firm's self interest to change for improving its performance, but rather the society interest for having

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<sup>28</sup> Gili S. Drori, Meyer, Hwang 2006

<sup>29</sup> J. W. Meyer and Rowan, 1977

<sup>30</sup> J. W. Meyer and Rowan, 1977

organizations more transparent and accountable, conditions for their legitimization in the modern society.

These two logics of action have strong ramifications in the type of organizational reforms.

On the one hand, organizational change based on Formal Rationality is characterized by a "*high codification of the standards and practices adopted with legalistic overtones*"<sup>31</sup>. Such codification and standardization is related to the need to communicate such organizational change to external stakeholder for increasing the company legitimacy. Hence emphasis is on the documentation of such change to increase the isomorphism with the environment they are embedded in. Such changes in organizations impact on the formal structure of the organization. On the other hand organizational reforms based on material rationality aim to performance improvement so they are less standardized since communication is not emphasized, for avoiding rivals get the information about the organizational change that is the driver of performance improvement. However these practices can be communicated long after their implementation and taken as "best practice". Moreover since models of organizational change are applied as means to reach higher levels of efficiency and effectiveness, their implementation cannot be standardized but have to be contextualized to the organization and the sector where they want to be applied.

The material style, by aiming at the performance improvement, impacts directly on the actual work activities. The organizational change on the formal structure through a ceremonial conformity to standards spawned by Transnational Organizations often is in contrast to the logic of efficiency fostered by organizational changes

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<sup>31</sup> Gili S. Drori, Meyer, Hwang 2006

based on Material Rationality<sup>32</sup>. According to J.W. Meyer and B. Rowan, such paradox can be dealt with by decoupling elements of formal structure from activities and from each other, that means making organizations loosely coupled. Despite the less coordination achieved, loosely coupled organizations can “*maintain standardized formal structure while their activities vary in response to more practical consideration*”<sup>33</sup>.

Material and Formal Rationality differ also in terms of objects of change characterizing the organizational reforms.

On the one hand changes based on Formal style impact mostly on the organizational processes and structure and have less impact on the organizational culture, especially if they are implemented just for obtain markets and society acceptance without really permeate the organization in a deeper level. On the other hand most of “management innovation practices often involve a wider change, firstly on the organizational culture, that has to change according to the management model for making shift more effective in its implementation. Moreover, organizational changes led by practices based on a material style influence organizational processes that allow the new management model to practically deploy in the organization. Last but not least also the organizational structure usually undergoes changes for allowing the new processed to work better.

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<sup>32</sup> J. W. Meyer and Rowan, 1977

<sup>33</sup> J. W. Meyer and Rowan, 1977

	MATERIAL STYLE	FORMAL STYLE
<b>COMMUNICATION TO EXTERNAL PARTIES</b>	Not emphasized, since the implemented change can be the driver of success	Emphasized to get legitimacy
<b>STANDARDIZATION/CODIFICATION OF CHANGE</b>	Low level	High level, easier to measure the degree of firms' compliance
<b>OBJECT OF CHANGE</b>	<ul style="list-style-type: none"> <li>- Organizational Culture</li> <li>- Organizational structure</li> <li>- Organizational processes</li> </ul>	<ul style="list-style-type: none"> <li>- Organizational structure</li> <li>- Organizational processes</li> </ul>

Figure 2.2.2

### 2.3 Pattern of diffusion of Material and Formal style of Organizational Reforms.

Both styles of organizational reform flourish in modern societies however, the different characteristics of societies impact on the diffusion of a certain style rather than another.

One of the most important characteristic influencing the type of organizational reform is the national polity.

The formal rationality "relies on a higher authority" that spawns standards and procedures for gaining legitimacy. In this case statist polities represent a fertile environment for organizational reforms based on formal rationality.

In countries characterized by this kind of polity, a superior organization (the state or a national/transnational organization) plays a central role in determining the rules that organizational actors have

to comply with. This is the case of Latin American countries or European countries such as France, Italy, Greece, UK<sup>34</sup>.

On the other hand, material style of organizational reforms, tend to flourish in those countries characterized by a liberal polity. In these contexts organizational actors have a higher responsibility for their action relying less on higher authorities for determining their behavior. The most significant example for this kind of context is the United States, the leading country in term of "management innovation practices". In U.S organizational change according to a formal style is perceived as compliance with a bureaucratic system.

Such dichotomy in the diffusion of different styles of organizational change tend to decrease when these styles start to gain resonance at the global level and becomes part of the global culture, like in the last decade. By becoming accepted globally formal practices of organizational reforms are adopted also in countries characterized by liberal polities on the other hand material practices of organizational reform are adopted in statist contexts. In fact, in the last decade, with the growing importance of the global culture, U.S have increased the adoption of standards such the ISO900 and European companies increasingly adopt management innovation practices.

Moreover, it is important to highlight that the type of national polity does not become a determinant factor in the diffusion of different practices of organizational reform for those statist countries characterized by dirigist regimes determining a domination of the state in the political and economical sphere. In such cases these regimes directly determine, by inhibit or accepting, the diffusion of formal or material style of organizational reforms.

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<sup>34</sup> Gili S. Drori, Meyer, Hwang 2006

The diffusion of these two approaches of organizational change is fostered by several actors.

Regarding formal practices, transnational organizations are the most important actors promoting the diffusion of standards and rules implying organizational change. ISO and UN are the most prominent examples of organizations that through a governance approach play a teaching role and spread these practices.

Business Schools, Consulting Firms and MNE's play a crucial role as promoters in both material and formal styles of organizational reform, by affecting the perception of organizational actors that see such model as best practices to follow either for getting legitimacy in the society or for gaining competitive advantage over rivals.

## **2.4 Material Style of Organizational Change.**

### **2.4.1 The Historical evolution of Managerial Practices.**

The material rationality is the source for managerial practices that are based on the self interest of the organization to increase its competitive advantage in terms of efficiency and effectiveness. Such practices that in turn impact on organizational change, have evolved over decades by aligning to the external condition of the environment.

Barley R. and Kunda G (1992) highlight several phases over which management innovation practices have gone through. Starting from Scientific Management (1900-1923) that focuses on the control of the organization by applying mechanical engineering principles, that emphasize means-ends relationships. In this type of management, fathered by Frederick Taylor, there was a strong focus

on efficiency by controlling processes with rigid rules based on rationalization. The three back bones of this management discourse were: a strong belief in the scientific reasoning; the thought that people are rational and the assumption that all people work with an economic endeavor<sup>35</sup>. Such discourse rose after the World War, when most of the countries underwent a strong economic development allowed by the industrialization. Most of the firms increased their investment in fixed asset, by letting organization become “rational machines” where employees had to be part of it.

From 1925 to 1955 the Management practices focused more on human relations and the improvement of working conditions. This phase rose within the framework of the Economic Crisis when capital investment and returns dramatically dropped. On the other hand the rise of Welfare Policies fostered by states for revitalizing the economy where took as reference also by firms, impacting in the relation with employees.

From 1955 to 1980 after the World War II the managerial discourse moved the focus on rationalism by using Computers and other devices based on Logistics and Mathematics. These Methods, such as the Operational Research were used by military in the second World War and then increasingly spread to the Business sector<sup>36</sup>. In this period managerial practices highly relied on computer science and electrical engineering principles.

From 1980 to present, within a framework of declining prosperity culminated with the financial crisis in 2008 and increasing turbulence of the society and markets, the managerial discourse have started to consider organizations as socially constructed systems where rational rules can be partially successful for controlling a company. Such movements emphasize the need to tighten the

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<sup>35</sup> Barley and Kunda (1992)

<sup>36</sup> Barley and Kunda (1992)

relationship between employees welfare and firm welfare<sup>37</sup> and developing an organizational culture allowing firms to be loosely coupled, with an high degree of autonomy of its components but at the same time a high degree of centralization through organizational actions taken applying the common organizational values.

Within this context Organizational Innovation practices flourish. In fact as it will be deep-dived in the next paragraph Management Innovation highly draws on the social subsystem of the firms leading organizational breakthroughs that in turn positively impact on the organizational performance. The most significant example of Organizational Innovation is the Lean Philosophy, that will be analyzed later on.

The evolution of managerial practices over the years it is related to the socio-economic context within which such models flourish. Theories based on rational rules that stress the investments on fixed assets seem to have developed when the profitability was linked to the management of capital. On the contrary, managerial models based on a high focus of labor and social aspects management have developed in periods characterized by a lower profitability of capital. This work will deepen the analysis in organizational changes that determine a shift in the organizational processes, structure and culture of the organizations without requiring necessarily capital investments in new technologies, R&D, Marketing.

These types of organizational changes will be referred as Organizational Innovation or Management Innovation practices.

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<sup>37</sup> Barley and Kunda (1992)

## 2.4.2 Organizational Innovation

By applying the material rationality to the organizational change, it is possible to identify what the literature calls Management Innovation or Organizational Innovation models.

It is important to highlight that this type of innovation differs from technological innovation that can be achieved by breakthroughs of products or processes resulting from R&D or Marketing investments.

Organizational Innovation on the contrary, has a strong social trait coordinating Human Resources to create new organizational structures, new organizational processes and new organizational cultures with the aim to gain competitive advantage in the long run<sup>38</sup>.

This kind of innovation has been defined by Schumpeter in the "*Theory of Economic Development*" as the fifth innovation type, "a new way of organizing".

Organizational Innovation Practices can be characterized by seven main features.

- **Newness.** These practices are perceived as new by the members of the organization implementing them. In this case, the term new refers to the relation organization-practice, so practices applied in a specific organization, considered new are included in this category even if they are already applied by other organization<sup>39</sup>.
- **Human Resources Focus.** Management Innovation has a strong social trait that, as mentioned above differs from the

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<sup>38</sup> Dubouloz (2013)

<sup>39</sup> Van De Ven (1986)

technological focus of product and process innovation. Such practices aim to increase efficiency and effectiveness by a work re-organization.

- **Tacit.** By focusing on Human resources they have less visibility compared with technological innovation. The focus of this kind of innovation is internal, within the organization and oftentimes organizations don't communicate to external parties such changes unless their results are already clear in the market. In these latter cases a virtuous cycle activates by leading the organizational practice to become a best practice in the market, sponsored by Business School and Consulting Firms.
- **Difficultness of Implementation.** Since Organizational innovation bases its innovative core in the management of the social side of the organization, its implementation is more complicated than the implementation of a new technology<sup>40</sup>. A crucial part of organizational innovation is the implementation process for which a strong focus has been kept by the literature as it will be explained later.
- **No capital driven.** Such practices are often less costly than technological innovation since don't require R&D spending. The costs of management innovation are especially related to the time needed to implement the new practice in the organization.
- **Long term outcomes.** Organizational Innovations impact on firms' performance (in terms of efficiency and effectiveness) in the long term, since changes occurred have to be absorbed by the organization itself and become routines.

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<sup>40</sup> Damanpour and Evan (1984)

- **Difficult to protect from competitors.** This type of innovation cannot be protected by patent or other tools of IP, so firms are often less prone to allocate resources for these initiatives, especially SME's that have few resources available<sup>41</sup>.

Organizational innovation can be analyzed in two different perspectives. On the one hand, as an output by focusing on the practices, organizational forms, concepts underlying the innovation. On the other hand, as a process by focusing on the sequences of activities implemented for achieving organizational changes<sup>42</sup>.

By analyzing the Organizational Innovation as an output, it is possible to identify two components determining it.

A social component, that is characterized by human resources management practices defining jobs, authority the rewarding system, the recruitment, aligning them with the central concepts of the type of innovation introduced and at the same time dealing with the social system of the organization. A technical component characterized by the tools used to achieve the planned outcomes and performing work (e.g Supplier Quality Management or Cross-Functional Product Design)<sup>43</sup>.

When thought as an output, Organizational Innovation is always measured in terms of performance impact. For a positive performance impact there is the need of the two components (the social one and the technical one) to be complementary. Hence the organizational tools used for implementing the innovation have to be consistent with the Human Resource practices used. A firm that wants to focus on cross-functional design for example, won't succeed if the human resources are managed with a departmental logic and

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<sup>41</sup> Alänge S., Jacobson S. and Jarnehammar A. (1998)

<sup>42</sup> Dubouloz (2013)

<sup>43</sup> Dubouloz (2013)

there is not a cross-functional training or cross-functional career plans.

Organizational Innovation can be also analyzed as a process by focusing on phases and activities the organization has to go through for conceiving or adopting the new practices

Since the conception of a new management practices is experimented by the most innovative firms, this work will focus just on the process of adoption of practices of organizational change, including also those firms that don't create from sketch a new practice but use best practices formulated by MNE's, Business School or Consulting firms and apply them to their organization.

The process of adoption, as explained by Dubouloz (2013) can be divided into four macro phases:

- **Initiation.** Including the awareness of threats and opportunities coming from the external environment. The matching appraisal of the new practices.

- **The Decision.** After having gauged the strengths and weaknesses of the organizational innovation applied to the organization, the decision of implementation is taken.

- **Implementation.** The practice is implemented in the organization both in terms of HR management practices and in terms of Technical Tools

- **Confirmation of the practices or withdrawal.** After having implemented the new organizational change the outcome in terms of performance have to be continually measured for taking corrective actions in case of poor results.

The difficulty in the practical adoption of organizational changes has determined a strong focus by the literature for theorizing models for organizational change implementation.

### **2.4.3 The diffusion of Innovation Management practices.**

The diffusion of organizational innovation practices has progressively increased in the last two decades as the impact of globalization on organizations got stronger.

In fact, the main management innovation sponsoring actors such as MNE's, Consulting Firms and Business School have grown their importance in the globalized era.

MNE's stand as the first sources of such practices, where management, especially in lean times, experiment organizational changes for fostering the business performance.

Once such practices practically lead to performance improvements, usually start to be analyzed by the Consulting Industry and Business School that codify the idea for reselling it to other firms or inculcating the practice to future managers.

In the globalized context with the rise of these actors, organizations increasingly undergo organizational changes to apply such models that spread across different industries. By getting recognized as best practice to be imitated, firms are pushed to adopt them. Doing so in the global markets occurs an increasingly conformation around these models characterized by a competition played by using standardized management tools, this phenomenon is called *competitive isomorphism*<sup>44</sup>

According to Birkinshaw J. Firms can apply such practices in their own organizations in two ways: by **applying the solutions of the models**. This is the most common way of applying organizational change practices, since it is the easier and the less complex. Such

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<sup>44</sup> Di Maggio P.J. and Powell W.W. (1983)

approach can be used when the model is relatively simple and does not imply other related and supportive changes in the organization. In such cases the organizational change is bounded in a certain type of practices and behavior specifically related to a department or organizational function. Such approach works especially with organizational innovation models relatively easy to be applied. An example of such models is the succession plan formulated by GE and then applied successfully by other organizations.

Copying the solution of a management practices might be a useful approach also in case the adopting firms is similar to the organization where the model was originated, in terms of business and management style.

On the other hand such approach is highly risky when the copying organization and the copied company have a totally different cultures and managerial styles and the organizational model require changes in the culture of the organization implying a series of supportive behavior to be successful. The GE management practice "*Rank and Yank*" adopted in the end of the 90's, focusing on employees' performance management where employees were continuously measured in terms of their personal performance and ranked, was a successful practice positively impacting on individual productivity. Such models drew the attention of other companies that tried to copy the solutions of this practice on their own organizations. However, the approach for applying it was unsuccessful in those organizations whose culture was not focused on individual productivity and internal competition. In fact, oftentimes apply an organizational change requires a match of the new model with the existing culture and management style that influence organizational mechanisms, especially in the social subsystem of the organization, that sometimes makes the organization incompatible to a new organizational model.

New organizational innovation practices can be applied by get inspiration from the bottom line of an existing practice, and just **applying the core idea** to another organizational context.

With this approach it is easier to overcome cultural or management differences between the adopters and the benchmark. On the other hand it is more difficult to apply because of the complexity to understand the core idea of a model. One of the most significant examples of misunderstanding in the core idea of a practice is the case of Ford that unsuccessfully tried several times to apply the Lean Philosophy but without the real understanding of the key concepts of the models.

For figuring out the core idea underlying the management practice a deconstruction of the model is required. Such approach is then definitely more time consuming and complex than the previous one but, on the other hand it may lead to more effective results.

#### **2.4.4 Different perspectives on Change Management**

Change management practices can be grouped in two different perspectives according on how they deal with change.

On the one hand organizational innovations demanding a revolution of the firm status quo. On the other hand organizational innovation models implying a slower metamorphosis of the status quo by making it evolve overtime.

De Wit B. and Meyer R. call these two approaches of change management, *discontinuous renewal perspective* and *continuous renewal perspective*.

*Discontinuous renewal perspective.* Organizational innovation practices following such approach imply a disruptive change. The core

assumption is that organizations can fluidly move from one form to another.

Organizational change is wide in terms of scope and occurs in short periods of time with swift bursts. Such dramatic organizational shifts occur for realigning the organization strategic posture with the changing environment, once such realignment is found firms go through periods of stability focused on efficiency.

Triggers for these types of change are regulatory changes that impact on the organization, competitive pressures from the market, the firm's need to exploit the first move advantage through the introduction in the market of new technologies that in turn require an organizational reform.

Such approach of change management is useful especially when firms are deeply rooted in a status quo, presenting resistances such as: *cultural* when people are stuck on their cognitive maps, that may be successful in the past, but got outdated overtime; *psychological* when people are routed in current organizational routines; since organizations are characterized by layers of authority, who retains the power might show *political* resistance to change because of the risk of jeopardize its authority; *competence lock-in* occurring when an organization specializes in competence that may lead to competitive advantage but also to organizational rigidity; *investment lock-in* when an organizations has committed a great deal of resources for a certain investment it may become less flexible to organizational changes; *Shareholders lock-in* occurring when the organizations is committed in restrictive long-terms relationships with external shareholders, such as suppliers or local communities<sup>45</sup>.

Cases of resistances such as those listed above are difficult to overcome unless using a revolutionary approach of change

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<sup>45</sup> De Wit B. and Meyer R. (2010)

management, by cutting the cords with the past with a swift, dramatic change.

*Continuous renewal perspective.* Change management practices following such approach imply an organizational reform that deploys in the long term. Small changes in a piecemeal way accumulate over time by making the firm strategic posture gradually evolve over time. Organizational change is steady, and the changes occurring have a tight scope.

The two core assumptions of this approach are: a strong focus on learning. Change brings about new practices and organizational tools that require organizational learning a process requiring a long term and trial and error mind-set.

The second key concept of this perspective is that political power is diffused throughout the organization, so radical changes of the organizational status quo are not always possible. In this way organizational innovation is more inclusive and fragmented at the same time including in a bottom-up fashion also the lower levels of the organization, in contrast with the top-down approach of revolutionary management models<sup>46</sup>.

In the continuous renewal perspective organizational change is managed with a strong focus of social subsystem of the organization in contrast with the discontinuous renewal perspective that deals with change in a more mechanistic approach.

A significant example of continuous renewal perspective is the Lean Philosophy that will be analyzed in the fourth chapter.

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<sup>46</sup> De Wit B. and Meyer R. (2010)

## **2.4.5 Organizational Innovation as a process. implementing Organizational Change**

Understanding a new management practice oftentimes it is not sufficient to translate that model into an effective improvement in the organization's performance.

The implementation of organizational innovation model is probably the most crucial task in the change management process. The complexity of this phase is due to the need of managing the social subsystem of the organization that can be seen as a field of forces that have to be managed when implementing the new model.

Changing organizational processes, culture and structure imply changes in managers and employees work and lives, that can be viewed as positive or negative according to their relation with such changes<sup>47</sup>.

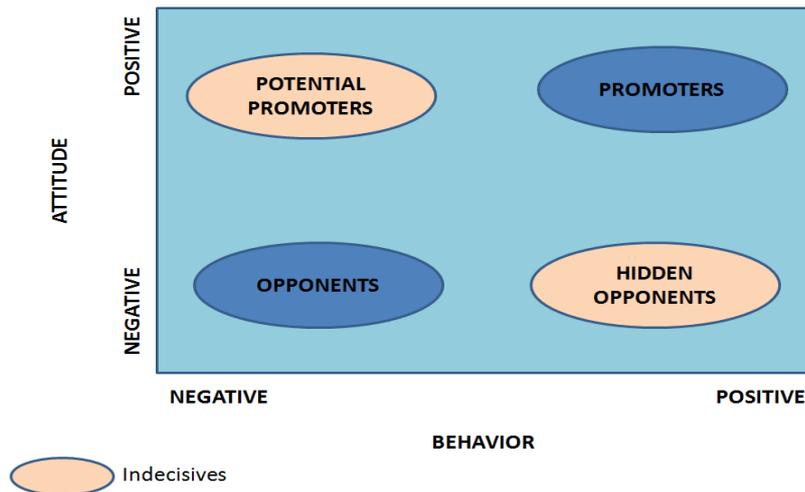
Another important factor impacting on the social field of forces of the firm is the availability of information regarding the consequences of change. If the organization has clearly communicated the effect that planned changes will have in the organization in turn promoters and opponents to change will be defined. On the other hand, if the organization maintains uncertainty about the change consequences, will be more difficult to define opponents and promoters to change, and such uncertainty will impact negatively on people performance through anxiety, fear, hope and a mixture of intense emotions.

The socio-psychological perspective with a focus on people has to be taken into consideration for making the change management more effective.

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<sup>47</sup> Kruger W. (1996)

Kruger W. (1996) suggests that the starting point for effectively manage change implementation is to influence the field of forces in the organization, characterized by identifying the different groups of people in the organization according to their attitude towards change and their behavior.



Source: Kruger W. (1996), "Implementation: the core task of Change Management", Cems Business Review, Vol 1

**Figure 2.4.4.1**

These different groups have to be managed differently since they have different expectations from the organizational change. At the same time differentiated management approach have to be integrated one another to ensure efficiency and effectiveness of the implementation.

The most common model used for guiding the implementation of change is the "Unfreeze, change, refreeze" model of Kurt Lewin (1947) stating firstly the need to foster awareness and acceptance of change rooting out resistances to change and awakening the need for change<sup>48</sup> (Unfreezing); secondly the need to implement the changes planned in the organization by practically developing new procedures, values, structures (Changing); thirdly the need to reinforce changes

<sup>48</sup> Mills J.H., Dye K. and Mills A.J. (2009)

implemented making and increasing consistency between the changes brought and the organization (Refreezing).

Taking as reference the Lewin's "*Three-step model*", Kruger (1996) highlights different types of implementation management to be used for going through the implementation process.

*Management of perceptions and beliefs.* It is used in the "*Unfreezing*" step, for lowering barriers of change and increasing the need of change throughout the organization. Stating mission of the change, setting clear objectives, developing symbols and rituals characterizing the mission, defining sponsors of change and role models are *Management of perception and beliefs* typical activities.

This kind of management is usually used for winning over opponents (negative attitude and negative behavior) and hidden opponent (positive behavior to change but negative attitude).

*Power and politics management.* It is applied in the "*Unfreezing*" and "*Change*" phases aiming at behavior acceptance of Opponents and Potential Promoters (negative behavior and positive attitude). "*This type of management works through horizontal integration (colleagues and peers) and vertical integration (direct superiors)*"<sup>49</sup>.

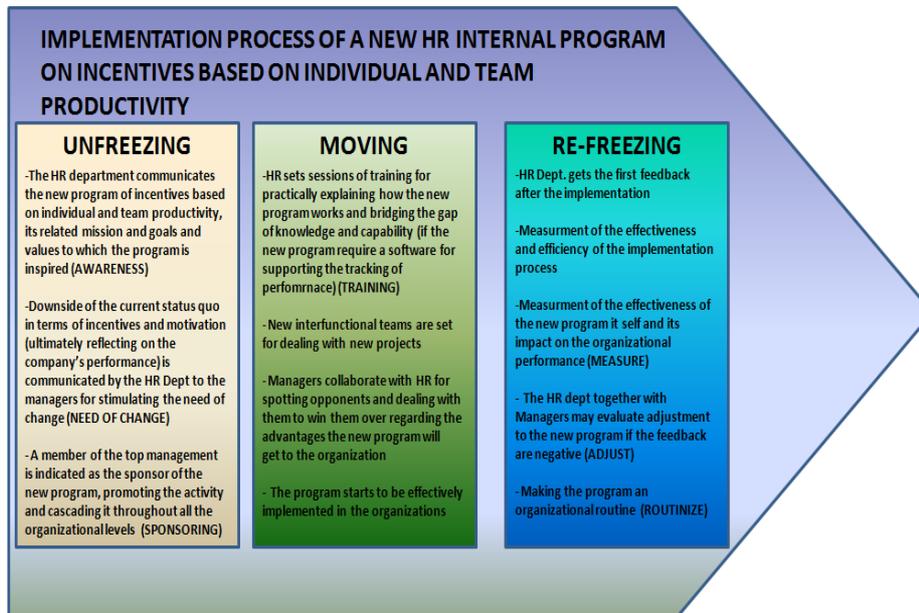
*Issue Management.* It is related to the "*Change*" and the "*Refreezing*" steps, using tools such as training, workshops, documenting supervising, performance measurement. The purpose of such management is to give the employees working in the organization the information and knowledge to the new model adopted, building procedure for practically implement the new practices and at the same time reinforcing the change implemented by constantly measuring the performance improvements and the consistency of the new model to the organizations. Issue

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<sup>49</sup> Kruger W. (1996)

management focus both on efficiency in the implementation process, in terms costs and timing (by elaborating workflows and procedures for translate the model into practice) and on quality of implemented changes (measuring change performance and consistency with the organization).

### Example of an new program Implementation Process



## 2.4.6 An example of Organizational Innovation.

### The case of Holocracy.

A significant example of management innovation that recently has become well known by almost all the business practitioners is *Holocracy*.

Such model was developed for the first time in 2007 by Ternary Software an American company whose founder Brian Robertson, wanted to experiment a more democratic way for running its company.

The term *Holocracy* has been derived by the term holarchy, coined by Arthur Koestler in his 1967 book *The Ghost and the*

*Machine*. The author argues that the brain is composed by *holons*, autonomous and self-determining unit yet also fundamentally dependent on the brain as a whole.

These definitions perfectly reflect the bottom line of *Holocracy*, a new organizational model based on decentralized management and self organizing teams.

Like others organizational innovations developed by firms (e.g. the Six Sigma of GE or the Lean Manufacturing of Toyota), the new practice hit the headlines of several business newspapers increasing the interest of business schools and consulting industry that have started to analyzing the model for extrapolating the key concepts and rules for codifying it and making transferrable.

The first relevant adopter of *Holocracy* is Zappos, an online vendor of shoes and clothes located in the Silicon Valley part of the Amazon Group.

This new practice emphasize a change in the organizational structure and processes but at the same time for undergoing such shift it is necessary also a change in the organizational culture by encompassing values of organizational democracy.

*Holocracy* model is characterized by a key organizing element, a circle. A circle can include one or several organizational roles. The highest circle is the General Company Circle encompassing the main functions performed in the organization. Sub circles are created within the General Company Circle. The emphasis of the structure is on organizing work on teams and distributing authority throughout the organization, avoiding a top down hierarchy and fostering creativity of teams that are both self-determining and integrated to the whole organizations.

One of the main traits of this model is the active resolution of organizational tensions (a gap between what it should be and what is the reality) through two main organizational tools:

**Governance Meeting Process** aiming at defining the structure in terms of roles and responsibility. Such definition is dynamic according to the tension the organization deal with. Moreover it is inclusive since anyone in the team can concur for such definition. With such approach there is a continuous restructuration of the organization.

**Operations Meeting Process** aiming at the management of the day-to-day work and processes, defining actions to be taken for dealing with tension on organizational processes.

What is peculiar of *Holocracy* is that these two tools are kept separate according to the type of tensions that have to be managed. On the one hand Governance Meeting Processes focus on the “*working on the business*”, that is a more long term and strategic focus. On the other hand Operations meeting processes focus on the “*working in the business*” dealing with the more tactical and operating tensions in the organization (e.g. how to improve the performance of a certain process). Nevertheless both Governance and Operations Meeting process are performed in the teams, highlighting once more the accent on authority distribution and centralized management principles

Another peculiar trait of *Holocracy* is that it uses a specific software (*Glass Frog*), storing the organization constitution, the output of all Governance and Operations Meeting and the description of any role in the organization.

Focus on governing role rather than people, defining dynamically roles’ purpose and accountabilities is another feature of such organizational model.

Applying *Holocracy* to an organization might be not always fruitful. Such model due to its strong focus on organizational democracy and team work can be applied easier in organizations that

strongly rely on creativity and have already experience on team working.

It is not a case that such model is having its greatest resonance within the Silicon Valley where most of the companies working in that area base their competitive advantage on creativity, flourishing in teams of programmers.

Whereas many organizational innovation models can be applied by taking just some tools characterizing them, *Holocracy* for being applied successfully requires a wide-organizational shift especially in terms of organizational culture.

Some skeptics have raised concerns on the concrete applicability of such model. This is the case of Jeffrey Pfeffer of Stanford University arguing that "*hierarchy is a fundamental principle in all the organization systems*".

Despite promoters and skeptics *Holocracy* represent the one of the most recent cases of organizational innovation.

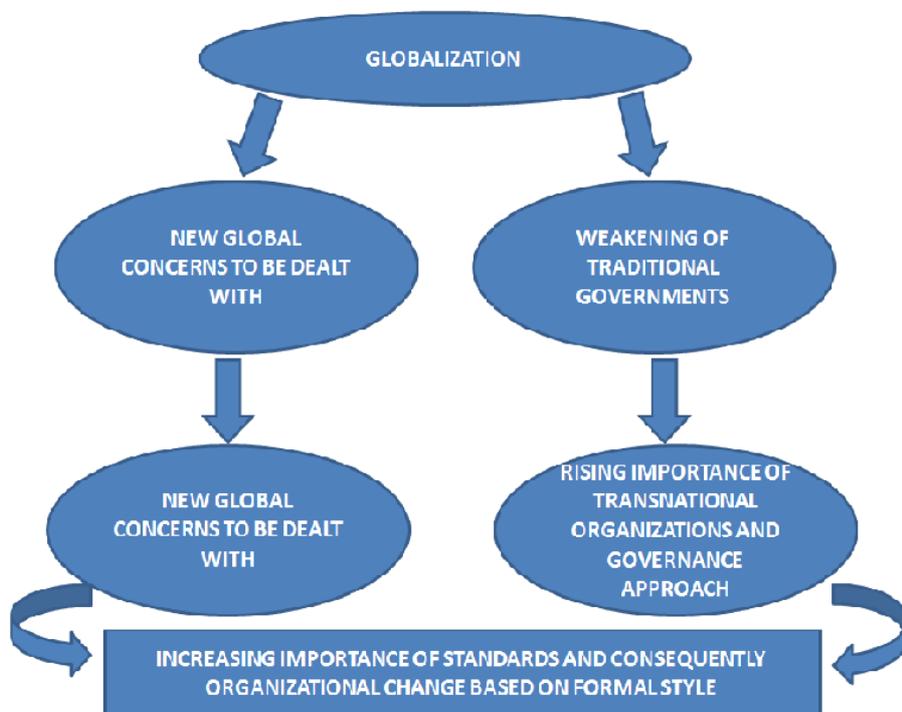
## **2.5 Formal Style of Organizational Change**

Organizational change is not always the result of the implementation of management innovation models according to the firm's interest to improve its performance. It might be also the result of the organization's need for compliance to rules and standards imposed by the society, that oftentimes is in contrast to the firm's self interest. This latter case of organizational change is the consequence of organizations' action according to material rationality.

The globalized era, with rise of a new global culture and the weakening of the nation states balanced with the increase influence of transnational organizations, is the perfect context for organizational change based on formal style to flourish.

In fact, new transnational organizational actors increasingly gain importance in terms of regulative power, by adopting a governance approach where they play a teaching role at the international level, spreading management standards to firms across the world.

Such standards are the direct reflection of global concerns characterizing the new born globalized culture. For dealing with such issues, organizational models are codified and applied to firms across the globe.



**Figure 2.5.1**

One of the most significant examples of global concerns that has originated global standards of compliance imposing firms organizational change according to a formal style, is the environmental pollution and the need to implement eco-management standards in organizations making them sustainable. The result of such global concern together with a governance approach of

transnational organizations that stimulates the spawning of voluntary agreements<sup>50</sup>, has been the formulation of EMAS (Environmental Management Schemes) in the 70's. Such soft regulating tool encourages organizations to incorporate eco-management practices in the organizational structure, organizational processes and organizational resources. The main purpose of EMAS is to control the environmental impact of firms by providing a framework as reference of eco-management practice and suggesting periodical audits for measuring the environmental impact of such organizational actors.

However, this voluntary policy instrument does not specify which tools have to be used for keeping environmental impact under control, remaining highly generalistic. Another example of eco-management standard is ISO14001 spread by ISO, that over the last years has overtake EMAS as main Eco-Management standard applied globally. As for the ISO9000, that will be analyzed separately in the next chapter, ISO14001 standard allows organization to get certified globally in terms of environmental impact by following the suggestions of the standard that are still high generalistic.

Such certification in turn, allows firms to be legitimized in the society as organizational actors aware and proactive to global concerns by giving them advantages in the markets in terms of reliability towards external stakeholder.

With the rising need of compliance with these standards, firms compete not just for getting resources and increase their market shares (giving rise to the *competitive isomorphism*), but also for gaining political power and institutional legitimacy in the society<sup>51</sup>.

In this latter case, given the need of compliance with standards that are direct reflection of the global society concerns, there is an

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<sup>50</sup> Wurzel R., Zito A. and Jordan A. (2013)

<sup>51</sup> Di Maggio P.J and Powell W.W (1983)

increasing isomorphism of organizational change practices based on material styles.

This type of isomorphism is defined by Di Maggio and Powell(1983)as *institutional isomorphism*.

There are basically three mechanisms that activate *institutional isomorphism*<sup>52</sup>:

*Corecive isomorphism*. Result of formal and informal pressures exerted by transnational organizations and governments. This mechanism is effective since organizations are not tightly bounded, but instead are affected by the legal environment within which they operate. That's the case of the development of ISO standards in Europe, favored by the inclusion of such standards in the requirements for developing the EU market.

*Mimetic Isomorphism*. Result of the uncertainty characterizing the markets. In turbulent markets organizations tend to model each other for minimizing the risks. This can be viewed also in the mimicking of management standards that are applied to gain more legitimacy in the society and increase their possibility of survival in an environment that is increasingly risky.

*Normative Isomorphism*. Direct result of professionalization, a process through which members of an organization strive for defining their working conditions and methods of their work. The two main drivers of this process are the educational system, that in the globalized era increased its importance with the rise of Universities and Business Schools, and networks of professionals.

These two drivers increasingly affect organizational changes based on the material style by promoting them. "*This mechanism creates a pool of almost interchangeable individuals who occupy*

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<sup>52</sup> Di Maggio P.J and Powell W.W (1983)

*similar positions across several organizations and posses a similarity of orientation that may shape the organizational behavior*<sup>53</sup>.

The increasing pressures on compliance with management standards spread by Transnational Organizations have led to the rise of a new industry, where standards voluntarily created are sold at expensive prices by Organizations such as ISO or IEEE.

According to Rada R. and Berg J. the extent to which companies pay higher the compliance of standard depends on the political context where they operate. If a firm operates in a context where standards such as the ISO ones are almost mandatory, will be more likely that the certification of compliance with those standards will be more expensive (This might be the case of European countries) whereas, if a company operates in a nation that does not keep too much focus on the compliance with such standards the price for getting the certification will be much lower.

With the increasing rise of the internet, such industry may evolve to a model where certifications may be obtained for free although it seems difficult that such consolidated industry that increased its importance with the globalization will relinquish its high profits.

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<sup>53</sup> Di Maggio P.J and Powell W.W (1983)

### **3. ISO9000 a Management Practice based on Formal Rationality**

#### **3.1 What is ISO9000 and how it works**

In the previous chapter has been highlighted the difference between Management Practices leading to organizational change that are based on Material Rationality and those based on Formal Rationality. In this chapter will be analyzed the case of ISO9000 Standards, that are included in the second group.

ISO9000 standards are developed by the International Organization for Standardization (ISO). They define and assure a quality system for manufacturing and service firms.

The ISO set of Standards on quality are composed by three parts:

- ISO9001 *Quality Management System – Requirements* issued in 1987 taking as reference the BS5750 issued by BSI (British Standards Institution) and then revised twice, in 2000 and in 2008 (the current version ISO 9001:2008. The last version includes also ISO9002 and ISO9003 that were previously kept separated. The standards contain the requirements that organizations have to meet for managing quality in accordance to ISO. Such requirements are general and can be applied in every industry.

- ISO9000 *Quality Management System – Fundamentals and Vocabulary*, issued for the first time in 2000 and then revised in 2005(ISO9000:2005). The norm describes the vocabulary, the main principles and the organization of the ISO quality standards

- ISO9004 *Managing for the sustained success of a Organization – A Quality Management Approach* issued in 1994 and then revised twice, in 2000 and in 2008 (the current version

the ISO 9004: 2008). The norm is a guideline for favoring the sustained success through the management of quality.

The first standard is the one for which organizations have to comply with to obtain the certification. The other two supplement the first one but are not binding for getting the certification. In this work the term ISO9000 is referred to the set of three standards listed above, however for gauging the ISO9000 impact on organization there will be a specific focus on the ISO9001:2008 that is the one requiring firms organizational reform to be certified.

### **3.1.1 The ISO Organization and the standards development**

The Organization for International Standardization is the entity in charge of developing and publishing the standards. The ISO, founded in 1947, is based in Geneva (Switzerland). Whereas ISO is a Non-Governmental Organization (ONG), implying that it has not the power to issue legally binding norms, its political weight has largely increased with the Globalization and the rise of a new global culture.

The organization is characterized by the participation of 163 members countries, forming the General Assembly. There are several types of membership:

- *Member Bodies (or Full Members)* influencing ISO standards development and strategy.
- *Correspondent Members* participating to standard and strategy development meetings but without influencing them. They sell and adopt the standards nationally.
- *Subscriber Members* are informed on ISO work but don't participate at all on it. They don't sell and adopt the standards nationally.

Twenty members bodies and the principal ISO Officers take part to the ISO Council, in charge to most of the governance tasks of the organization.

The Technical Management Board, reporting to the ISO Council, takes care of the technical work and supervises the Technical Committees, responsible for standards development.

The standard development process goes through six phases, three of these phases are mandatory while the other three are optional.

*The Proposal Stage* (mandatory) is related to the confirmation that the new standard in a certain subject area is really needed. A New Work Item Proposal (NWIP) is submitted to the committee for approval. A project leader is nominated. A specific focus is put on patent, copyright and conformity issues.

*The Preparatory Stage* (optional), when the parent committee set up a Working Group (WG) to prepare a Working Draft (WD). The Working group is composed by the Project Leader and a group of experts. The Parent committee receives the draft formulated by the WG and decides which stage to go next (Committee Stage or Enquiry Stage).

If the parent Committee has opted for the *Committee Stage*, the draft will circulate within the committee and discussed for possible revisions.

If the Parent Committee is decides to go to the Enquiry Stage, the Draft International Standard (DIS) is forwarded to the Central Secretariat and in turn it circulated to all the ISO Members who get three months to vote and comment on it. The DIS is approved if a two-thirds of the P-Members of the Technical Committee are in favor and not more than one-quarter of votes are negative.

If the Draft is approved it goes directly to the *Publication Stage* performed by the Central Secretariat. If the draft has been

significantly revised the Parent Committee can decide to use the *Approval Stage* by submitting the Final Draft International Standard to ISO Central Secretariat. The Draft is then circulated to all ISO Members and voted within the next two months<sup>54</sup>.

Such development process for standards is applicable for all the standards elaborated by the ISO. Once the Standard is published, it gets ratified nationally by the National Standard Bodies (Ente Nazionale di Unificazione for Italy) that are members of the ISO Assembly.

In the next paragraph it will be deep dived the ISO 9001:2008 content, the standard for quality describing the requirements organizations have to comply with to obtain the certification. Such compliance requires in turn a reform in the organization that whereas it aims to quality improvements in the organization, it is not always performed to reach higher level in the quality management, differing ISO9000 from others Management Practices.

### **3.1.2 ISO9001:2008 The Quality Management System**

The ISO9001:2008 Standard is the pillar of the ISO quality set of standards. It is supplemented by the other two standards part of the series: ISO9000:2005 and ISO9004:2008. In this work will be deep-dived the ISO9001:2008 that is the standard imposing organizational reform to the firms that want to be ISO certified.

The ISO9001 was at first issued in 1987, taking as reference the standard on quality issued by the British Standard International (BS5750), than was revised in 2000 and in 2008 ISO published the last version of the standard ISO9001:2008.

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<sup>54</sup> [www.ISO.org](http://www.ISO.org)

The standard is binding for organizations that want to get the ISO certification. On the one hand it presents requirements that are extremely general making the standards applicable to every type of industry, on the other hand such general approach might shed lights on the subjectivity of the evaluation criteria for assigning the certification.

The quality system on which the standard is based put focus on:

- *Organizational processes and a systemic management of them.* In this sense organizational activities are thought as a series of processes that get inputs from upstream activities and turn them into output that will be used in turn by other activities as inputs. Typically firms are composed by several processes interrelated each other, that have to be managed in a systemic way by thinking of the relations that a process has with the others. Moreover, every process has to be governed by a series of rules/requirements that the organization has to define, so that the predictability increases and at the same time the risk diminishes.

- Process Management is in turn performed with a strong *focus of the final customers.*

- *Strong involvement of all levels personnel* for achieving and maintain an efficient and effective quality system throughout the organization.

- Continuous improvement, starting from the assumption that mistakes are inevitable, procedures for spotting, understating, and correcting them have to be put in place for making such improvements effectives.

- Value creating relationships with suppliers.

The points listed above on which the standard is focused on, highlight that the type of organizational change the norm implies is continuous without overthrowing the status quo, but instead taking it

as reference and improving it through a better management of processes. This approach to organizational change is similar to the organizational reform imposed by the Lean philosophy. However, the motive (“the why”) of ISO 9000 application can strongly impact on the type of organizational change making it differ with the Lean Model especially on the actual change occurring in the organization.

The ISO9001:2008 content is characterized by eight chapter organized as follows:

1. Scope
2. Normative reference
3. Terms and Definitions
4. Quality Management System
5. Management Responsibility
6. Resource Management
7. Product Realization
8. Measurement Analysis and Improvement

The requirements that an organization have to meet for be ISO certified, after the third party verification, are the ones from the number 4 to the number 8.

By summarizing these requirements we can divide them in four categories:

*Management Requirements* defined as the management commitment to apply and sponsoring the standard throughout the organization. Such commitment can be put in practice by developing a Quality Strategy the Top Management wants the organization to follow and the related objectives to achieve by processes, functions and product the organization aim to. Moreover the Top Management

by committing to the ISO9001:2008, has to make available all the necessary resources.

*Processes Requirements* highlighting five categories of processes that are crucial in determining the product realization:

- *Processes related to Customers*, defined as those processes that for being performed require the communication with the final customer. ISO 9001:2008 requires the organization to set the standard rules regarding the data acquisition for defining the customer needs; the feasibility analysis on the products/services the organization wants to offer to the customer according to the needs spotted in the market; the correct formulation of contract and the effective communication with customers.

- *Processes related to the development of new product and services*, defined as those activities related from the idea conception, testing and new product approval. In this case the standard requires the organization to set rule for: defining in advance what has to be developed; planning the development and determine the stages the product/service development has to go through; verify and validate what has been developed.

- *Processes related to the suppliers relationship*, in this case the requirements imposed by the norm are related to the definition of: Supplier Selection Criteria; the definition of rules regarding the information that has to be communicated to the supplier during the business relationship; defining rules for the merchandise receipt avoiding quality risks.

- *Manufacturing processes*, defined as those processes performed by the organization, that turn the input received from suppliers into the final product/service that the organization will sell to its customer. The norm imposes the definition of rules related to: the definition of the production phases required to produce the final

product; production programming functional to the production needs (e.g. a production programmed in relation to the orders priority); defining the raw material management during the production process; process condition validation under which the product/service has to be produced; definition of the rules for releasing the final product to the customer;

- *Supporting Processes*, including Infrastructure Management and HR Management. Even for this type of processes the ISO9001 indicates some requirements for the correct management. For the first type the organization has to track the competencies, personal characteristics of its personnel; it has to: set a plan for training in accordance to the HR strategy and its related objectives in terms of competencies development. Regarding the Infrastructure Management, the organization has to: define the maintenance plan and storing the documents related to the maintenances performed.

*Resource Management requirements*, this point is related to the Personnel Management; Infrastructure Management and Working Environment Management. For these types of requirements the norm emphasizes the documentation storing as a method to keep track of the action performed and giving a way of analyze how to improve continuously.

*Measurement System requirements* are another point highlighted by the ISO standard. In this sense the two points on which the norm focuses on are the periodical audit of the measurement system to guarantee the preciseness and reliability. Moreover, the organization has to define a series of procedures for managing cases in which the measurement system is flawed.

According to the ISO standard the organization has to define also a system for measuring the customer satisfaction, the norm does

not impose any specific system and leaves to the organization the choice on the type of system to use.

Periodical internal audit on processes are required by the standards taking as reference the documentation elaborated by the organization (The Quality Strategy; the Quality Manual; and the Procedures required by the ISO). Such audit it is considered fundamental both for spotting non-conformities and for give rise to improvement opportunities.

A procedure for managing non-conformities has to be put in place for spotting non-conformities; define the related responsibility; analyze them; and take action to correct them. Moreover, other than managing non-conformities, the standard requires the organization to set a procedure to prevent them.

Once again the requirements present a general trait leaving the organization the freedom to choice the specific method to meet the requirement.

The ISO9001:2008 impose the organization to keep documentation regarding the Quality Management System put in place for the certification. Such requirement usually discourages lots of firms since such way of working is seen as a bureaucratization slowing down the operating routine.

The documents that have to be mandatory elaborated are the following:

1. The organization quality strategy and its objectives
2. The Quality Manual (indicating: the context in which the system is applied; the processes characterizing it; the procedures set for managing the quality system)
3. Mandatory Procedures: Documentation Management; Internal Audit Management; Non-Conformities Management; Corrective Actions Management; Preventing Actions Management

Despite the bureaucratic burden, the standard leaves the organization freedom on the choice of the form and the degree of detail of the documentation.

### **3.2 ISO9000 factors of diffusion**

In the last two decades ISO9000 standards have spread dramatically around the world. Such phenomenon has been driven by the Globalization, that on the one hand has shorten the distances from one country to another, increased the business interchanges and created a global market, on the other hand has given rise to a new global culture generating a new values that influence the spread of these kind of phenomenon (e.g. the rising need of rationalize and standardize as explained in the previous chapters). This new culture has given rise to new important actors in the global scenario, playing a central role in the diffusion of such practices (e.g. Business Schools, Consulting Firms, ONG). Within this framework ISO standards have found a fertile field to spread and increasing its importance globally as management practice imposing organizational change.

However, the diffusion of the ISO 9000 has not been uniform. In such global diffusion can be identified early adopters and later adopters. In the first category are included especially European Countries (e.g United Kingdom) who were the first to adopt the standards, whereas in the second category are included Far East and African area countries. Such difference in timing of adoption impacts on the diffusion speed. In fact, whereas in the earliest stages of adoption the speed of diffusion is slower, in the later stages the speed increases due to the fact that the risk bearing is lower for later adopters<sup>55</sup>.

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<sup>55</sup> Albuquerque P., Bronnenberg B., Corbett C. J. 2007

Moreover, as it will be analyzed in the next paragraph, the drivers of adoption impact on performance seem to be different depending on the timing of adoption.

The spreading of the standard is also facilitated by its own characteristics, especially its general approach that makes it applicable to any industry.

Yet, according to Albuquerque P., Bronnenberg B. and Corbett C. J. (2007), other factors influencing the diffusion of ISO 9000 may be geography proximity (the case of industrial cluster is significant for understanding how geographical proximity allows to social contacts that in turn lead to mimicking phenomenon); culture proximity in the sense of similarity of cognitive frameworks of companies working in the same country, this similarity leads to a faster flowing of information; economical proximity between firms and in this sense supply chain relationships between firms is maybe the most relevant driver to the standard diffusion.

In fact, given the global spread of ISO 9000 standard from the beginning of 90's till last years (see next paragraph), it can be noticed that early adopters are mostly developed countries, that usually play a downstream role on supply chains and later adopters are mostly typical exporting economies (e.g China) that play an upstream role in supply chains. In this sense pressures to adopt ISO quality standards comes from downstream in supply chains, where firms operating in developed countries deals with customers imposing more stringent requirements and higher transparency on quality. In turn, organizations operating in early adopting areas put pressure upstream on their supplier (exporting economies that are usually developing countries adopting later the standards). Once part of the firms located in later adopting countries adopt the practice, the standard is further spread internally by traditional diffusion

mechanisms (e.g. pressure from exporting firms, trade organization, word of mouth, mimicking)<sup>56</sup>.

In this sense economic proximity and more specifically supply chain relationships have seemed to be the most significant driver for the global diffusion of ISO9000 standard.

### **3.2.1 Empirical analysis of diffusion**

As highlighted in the previous paragraph the diffusion of ISO 9000 quality standards has increased dramatically in the last two decades. However, such expansion has occurred not uniformly and with a timing difference across countries.

It is important to notice that analysing the diffusion of such management practice is easier in terms of data availability with respect to other types of management practice. Such difference is due to the main features of the practice that are the related possibility of certification and its higher standardized approach. These two traits highlight once more the firms' need to use such management practice as a "businesscard" for being more legitimized in the global society with the consequence of more effective business relationships and more survival prospects.

The last available ISO survey database, published in 2013 with a data consolidation until 2012, has been taken as reference for the analysis, published in 2013 with a data consolidation until 2012.

As shown in figure 3.2 the number of ISO certification is currently above 1 million worldwide. In the 90's the European Region presented the highest number of subscription showing the relevance of the region where the ISO standards were born. By the beginning of the 2000's the weight of East Asia region has progressively increased

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<sup>56</sup> Corbett C.J. 2006

(as highlighted also in figure 3.2.1) supporting the thesis regarding the pressures of adoption coming from downstream in most of the supply chains. Moreover by still taking a look at the figure 3.2.1 it is possible to notice that the number of certification of later adopting countries has grown faster with respect to the growth of certificate of early adoptin countries supporting what mentioned in the previous paragraph regarding the difference of speed in the diffusion of the certification between early adopters and later adopters.

In figure 3.2.1 showing the regional shares of certification, it is possible to notice that Europe and East Asia regions have the majority of the shares since 1993 (roughly the 80%/85% of the total certifications).

North America has never had a relevant share since 1993, highlighting the low interest toward this kind of management practice that according to the majority of the U.S companies increase drammatically the organization bureaucracy without having any impact on the firm's performance.

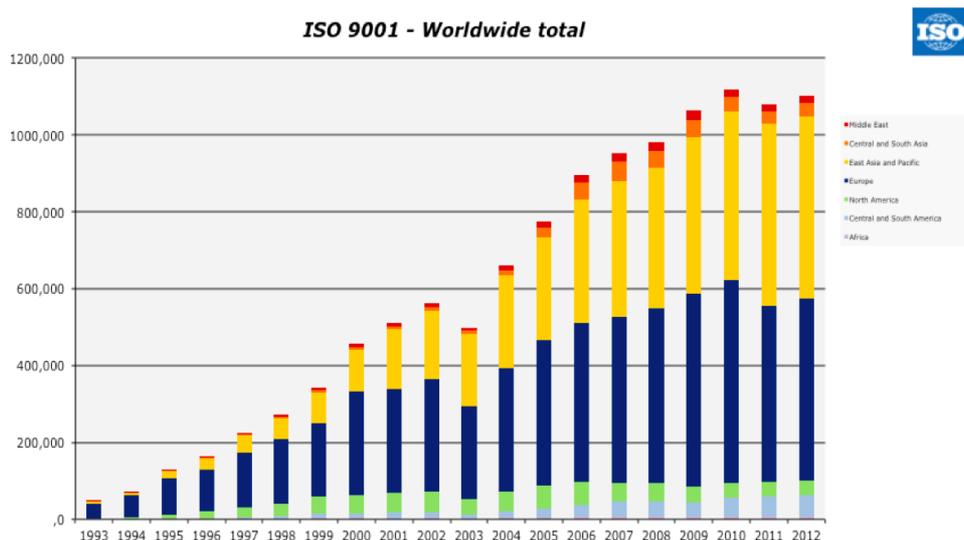
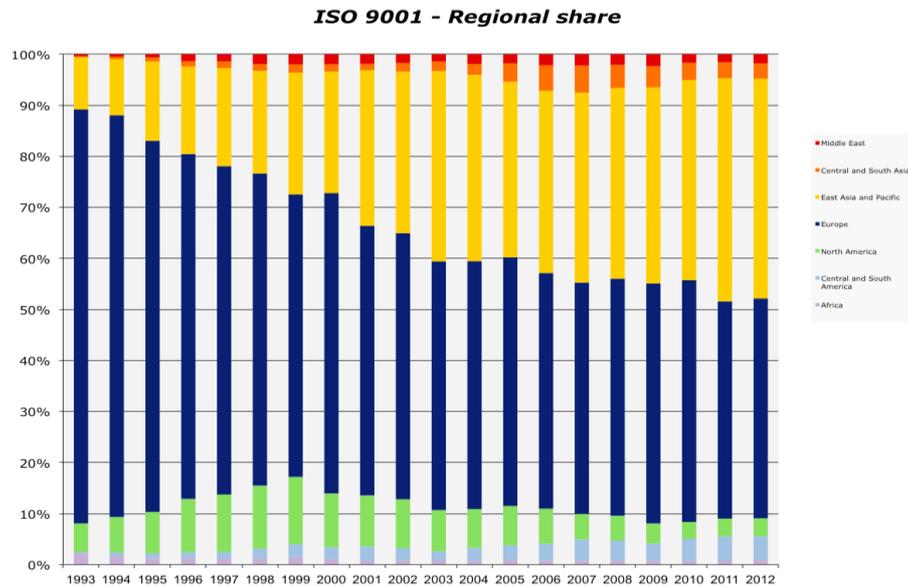


Figure 3.2 Source: www.ISO.org



**Figure 3.2.1** Source: [www.ISO.org](http://www.ISO.org)

By taking a look at figure 3.2.2 showing the World annual growth in %, it can be noticed that whereas the rate of growth is positive for almost every year since 1993, such rate has progressively decreased. In fact, such decreased is reflected in figure 3.2 showing a path of the number of certification similar to the S-curves, suggesting that in 2012 the number of certification at the global level has reached almost the saturation point. This would support the thesis of Marimon F., Heras I., Casadesus M. (2009), that have divided ISO adopting behavior of several countries into three categories, assuming that each adopting behavior is going through a phase of the S-curve.

*Expansionist Behaviour:* the adopting behavior of countries that are going through the initial phase of growth along the S-Curve.

*Mature Behaviour:* those countries that have reached the saturation of ISO 9000 adoption.

*Retrocessive Behaviour*: those countries that are already in the declining phase of the S-Curve and are undergoing a phenomenon of decertification.

In the analysis of the growth rate, it can be also noticed that, in 2003 there is a significant negative growth rate where the number of certification around the world has decreased with respect to the previous year. This can be due to the revision of the standard in 2000 for which most of the organizations that were certificated to the 1994 version have delayed to subscribe to the new standard.

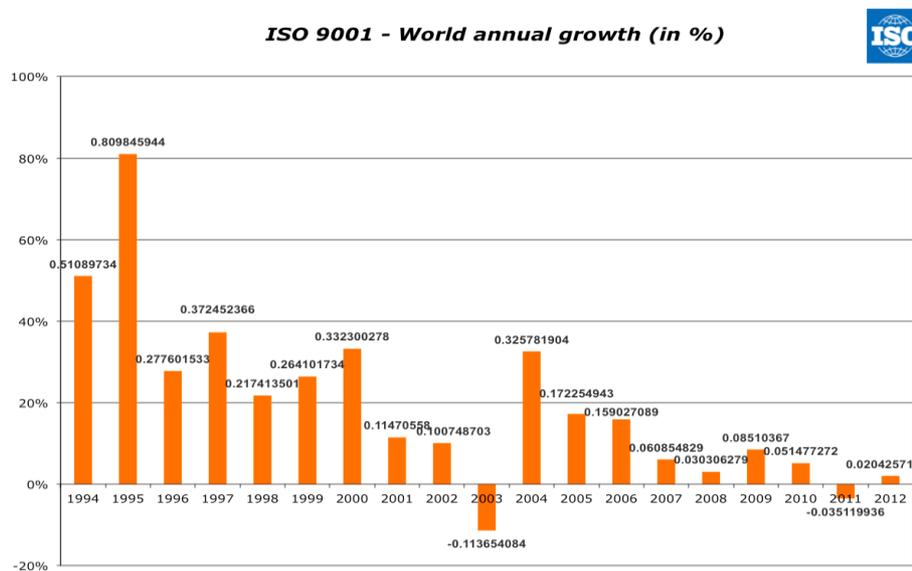


Figure 3.2.2 Source: www.ISO.org

After having analyzed the data at the global level it has been decided to deep-dive on the data related to the European Region, that is the most significant in terms of ISO 9000 evolution.

The ISO 2013 data-base related to Europe has been re-elaborated dividing the region into sub-regions for analyzing what parts of Europe have been more involved in the ISO 9000 diffusion.

The sub-regions defined are: Balcans (ex. Jugoslavia); Scandics; Central Europe (Netherlands; Switzerland; Luxemburg; Czech Republic; Slovakia and Austria) ; East Europe (Hungary; Romany; Ukraine); Southern Europe (Greece and Turkey included); Western Europe (Spain; France; Germany; Italy; Portugal; Ireland and U.K.). Despite Germany would better be included as “Central Europe”, the choice of the analysis has been to group the most important economies of Europe for better analyzing to what extent they have been involved in the ISO 9000 diffusion.

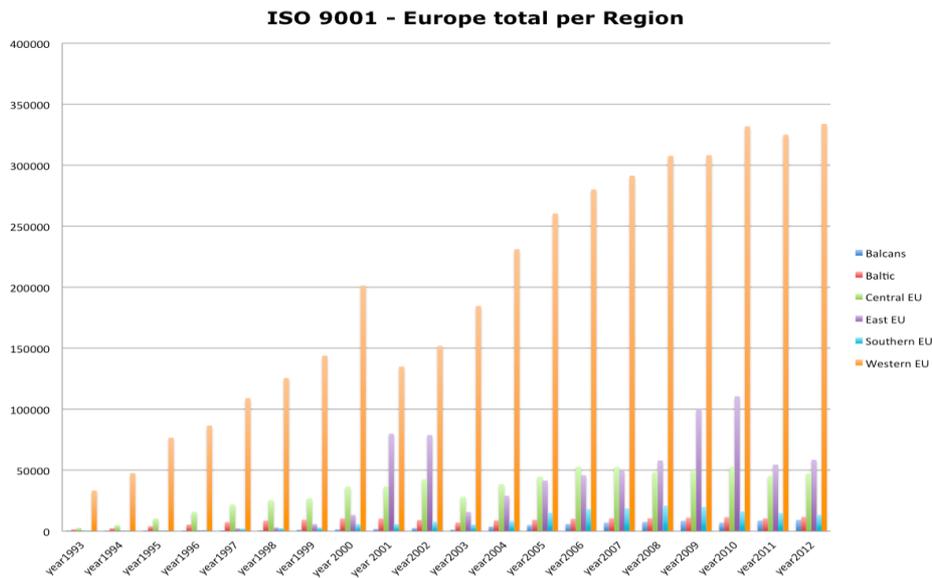


Figure 3.2.3

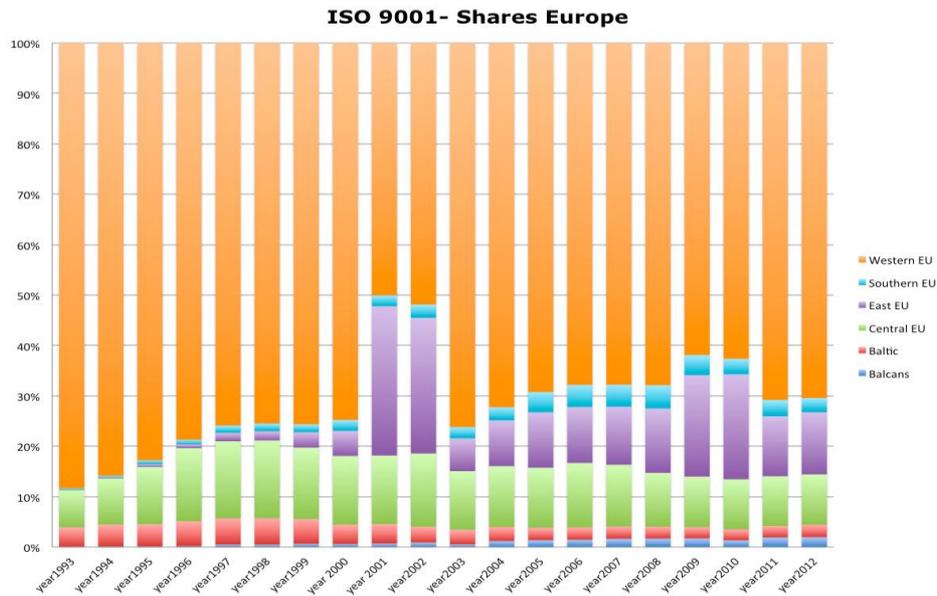


Figure 3.2.4

By taking a look at figure 3.2.3 and 3.2.4 it can be noticed that most of the European certifications come from the most important economies (France; Germany; Italy; Ireland; Spain; Portugal and U.K). From 1993 to 2013 Western Europe has an average share of 71% of the total European certifications. From 2000 to 2012 there is also a relevant increase of certifications coming from East European Countries, especially Romany and Ukraine. Such increase can be similar to that of East Asian Countries, in fact with the intensified Globalization most of European firms operating in developed countries have increasingly tighten their supply chain relationships with firms operating in East Europe, because of the low cost manufacturing opportunities available in those areas. In this sense, the relationships with East Europe countries have increased the pressure on quality issues and firms operating in those area have increased the certifications for maintain their business relationships with European developed countries. Such consideration would support once again that ISO9000 is a management practice mostly adopted

to obtain more legitimation on the market with a behavior based on formal rationality.

In figures 3.2.4 and 3.2.5 has been further deep-dived the analysis by taking into consideration the most relevant Economies of the sub-region “Western Europe” (France; Germany; Italy; U.K; Spain) that have also played a central role in the ISO9000 diffusion worldwide.

It can be noticed that in the 90’s U.K was the country with the highest number of certification. However from 2000 the number of certification of organizations coming from U.K has strongly decreased, suggesting that U.K is in its declining phase on the S-Curve of ISO adoption. On the other hand from the 2000 the number of certifications of Italian firstly and then Spanish organizations have increased rapidly, especially for the Italian ones. Nevertheless, the rate of growth for both Italian and Spanish organization has been decreasing, with a negative rate of growth in 2012 with respect to 2011 for Italy. Such pattern suggest once again that ISO standard diffusion is following a pattern similar to the S-Curve, where Italian Organizations have reached the saturation level of certifications.

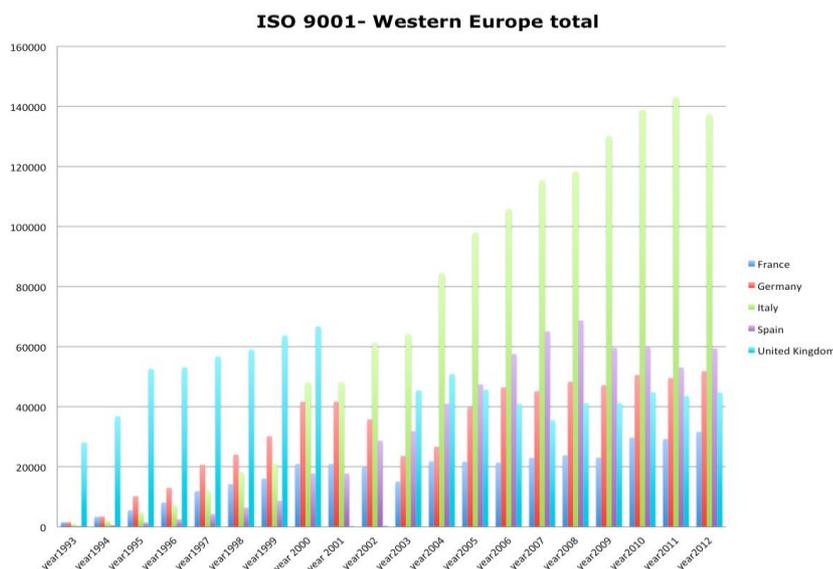


Figure 3.2.4

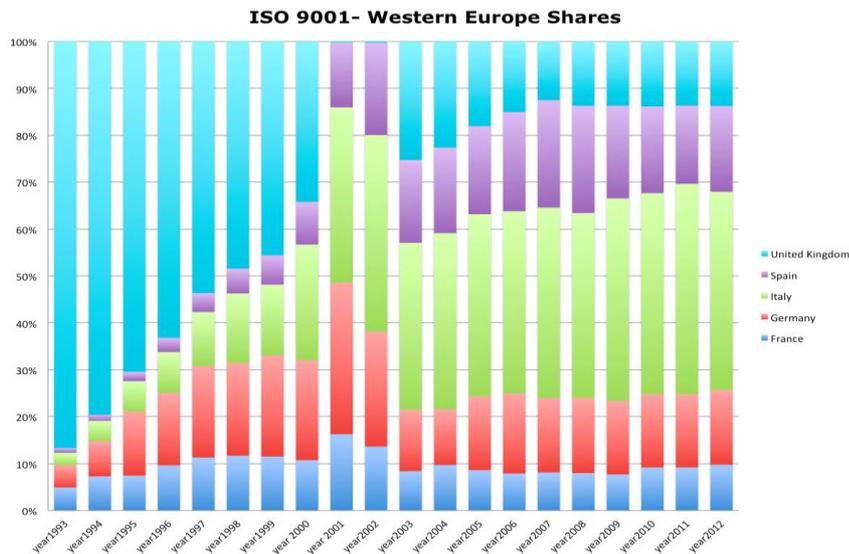


Figure 3.2.5

### 3.3 ISO9000 impact on organizational performance and drivers of adoption

With over a million of certification around the World ISO9000 is one of the most known management practices on Quality Management.

The standard for quality management is sponsored by ISO and others global actor as a management practice impacting positively on the organizations' quality system. However, given the fast adoption especially coming from developing and exporting countries, it seems that the practice impacts on the organizational performance is not on quality but on the legitimization that is possible to gain on global markets by subscribing to it.

In this sense, the organizational changes put in place to obtain the certifications would impact just on the formal structure of the

organization without having a practical impact in the actual operating structure. Such impact is related to the formal rationality showed by the majority of the organization, that want to adopt the management standard not for its potential benefits on quality but for its indirect benefits in terms of market legitimation.

By deep-diving the analysis on all the possible impacts the ISO 9000 standards could have on performance we can take as reference the framework developed by Boiral O. in its *ISO 9000 Systematic Review* (Figure 3.3.1)

	Internal Aspects	External Aspects
Operational Benefits	<p><b>Operations Management:</b> Productivity; Operational Efficiency; Cost Reduction; Waste Reduction; Documentation Management; Innovation and Product Design; Inventory Management</p> <p><b>Quality Management:</b> Product Quality; non-conformities; planning; rework rates</p>	<p><b>Customer:</b> Customer Satisfaction; Customer Service; Complaints Reduction; Delivery; Trust; Loyalty</p> <p><b>Suppliers:</b> Supplier Relations; Quality of Inputs; Inspection Reduction; Purchasing Cost Reduction</p>
Tactical/Strategic Benefits	<p><b>Organizational Effectiveness:</b> Financial Impact; Internal Efficiency; Internal Control</p> <p><b>Human Resource Management:</b> Organization of Work; Motivation; Work Climate Improvements; Communication; Work Satisfaction</p>	<p><b>Marketing:</b> Sales; Image; Export</p> <p><b>Market Competitiveness:</b> Market Share; Competitive Advantage</p>
Difficulties and Pervasive effects	Bureaucracy; Lack of Mobilization; Superficial Integration of the Standard	Lack of Confidence

**Figure 3.3.1** Source: Boiral O., *ISO 9000 and Organizational Effectiveness: A Systematic Review* (2012)

Taking a look at Figure 3.3.1 the ISO 9000 may lead to *Internal Operational Benefits*, that in turn can be related to *Operations Management Benefits* (measurable through operational efficiency, cost reduction, waste reduction, the inventory level) and *Quality*

*Management Benefits* (measurable through: product quality; re-works rate; non-conformities). Operational Benefits can be also related to external aspects, especially with Customer (Customer Satisfaction; Customer Service; Complaints Reduction) and with Suppliers (Quality of Input; Supply Cost Reduction). These Internal and External Operational Benefits are strongly sponsored by ISO and others standards supporters. In this sense, ISO would be a management practice applied by organizations according to a material rationality with the aim of changing the actual structure of the organization for having operational benefits.

The adoption of ISO9000 standards may have also *Tactical/Strategic Benefits* that have internal and external aspects. With regard to the internal aspect ISO9000 adoption may lead to *Organizational Effectiveness* (measured through: Financial ratios such as ROA, ROE or ROI) and to benefits on the HR Management (facilitating communication across the organization; improving the working climate; improving the job satisfaction and employees motivation). With regard to external aspects the benefits can be related to Marketing Benefits (sales increase; image improvements and export increase) and Market Competitiveness (measured through: market share)

Regarding this second group of benefits, on the one hand those related to internal aspects (Organizational Effectiveness and HR Management) are explicitly sponsored by ISO supporters with a logic of practice adoption based on material rationality. On the other hand, those benefits regarding external aspects (Marketing and Market Competitiveness) can be related to the benefits that most of the adopting organizations are having by applying the management standard according to a formal rationality.

Last but not least, with regard to the ISO 9000 impact on organizational performance have to be taken into consideration the

negative effects the certification might have on the organization. Within the most important outlined by Boiral O. there are: lack of mobilization; increase of bureaucratization and superficial integration of the standard. In fact, small sized organizations or highly flexible and innovative firms can undermine their flexibility by adopting ISO 9000 standard due to the fact of the high level of bureaucratization imposed to be certified.

Yet, even if the "superficial certification" is often performed with a formal approach by organizations to obtain a higher legitimization by global markets, the superficial adoption of the standard if not controlled may lead to confusion in the organization ultimately impacting negatively on the organizational performance.

Despite the several types of impacts the ISO 9000 might have on the organizational performance, for an accurate analysis the contingency/contextual factors have to be taken into consideration since strongly influence the ISO 9000 impact on the organization.

Such part of the analysis increases its importance since most of Literature considering empirical case studies have found different outcomes with regard to the ISO 9000 on the organizational performance according the different contextual factors of application.

The most important contextual factors influencing the ISO type of impact on performance is the organization reason of adoption<sup>57</sup>. The adopting behavior may be driven by Formal Rationality, that means that the organization wants to obtain the certification for being more legitimized in the global society with a related benefit in the firm's image. In this case the driver of adoption is not the organization self interest to improve its performance by using a management practice that would lead mostly to operational benefits, whereas the driver of adoption is the organization need to be

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<sup>57</sup> Boiral, O. (2012)

compliant on a standard that allows to be more legitimized in the market. The difference on the driver of adoption is a contingency factor that impact on the type of organizational change occurred and the ISO 9000 type of impact on the organizational performance.

In fact, if an organization adopts ISO with the main purpose to be certified for increasing its image and increasing its business opportunities with relevant partners, the organizational change that the standard application will determine will be just superficial on the formal structure of the organization (e.g the documentation will be prepared for the audit to be certified without having a practical and sustainable utility for the future) without effective changes on the organizational culture, organizational processes and organizational structure.

On the other hand if a company adopts the standard with the main purpose of improving its quality management system, the firm will adopt the practices in a deeper way by changing the organization not just on the surface but also adapting its organizational culture, its organizational structure and improving its organizational processes. This in turn will influence the type of impact that the standard will have, that is expected to be more on the operational side involving improvements in the Quality Management System (both internally and externally towards customer and suppliers) and benefits in the Operation Management (both internally and externally).

These two motives of adoption, on the one hand the need of compliance and on the other hand the willingness to improve the Quality Management System, can be related to the Institutional and Functional perspective<sup>58</sup> respectively. The difference between the two perspectives is based on the type of pressure leading organizations to the certification. On the one hand the Institutional Perspective states

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<sup>58</sup> Vilkas, M. and Vaitkevicius, S. (2013)

that the adopting behavior of organizations is guided by external pressures to the organization (ONG, Business Schools, Consulting Industry, States). On the other hand the Functional Perspective supports the adopting behavior of ISO9000 standards as guiding by internal pressure to the organizations<sup>59</sup>. These two perspectives have a tight analogy with the Formal and Material Rationality.

Moreover, by crossing this analysis with the diffusion analysis made in the previous chapter it is possible to assume that in the initial diffusion early adopter of ISO9000 seem to have applied the standard according to a functional perspective seeking those quality improvements sponsored by the practice. However, the dramatic increase of adoption in those exporting countries (e.g. China or Italy) seems to be guided by external pressures coming from the global markets that are getting higher and higher stringent on quality requirements for participating to bids or working with national institutions. To sum up, such difference in the reason of adoption strongly influence the effect the ISO900 quality standards have on organizational performance.

Other than the drivers of adoption other contextual factors may influence the ISO9000 impact on firm's performance.

According to Lo C. K. Y., Humphreys P., Yeung A. C. L. and Cheng T. C. E. (2013) the most relevant contextual factors in terms of impact on performance can be divided between: *Contextual Factors at the Firm Level* and *Contextual Factors at the Industry Level*.

With regards to those included in the first group, the most relevant seem to be:

- *Firm Technology intensity*. Since organizations with high level of technology usually rely more on exploratory innovation

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<sup>59</sup> Vilkas, M. and Vaitkevicius, S. (2013)

coming from R&D expenditure, whereas ISO 9000 is related to a more incremental innovation, it can be assumed that ISO 9000 adoption in organization with high technology intensity will have less positive impact on performance with respect to organizations with lower degrees of technology intensity.

- *Firm Labor Productivity.* Firms with lower level of labor productivity, by adopting the quality standard can have higher opportunities to be positively impacted by it.

- *Firm Labor Intensity.* In Organization that relay heavily on labor rather than technologies, the ISO 9000 is expected to be more effective in terms of impact on the organizational performance, since the quality management of firms with high labor intensity requires to be formalized

- *The cultural and professional background of top management and its involvement in the ISO9000 adoption* is a firm level factor that highly impact on the type of performance that ISO9000 has on the organization. Firstly because depending on the cognitive framework of the top managers the reason of adoption will change. Secondly the involvement of the organization top managers is a requirement for effectively sponsoring and implementing the management practice.

With regard to the Industry level factors the most relevant on determining the type of impact the ISO 9000 will have on the organization are:

- *Industry Efficiency Level.* In industries whose level of efficiency the impact of ISO 9000 on organizational performance it thought to be more positive.

- *Industry Competitiveness* increase the likelihood of adoption and it may be assumed that companies will take quality issues more seriously by using the standard as a means to deal with that issue

- *Industry ISO 9000 adoption level* is thought to influence the ISO impact on performance negatively, since there will be higher external pressures of adoption, overcoming internal pressure of quality improvements, by making the ISO 9000 adoption a “marketing badge” for not losing legitimacy on the market.

## **4. The Lean Philosophy as Organizational Change based on Material Rationality**

### **4.1 The Origin of the Lean Management System**

After having analyzed a management practice based on Formal Rationality, the focus of the analysis turns now on a management practice that despite similar, is applied with a different kind of rationality, the Material Rationality. Both of the management practices (ISO9000 and the Lean Model) have spread rapidly at the global level with the advent of Globalization and despite similar, such diffusion has been driven by different organizational incentives.

The Lean philosophy is an organizational approach that rethinks firms with a customer perspective and aiming at organizing organizational processes around the concept of value stream, eliminating those activities that are not value creating. In the third paragraph will be deep dived what is the Lean approach and around which practices is based.

Although the Lean philosophy is based on common sense principles such as the waste reduction, that were partly already applied by organizations operating with the production paradigm of the mass production such as Ford, Toyota Motor Company developed, at the beginning of the 20<sup>th</sup> century, an integrated Lean System throughout its organization with detailed techniques for deploying such approach.

The origin of the practice started off in the Toyota's textile plant Toyoda Spinning and Weaving when Sakichi Toyoda developed the first automated machines that stopped themselves automatically whenever it was spotted a production defect. In the same factory was working Taiichi Ohno who is now considered the manager that

fathered the Lean Philosophy. After the second World War with the Japanese Automotive Industry was suffering a competitive gap with its global competitors such as United States, the Japanese automotive internal market was characterized by a weak demand compared to the American one, moreover there was a huge gap also in terms of productivity of Japanese factories in comparison with American Factories, the ratio was 1:9(nine Japanese employees were needed for producing the same amount of output produced by a single American worker)<sup>60</sup>. The American Automotive Industry was dominated by the mass production paradigm, characterized by the production of huge lots of cars that were pushed in the market characterized by an increasing demand. In the same period the Japanese Automotive Industry started to be aware that its gap in terms of competitive advantage was leading to the death of the industry, so *“there was a strong willingness, starting from Kiichiro Toyoda (the future Toyota Motor Company President) to reach and then overtake the American Automotive industry in the next years”*<sup>61</sup>.

In the meantime, Taiichi Ohno was moved from the Toyoda textile factory to a Toyota Motor Company Plant. Ohno had a technical background built by working in the lower level of the organization, such background allowed him to better understand the organizational change that was needed and starting it from the bottom. Having a contact with the operating levels is essential for the Lean approach for not losing contact with the reality and getting insight on what could be improved. Moreover Ohno was strongly inspired by the operating logic of the American Supermarket that managed the replenishment in a way driven by the customer by lowering the level of stock. The production machines automation brought by the textile industry and the Just in Time approach

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<sup>60</sup> Ohno (1978)

<sup>61</sup> Ohno (1978)

developed taking as reference the American Supermarket Management Practices have been the two pillars around which the Toyota Motor has developed the Lean Production System for eliminating wastes, increasing its productivity to overtake its worldwide competitors.

The approach was put in place at the beginning of the 50's by Taiichi Ohno in the plant where he was working. The organizational change was performed in a piecemeal approach starting from a limited number of internal processes. However, the positive effects and a support from the top management allowed Ohno to test the new practice in other departments by spreading it throughout the plant at first, throughout the Toyota organization later on and finally to all the Toyota supply chain once the practice was consolidated internally.

According to Ohno in its book Toyota Production System (1987) it took roughly 20 year for its company to complete the organizational change and make the firm and its external business partners completely "lean".

Despite the headways reaped by the Japanese company, the majority of the MNE's operating in the global scenario kept managing their facilities with the mass production approach characterized by batch production that implies high level of stock of finished goods and raw materials. Such approach has been sustainable until the Oil Crisis Spread in 1973. In fact, after the 1973 crisis the global demand was weakened by lower rates of growth and the "push approach" was not anymore sustainable in most of the global markets. In 70's whereas the global economy was declining and most of the Firms were impacted by the crisis Toyota Motor Company was growing their

profit. In that moment the world started to consider the Lean approach as a way for deal with a new global framework<sup>62</sup>.

## **4.2 Lean Philosophy drivers of adoption and diffusion**

The Lean Management practice is currently one of the most common and used model around the world, firstly by manufacturing companies but also with a growing trend by the Service Industry (e.g. Hospitals; Consulting; Bank)

However, it took time for the practice to spread globally from the moment of its first implementation performed by Toyota in the 50's.

Whereas in the previous chapter was possible to perform a detailed analysis on the diffusion of the ISO 9000 quality standards because of the data availability, for the Lean Management practice won't be possible to perform the same level of analysis. This is basically due to the fact that, on the one hand the ISO9000 is a management practice that has been standardized and for which organization can be publicly certified, on the other hand the Lean model is a practice that has not been standardized and can be applied in a variety of way. Moreover, most of the adopting companies don't publish the model adoption. This point highlights once more the different rationality with which most of times the two management practices are adopted.

Despite the lack of diffusion data in this paragraph will be outlined the main factors (cultural and economic) determining the diffusion.

First of all, *economic factors* impact on such diffusion. As outlined in the previous paragraph by the beginning of the 70's, with

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<sup>62</sup> Ohno (1978)

the Oil Crisis, the global economy weakened its growth that has in turn impacted on the global demand. Such changes have imposed most manufacturing companies to rethink their management approach, since the “push control” characterized by the production of huge batch of finished products and delivering them downstream in the supply chain was not anymore feasible for dealing with a global demand lowered, more volatile and more vary given the diversification of the tastes. In this period in fact, the Lean philosophy started to become known by most of Western manufacturing firms that needed to rethink the management paradigm of their facilities that until that moment was based on the Fordist paradigm.

Other than economic factors, *cultural factors* have also impacted on the diffusion of this management practice. Within such category, plays an important role the cultural process started with the Globalization. In fact, as mentioned in the second chapter, the Globalization has brought a new global cultural field characterized with the rise of importance of new actors such as Transnational Organizations, Universities and Consulting Firms. It influenced the diffusion of the Lean management practice not in the first stage of its spread but most probably later on in the 90’s when the Globalization has most impacted on the new global culture.

The Globalization other than engendering these new relevant actors in the global scenario, has also affected the global demand making it more volatile and fragmenting the consumer tastes, given the wider availability of choice they have due to the fact of the new channels provided mostly by the internet.

Within the group of the cultural factors of Lean philosophy diffusion can be considered also two firms’ features strongly dependent on the cultural environment where they operate: *the*

*eagerness of employees and the level of discipline of the employees*<sup>63</sup>.

In fact, these two cultural traits differs, according to Yokozawa and Steenhuis (2012) across the world determining for every cultural context a different level of the management practice applicability.

For example, in countries such as China where people can be defined as “hungry” to learn new way of work and new management models for improving the organizational performance, this determine higher level of eagerness. On the other hand, in Western countries the level of eagerness of firms is way lower. This cultural feature is without any doubt also related to the country’s level of wealth in fact, in wealthy countries such as the Western ones employees have less incentives to change their way of work given the high level of wellbeing they already have. On the contrary, in developing countries the possibility to increase their income leads employees to be more “hungry” and having more incentives to change.

Also the level of employees discipline is a cultural feature that impacts on the diffusion of the management practice. In this sense collectivist societies such as the Japanese one are have shown higher level of discipline with respect to the individualist societies<sup>64</sup> influencing directly the possibility to introduce management practices leading to organizational change and their success in effectively changing the organization for increasing the company performance.

As already mentioned, the diffusion of this model has been based on the firms self interest to improve their organizational performances for dealing with the new global scenario. This ratio of adoption strongly differs from the rationality used most of times by firms when adopting ISO 9000 standard, that is based on the firms’ willingness to comply with a series of rules requested by the global

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<sup>63</sup> Yokozawa, K. and Steenhuis H.J. (2012)

<sup>64</sup> Hofstede, G. (2001)

society for reaping the benefits given by the legitimization. The difference on the type of rationality of adoption influences in the models diffusion and influence also (as it will be empirically analyzed in the last chapter) on the type of organizational change the firms usually undergo.

### **4.3 What is the Lean Management Practice?**

The Lean approach, as mentioned in the first paragraph, can be considered an organizational approach that rethinks firms with a customer perspective and aims at organizing organizational processes around the concept of value stream, eliminating those activities that are not value creating.

Before deep-diving the analysis on what tools and approaches characterize the Lean Management, it is useful talking about the Kaizen Philosophy (a Japanese word meaning "improvement"), an approach based on continuous improvement and the resolution of operating problems. Such philosophy is the back bone of the Lean Model and most of the actions and organizational tools characterizing the Lean practice.

The Kaizen has some particular traits such as:

- *Fact Finding*, meaning that for deeply understanding the way of improvements the Kaizen emphasizes quantitative analysis as a way to highlight problems and qualitative analysis for understanding the nature of the problems<sup>65</sup>

- *The importance of "how"* meaning that such philosophy focuses on "how" the problem has been solved and the organization improved, for giving the improvements some continuity

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<sup>65</sup> Angeli, F. (1998)

- *Ideation of ideas for improvements*, meaning that the Kaizen focuses on the effort coming from all the levels of the organization for elaborating ideas on how to improve the current situation.

- *Plan, Do, Check, Act*. Such approach using the Deming Cycle as one of its pillars, aims at making the continuous improvements an organizational routine.

- 5 "S". Separation (*Seiri*) the important from the unimportant; to keep in order what is really needed (*Seiso*); to clean up what is not needed (*Seiketsu*); discipline (*Shitsuke*) being able to make routine the previous steps<sup>66</sup>.

The Lean Model integrates such approach based on continuous improvement with Kaikaku (breakthrough), meaning the approach of dramatic change for breaking the relations with the status quo, the current organizational posture that generate *muda* (waste).

The latter approach is emphasized especially at the beginning of the Lean practice adoption, due to the fact that it generates quick positive benefits in terms of performance improvements that incentive employees and managers to keep going with the adoption process that later on will be based mostly on small continuous improvement steps<sup>67</sup>.

The Lean approach is characterized on three main aspects that are:

- A strong focus on waste elimination
- A strong focus on employees involvement
- A strong Focus on the continuous improvement

These three main points are the three pillars of the Lean Management and can be put in practice by using a series of "lean" tools. The first point (waste elimination) is the most operating one

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<sup>66</sup> Angeli, F. (1998)

<sup>67</sup> Womack, J. P. and Jones D. T. (1996)

and has the richest set of tools. Such techniques are mostly applied to manufacturing departments but can be applied also to other functions such as Product Development, Finance, Selling and Purchasing departments etc.

The other two points are strongly related to the Kaizen approach. Moreover they are even more versatile to be applied throughout the organization and in every type of industry, given their less operating traits with respect to the first point.

### **4.3.1 Waste elimination**

One of the main Lean Management aspects is the elimination of the waste, called *muda* in Japan, starting off with the most operating functions and then applying the same philosophy on the other departments.

The Lean model aims at eliminating waste through three main approaches that are:

- The rationalization of the value chain
- Diminishing the variability of processes
- Aligning the production to the market demand

Such approaches in turn use techniques that impose change on the organizational culture and processes and structure, but first of all has to be used once the culture from the top management has changed and their cognitive frameworks become based on the Kaizen philosophy so that they can sponsor the change throughout the organization and influencing a cultural shift also in the lower levels of the organization. This implies that the organizational change by adopting the Lean Management practice, especially for those firms that previously are managed differently, has to start from the top and has to be spread down to the organization. Once the organizational

change has started and the cultural shift is completed for the all organization, the continuous improvements have to be based on bottom up fashion.

The most important techniques that the Lean Management put in place for the waste elimination are:

- *Layout Modification* is a good starting point for activating and revitalizing the production flux. Most of the Layouts in manufacturing departments are set in a way that automatically creates waste of time or materials. By just changing the layout of the machineries in a factory for let the production follow a linear flux the organization can reap huge and immediate benefits that are determined by break with the past (Kaikaku)<sup>68</sup>.

- *Just in Time*. This operating technique is based on two tools: *The Pull Control* that aims at setting the production starting from the customer inputs. That means that the initial stages of the production process receive inputs from the final stages and produce the materials accordingly. *The Kanban* is the operating method allowing the Pull Control, by using a piece of paper or a specific material container (the focus on the visual approach is strongly highlighted in the Lean Model) that is utilized in the production station where the related material is employed, and is sent upstream by the operator whenever it is empty. By Receiving the visual signal (the empty container of the piece of paper with the indicated quantity needed) the stages upstream in the value chain know that they have to produce a specific quantity of material and sending it back downstream to the operators<sup>69</sup>. With this method stock levels are reduced since what is requested and delivered is used in the production process. This method liberates a huge amount of financial resources due to the lower level of stock.

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<sup>68</sup> Womack, J. P. and Jones D. T. (1996)

<sup>69</sup> Ohno (1978)

- *Production and Deliveries Leveling.* For fine-tuning the production with the market demand the Lean Model focuses on reducing the production batches, causing *muda*, and maximizing the mix of products that better reflect how final customers buy the products. Such approach is also used for deliveries to retailers, avoiding overproduction and keeping the level of stock low for all the players in the value chain. This method can be applied by first estimating the *Tact Time* (time needed to produce a finished product) and planning the production accordingly.

- *Set-up timing reduction.* Producing small batches and a wider mix of different products require frequent set-ups of machineries that are time consuming activities not producing value. In this sense the Lean Management System focuses on the set-up timing reduction.

- *Automation and Poke Yoke.* The change the Lean Model imposed is also on the firm's asset in particular on machinery and the rethinking of the relationship operator-machinery. On the one hand for facilitating the flux and rationalize the firm has to set machineries that can stop themselves whenever they spot a defect in the production process, on the other hand the operator has to manage several machineries in the process<sup>70</sup>. *The Poka-Yoke* (avoiding mistakes) method is a typical lean manufacturing techniques that fixes the standard around which the operating work has to be performed so that the variability of results is lower, the process is better controlled and the mistakes made by the operators are reduced.

- *Visual Approach* in Lean Management is a method for driving awareness of the status quo and consequently improvements in the organization. It is really common the use of boards indicating

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<sup>70</sup> Ohno (1978)

the daily production performance or the performance of other departments such as the product development.

- *Focus on product development through cross functional teams.* The Lean Management System focuses on the final customer, the product development becomes a central activity managed through cross functional teams composed by members from Engineering, Marketing, Manufacturing, Sales, Purchasing and R&D that follow the entire process from its development, production to its sale allowing the value stream to be linear without interruptions or delayed usually caused by purely functional structures<sup>71</sup>.

- *Lean Supply.* For fully reaping the benefits of this management practice the Lean approach has to be developed to all the value chain, that most of times include more than one organizations. The Lean System focuses especially on the Supply Management in terms of rationalization of the supply base for keeping and deep-diving the relationships with those suppliers considered strategic. Moreover, the Lean Supply has to be based on a transparent relationships and a continuous exchange of information for improve continuously the status quo. Interchange Data System and Strategic Workshops are useful for purpose. The transparency has to be kept also on suppliers costs that can be reduced with the Lean model adoption and can be used as a lever for the prices negotiation<sup>72</sup>.

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<sup>71</sup> Womack and Jones (1996)

<sup>72</sup> Lamming (1993)

### **4.3.2 Employees involvement and continuous improvement**

The other two main aspects on which the management practice focuses on are employees involvement and continuous improvements, that are two points strongly related to the Kaizen philosophy on which the Lean Management is based.

In fact both of them are put in practice by adopting firms, through Kaizen workshops or “Kaizen days” where all the organization and sometimes also external business partners discuss about the changes in the current system that can be put in practice for improve the current situation. In this way all the levels of the organization are involved in a bottom-up fashion, where employees operating at the lower level of the organization to provide their suggestions on what can be improved. Another trait of employees involvement is that operating levels define the operating standard on which their work has to be based. In this sense the management has a role of standard maintenance.

The bottom-up approach in originating organizational change, is a typical trait of the Lean philosophy. However, shifting to the Lean Approach, by changing the way of managing requires a cultural shift that has to be undergone firstly by the Top Management and then sponsored throughout the organization, especially in the first period of adoption. Once the cultural shift is undergone by all the organization, the more operating levels of the organizations can start implementing small changes in the organization in a bottom-up fashion.

## **4.4 Implementing the Lean Model**

Implementing a management practice in an existing organization with its own culture, structure and consolidated routines it is not an easy task. Moreover if the model is put in practice for the organization self interest to improve its performance it becomes even more complicated than practices implemented just for compliance to “societal norms”. This is due to the fact that most of the practices implemented for improving the organizational performance for working have to be assimilated by the organization in a deeper way, by changing all the three parts of the organization: its culture, its processes and its structure.

Taking the Lean approach as example of Management model based on material rationality, this paragraph will deep-dive the implementation process that is considered to be an important part of organizational change practice based on the organization self interest.

It is important to highlight that the implementation of the Lean model it has not to be an end but it has to be considered a means for achieving a broader organizational goals (such as quality excellence in the firm’s products). Developing the approach without a supporting goals does not allow the organization to fully reap the benefits of the model.

For changing the organizational status quo and implement the Lean model it is necessary to identify a person in the organization that will be the sponsor of the shift to the Lean approach. Whereas the higher is this person in the organizational structure the more effective will be the sponsoring throughout the organization, it is not necessary that the sponsor has the knowledge on Lean philosophy

and its related organizational tools<sup>73</sup>. In fact, most of the firms that want to embrace Lean don't have always a person with the proper knowledge and really often the organizational change is supported by external consultants. In any case the Lean sponsoring person plays an important role in raising awareness in all the organizational levels. The exploitation of a crisis oftentimes is the trigger that generates the need of change (e.g. the lack of Toyota competitiveness versus its Western competitors). The person sponsoring the change has to be ready to exploit this situation of crisis for increasing the organizational willingness to change.

The Lean Management practice strongly emphasizes the concepts of value from the customer perspective and the importance of the stream of activities to generate such value. According to the approach it is necessary that the flux value generating activities is linear without interruption and avoiding activities that are not value generating. In this sense, the first step for determining what needs to be improved and what eliminated is to map the value chain flux including just those activities thought as value creating for the final customer. Once mapped the value chain of the product, it has to be compared with the actual stream of activities that the organization performs for producing and delivering the final product to its customers. According to Womack and Jones, this exercise of comparison normally highlights three types of activities:

- Value generating activities
- Activities that don't generate values but are necessary in supporting the value generating activities
- Activities that don't generate value and are not even necessary

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<sup>73</sup> Womack and Jones (1996)

The main goal of the Lean model is to eliminate the waste (*muda*), that means implementing changes for eliminating the third type of activities and by reducing as much as possible the second type. The organization has to be focused just in those activities that generate value for the final customer.

Such focus generates changes on the organizational processes, in the first period especially those operating ones that can lead to quick improvements serving as an incentive and activating a virtuous cycle at all the organizational levels. Methods outlined in the previous paragraph such as rethinking the layout of the processes for allowing the production flux to be more linear and efficient or analyzing the operator activities for rationalize it and fixing a standard on the activities performance, are example of typical changes implemented with a Lean approach in the first stages of the practice adoption.

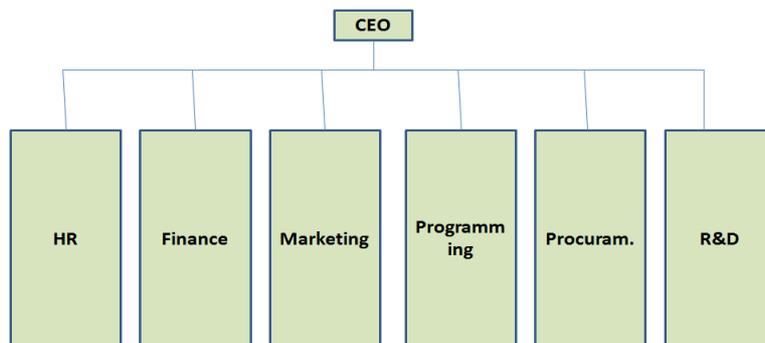
The focus on the final customer of the Lean Management System is reflected also in the change of the organizational structure. Most of firms are organized in departments/functions (Production, Programming, Product Development, Marketing and Sales, Procurement). This kind of structure however stifle the fluency of organizational processes that most of times are cross functional, and creates *muda* throughout the organization. Such waste impacts on delays in deliveries, product development, longer LT, lower quality of products.

The Lean model aims at changing the traditional functional organizational structure into an organization where the focus is on the products the organization sells to customers. Such focus is performed by implementing cross-functional team including employees coming from different functions that can work together

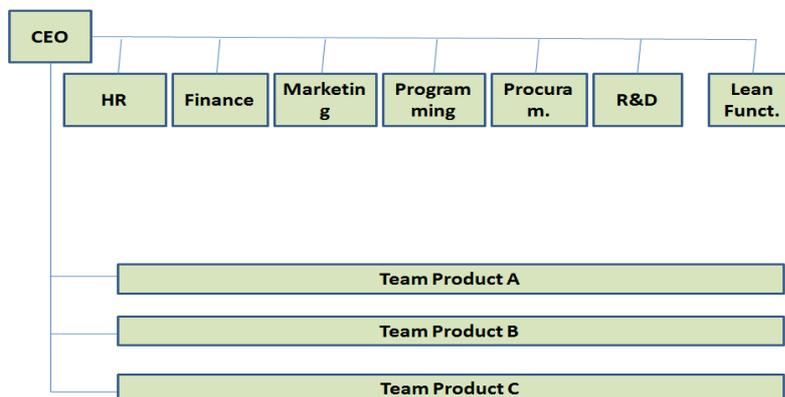
allowing a more fluent and faster process of product development, product production and delivery to the customers<sup>74</sup>.

According to Womack and Jones (2006) the structure has also to include a function promoting and spreading the Lean philosophy at all levels of the organization and finding continuously new way of improvement.

The following figures highlight the difference between a traditional structure and an organizational structure reshaped according the Lean Management approach. In the figure 4.4.2 the structure is a matrix with the focus on cross functional teams responsible for the whole process of the product, the traditional functions are in this structure downsized with respect to the traditional structure (figure 4.4.1)



**Figure 4.4.1 Traditional Functional Structure** Source: Womack and Jones (2006)



**Figure 4.4.2 Matrix Based Structure with Lean Management** Source: Womack and Jones (2006)

<sup>74</sup> Womack and Jones (1996)

Shifting the organization to the Lean approach requires also the change of the management system especially in terms of Human Resource Management and Accounting Management.

With regard to the first aspect the Lean model, by being based on employees involvement, changes the incentive system and the accountability system. For example, this kind of practice fosters a salary system based on firms performance for all the organizational levels.

Another typical trait of the HR Management in firms adopting the Lean approach is the "Kaizen days" or "Kaizen Weeks", events including all the levels of the organization for discussing on potential new improvements.

With regard to the Accounting Management the Lean model requires a shift from the traditional methods of measuring performance to *"a system that better captured the value stream of activities performed, highlighting the performance of every team and function"*<sup>75</sup>.

Other than change the organizational processes and organizational structure, the implementation of Lean techniques positively influence the performance that in turn leads to a cultural shift.

Changing the organizational culture is a long-term process that Lean philosophy aims to do by starting from a cultural change from the top of the organization that with its leadership have to promote such shift down to the organization. Once the Lean approach is assimilated by the all levels of the organization the culture based on this management practice assumes more a bottom-up fashion where

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<sup>75</sup> Womack and Jones (1996)

operating employees suggest and lead small organizational change to continuously improve the firm performance.

The consolidation of the cultural change occurs with the benefits the organization perceives from changes encourage the employees to change their cognitive framework. On the other hand initiatives promoting continuous improvement and Kaizen philosophy also foster a cultural shift that in turn positively impacts on the employees willingness to think of and implement changes to improve the organizational performance. In this sense a virtuous cycle between organizational improvement and cultural change is activated.

The implementation of this management practice is a long term process impacting on the organization in terms of culture, processes and structure. Moreover as outlined at the beginning of this paragraph the material rationality at the base of the practice adoption implies that the model has to be fully embraced by the organization, for aiming at its main purpose that is the performance improvement.

Womack and Jones in their book "*Lean Thinking*" (2006) estimated that the average timing for fully implement the Lean approach in organization is five years, dividing the timing of each step presented as follows in the below figure.

<i>Stage</i>	<i>Specific changes</i>	<i>Timing</i>
Beginning	<ul style="list-style-type: none"> <li>• Identify a Change Agent</li> <li>• Acquire the Lean Knowledge</li> <li>• Mapping the Value Stream</li> <li>• Breaking with the past (<i>Kaikaku</i>)</li> <li>• Widen the action</li> </ul>	First 6 months
Creation of a new Lean Organization	<ul style="list-style-type: none"> <li>• Reorganize the Structure around the different products</li> <li>• Establish a function dedicated on Lean Philosophy <ul style="list-style-type: none"> <li>• Set a new HR policy</li> </ul> </li> <li>• Set the Strategy around growth</li> <li>• Remove opponents to change</li> <li>• Change the culture around the continuous improvement</li> </ul>	Year 2
Introduction New Management Systems	<ul style="list-style-type: none"> <li>• Introduction an Accounting Management System supporting the new Organization</li> <li>• Introduction of Lean Training</li> <li>• Tight the salary to performances</li> </ul>	Year 3 and 4
Completing the Conversion	<ul style="list-style-type: none"> <li>• Lean Supply</li> <li>• Lean downstream to the Value Chain</li> <li>• From top-down improvements to bottom-up improvements</li> </ul>	Year 5

**Figure 4.4.3 Timing for Lean Management Transformation** Source: Womack and Jones (2006)

The extended period of implementation characterized by small improvement steps requires certainly more effort than other organizational change practices that are based on a revolutionary approach. These features make the Lean more difficult to apply especially in Western countries oriented by a short-term perspective rather than long term growth. However, if correctly implemented, this type of management practice allows organizations to liberate a huge amount of resources and thrive in a global framework characterized by low growth rates and declining demand for most of the industries

## **4.5 A case study of Lean adoption: Pietro Fiorentini S.p.A**

For showing practically the benefits of adopting the Lean Management System according to a Material Rationality approach, this paragraph focuses on a practical example of Lean Management adoption.

The case that is going to be analyzed is one of the most successful cases of the model adoption in Italy, highlighting how the organizational change imposed by the Lean philosophy can impact on the firm's performance.

Pietro Fiorentini S.p.A is a company leader in the international markets of components systems and services for the treatment, regulation and metering of natural gas. It currently has eleven plants dedicated to the production of these components. Other than manufacturing activities, Pietro Fiorentini S.p.A is integrated involving the activities of designing and selling its products. The company core business are the pressure regulators.

The firm was founded in 1940 in Bologna by Pietro Fiorentini. Its Headquarter is now located in Arcugnano (Vicenza, Italy). Due to the fact that the gas natural market and its related value chain was highly regulated, the company thrived until the end of the 90's. In 1994 it was opened a plant in Shanghai for penetrate the Chinese market, that was rapidly growing. In 1998 started a declining phase for the company whose impact was reflected in the organizational performance through a reduced turnover growth, reduced margins, drop in the company's free cash flow, increasing claims from customers. In the same period a deregulation in the industry further complicated the situation for Pietro Fiorentini S.p.A. In 2000 after two years of declining performances, a new CEO, Pietro Mario Nardi was introduced for leading the company out of the crisis. In the same year P.M. Nardi, with the believe that the main driver of that decline was the organization itself, decided to start a *Lean journey* for its company. In this sense the most relevant person in the organization, the CEO, has been the change agent for implementing a the Lean model in Pietro Fiorentini S.p.A.

Always in 2000, the company took a bold step opening its first facility in North America for seizing opportunity in the American market.

For facilitating the organizational shift Mr. Nardi got the consultancy of John Black, a lean sensei at the head of John Black and Associates LLC an American consulting company on Lean Management System. With P.M Nardi as promoters of the new practice and J. Black sensei retaining the knowledge on Lean organizational methods the firm's conversion started in 2000.

With this regard the organizational change was firstly implemented in the manufacturing department. The starting point was identify in the moment the wall separating the testing and assembly areas was broken down. This moment was significant both in a symbolic way and in a practical way. In fact, the event communicated to the entire organization a willingness to change and at the same time the change in the facility layout allowed the company to better exploit the production value stream, that was identified in a customer perspective and implemented by keeping the value creating activities and eliminating those that were not occurring in the value creation. The introduction of *Kanban* and a Pull Control of the value chain allowed the company to eliminate the central warehouse, impacting of the generation of financial resources (increase of the Free Cash Flow).

The implementation of the Lean practices was consequently applied in the offices, with a particular focus on the Product Development, Production and Selling Planning and Procurement. After having consolidated the new management system internally, the company decided to export its model to its supply base and downstream to the supply chain, generating an integrated Lean Management System for the entire value chain. The CEO P.M Nardi explains that by introducing changes at the operating levels and

improving the performance was a means for turning upside-down the employees cognitive framework and creating a fertile field for a cultural shift. Moreover, the Top Management decided to set a periodically days dedicated to the continuous improvement and the involvement of employees to come up with new ideas for continuously improving the status quo (Kaizen days). This organizational tool has also foster a cultural change in the organization. A contribution to sustain the new Lean Culture has come also from the institution of the Pietro Fiorentini Academy an internal organization for fostering the Lean Thinking.

In terms of structure Pietro Fiorentini S.p.A has moved from a functional structure to a matrix based structure characterized by cross functional teams following the entire flux of a specific product. Moreover, has been instituted a Technical Office for each production line following the production flux.

The impact of the company transformation on the organizational performance was not visible from the beginning of the change. In fact, it took two years from the Lean System implementation (2000) to see the impact on results. From 2002-2006, the positive effects of the organizational conversion started to become visible in terms of increased productivity (+43%), increased stock turnover (from an average of 4 times a year to a maximum of 8,9 times a year), increased turnover (+60%) partly due to the increased quality of products. In 2010 the financial crisis hit also Pietro Fiorentini S.p.A however, the new management model allowed the company to control the crisis negative impacts on the firm's performance, maintaining a growing trend from that started in 2002. In 2013 two new facilities in China and Hungary has been opened, supporting the growing trend of the company.

Summing up the main benefits the company got from the conversion to the Lean Management Practice are:

- Assembly Lead Time reduced from 6,75 days to 1 day
- WIP reduced from 76 pieces to 21 pieces with a maximum of 2 pieces in waiting status
- Overall LT reduction from 4 weeks to 5 days
- Stock Level reduced with the elimination of the central warehouse, that in turn impacted on the increase of the company Free Cash Flow

These operating improvements that are typical of the Lean Model have in turn impacted on the organizational performance from 2002 as previously outlined.

In Pietro Fiorentini S.p.A the Lean transformation is an ongoing process that continuously leads changes and improvements in the organization and in turn impacts in the company performance.

The adoption of such practice is a typical case of management model according to material rationality characterized by the company self interest to deeply change for improving its performance.

## **5. Empirical analysis of ISO9000 and Lean Management System adoption in the Plastics and Chemical Industries.**

### **5.1 Introduction to the case study**

After having analyzed two different practices of management, that impact on organizational change and are mostly applied with different rationalities, this chapter will focus on an empirical analysis aiming at verifying if these two management models are effectively applied for the majority of the cases with different ratios and if such difference impacts on the type of change and in turn on the organizational performance.

Moreover, the case takes as reference two specific and tightly related industries, the Plastic Industry and the Chemical Industry. On the one hand, the Plastic Industry intended as plastic components moulding is a fragmented sector, mostly characterized by companies of small and medium size. These firms have as their primary customers the Automotive and Domestic Appliances industries, mainly characterized by big corporations. Moulders operate locally, close to their customers plants, for guaranteeing a more consistent service and faster deliveries. On the other hand, in the Chemical Industry there are few and big players operating globally, making the sector more concentrated. Firms operating in this industry serve principally the Automotives Producers, Construction Industry, Consumer Goods Industry (for Packaging), Domestic Appliances Producers and firms operating in the Plastic Sector.

The difference of structure and players in these two industries has been positively considered for analyzing several type of firms,

from the smallest family business operating locally to the multinational company operating globally.

Although the result of the analysis cannot be extended to every kind of business, it is believed that it can provide useful insights on the different logic of adoption of the two practices that in turn impact on the changes undergone by the organizations and the impact on operating and financial performance.

## **5.2 Method of Analysis**

For deep-diving the drivers of adoption both for ISO9000 and Lean System and the impact of such practices on the organizational performance, has been formulated a questionnaire divided into five main modules: *The Type of Company; Previous Firm's Status in terms of Quality Management, Continuous Improvement, Process Management; Practice Adoption Process and Motives of Adoption; What Has Changed in the Organization; Follow up in terms of Performance Impact*. These modules deploy in a series of questions whose answer has to be given through a scale from 1 to 5, and questions whose answers are open, leaving the respondent the choice to answer however he wants. Such structure has been considered the best one for integrating information that could be standardized and information that are purely qualitative and descriptive (e.g. the description of how the operating impact has been spotted).

Type of Company	Type of practice Company Size (n.employees) Markets of reference Locations of Operations Organization's Core Business	Lean		ISO9000		
		<50	>50<100	>100<500	>500	
		Italy	Europe		Global	
		Italy	Europe		Global	
Previous focus on quality management in the customer perspective, process management and culture of continuous improvement	Practices for measuring Defect Rate	1	2	3	4	5
	Practices for Measuring Customer satisfaction and customer needs	1	2	3	4	5
	Operating Work set with standard timing of adoption	1	2	3	4	5
Motives and process of adoption	(form the moment of adoption till its consolidation in the organization)	3 months	6 mont	3 years	5 years	20 years
	Department Involved (operations/offices)					
	Top management involvement	1	2	3	4	5
	Specic role sponsoring the program					
	Underlying strategy for adoption					
	Tactical goal for adoption					
	Communication to the outside	1	2	3	4	5
What has been changed	Media of communication					
	has the Company's vision changed?	1	2	3	4	5
	Has the org. structure changed In what terms	1	2	3	4	5
	Have the organizational processes changed? In what terms? Which ones?	1	2	3	4	5
follow up	Impact on operating performance	1	2	3	4	5
	Description of impact					
	Impact on financial performance	1	2	3	4	5
	Description of Financial Impact					
	Is the practice kept active currently	1	2	3	4	5

Legend:	
1	Unexsistant
2	Poor
3	Sufficient
4	Strong
5	Outstanding

**Figure 5.2.1 Questionnaire of analysis**

The above form has been sent by e-mail to the commercial reference of forty companies, playing a Senior Manager, Director or Owner role of the organizations interviewed, according to the size of the company. After having forwarded the questionnaire the reference was contacted by phone for explaining the purpose of the questionnaire and the way it should be filled out. 25 companies out of 40 firms replied to the e-mail sending back the form filled out, 3 companies provided the form uncompleted and 12 companies did not accept to fill out the form. Moreover, since 8 of these 25 firms adopted both ISO9000 and Lean Management System, it was asked to them to fill one questionnaire for each practice. This basically for

leaving these organizations to highlight separately the impact of both models.

For reasons of privacy, the name of the 25 analyzed companies won't be revealed. However, for the analysis purpose such information has been considered not influencing the results.

### **5.3 Results and conclusions**

As outlined in paragraph 5.1 the main purpose of the empirical analysis is to find a relationship between logic of adoption of a management practice and the impact that such ratio has on organizational change (in terms of what has been changed) and operating and financial performance.

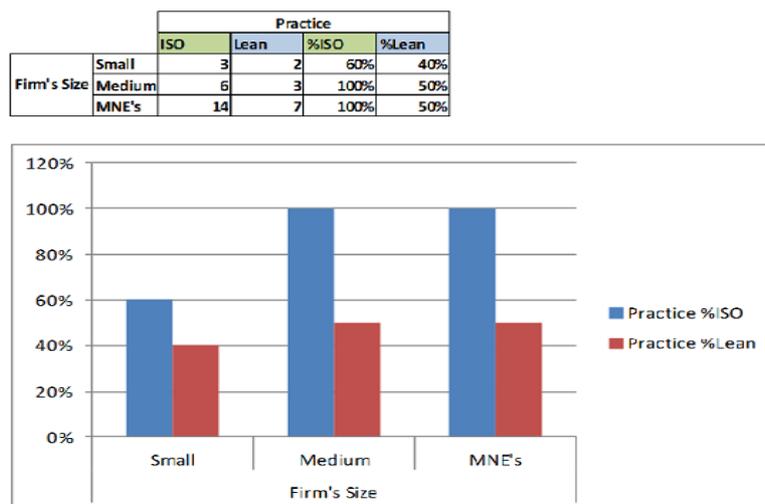
By gathering the data and qualitative information coming from the questionnaire filled out by the 25 companies, it has been possible to divide the firms according their size and their reach of operations and markets of reference by identifying four types of players:

- *Two small firms operating locally*, organizations with a number of employees ranging from <50<100, whose operations are located in Italy and their market of reference is the Italian one.
- *Three small firms operating at the European level*, organizations with a number of employees ranging from <50<100, whose operations are located within the Italian territory, but they have customers in Europe
- *Six medium firm operating at the Global level*, organizations with a number of employees ranging from >100<500, whose operations spread throughout Europe and their customers come from all over the world

- *Fourteen big Firms or MNE's operating at the Global level,* organizations with a number of employees higher than 500, whose operations and customer base is at the global level.

The size and the reach of these organizations are dependent on the sector/core business they are involved in. The medium companies and MNE's analyzed belong to the Chemical Industry, whereas the small ones belong to the Plastic Industry, confirming the two different structures of these two sectors outlined in the first paragraph.

Moreover, by taking into consideration the size of the organizations it has been highlighted that such factor impact on the level of adoption of the ISO9000 and Lean Management models. As highlighted in figure 5.3.1 medium and big firms examined in the empirical case have a higher percentage of adoption of both management practices.

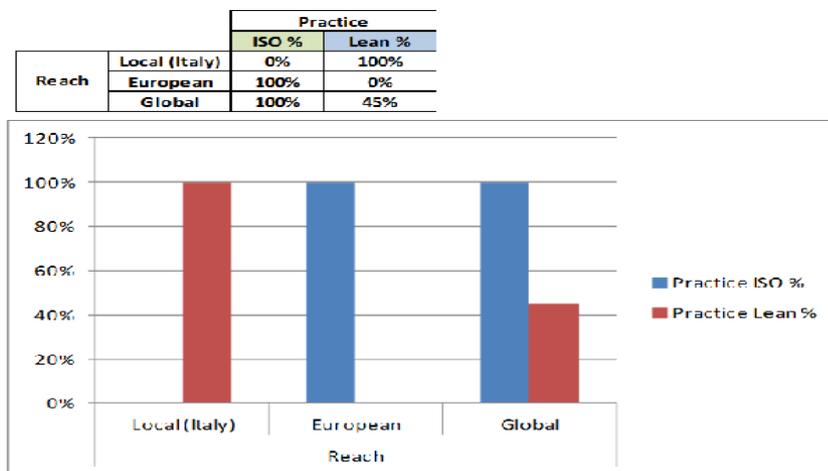


**Figure 5.3.1 Relationship between size and level of adoption**

Other than the size, another factor that seems to increase the likelihood of adoption is the reach, however not for both the management practices.

On the one hand for ISO9000 a broader reach increases the percentage of adoption, highlighting that companies operating at the European level and at the Global level might have higher external

pressures to adopt the standard for being compliant to the society request, on the other hand for the adoption of Lean philosophy a broader reach does not seem to increase the likelihood of adoption. In fact, in the latter case the adoption would be supported by the organization internal need to improve its performance, that it is not always directly related to a broader reach in terms of operations or customer base.



**Figure 5.3.2 Relationship between reach and level of adoption**

The data related to the type of company seem to influence the level of adoption of ISO9000 and Lean, however for understanding the ratio behind the adoption and the related impact on the structure and on the firm’s performance it is necessary to go further in the analysis.

Taking a look at the results of third module of the questionnaire “*Motives and Process of Adoption*”, is relevant for understanding the difference of management model application in terms of underlying rationality.

If it is take into consideration the timing of the process (intended to be the time needed from the implementation of the

practice until its consolidation in the organization), whereas the two practices are two models changing the organization in a piecemeal fashion (implying a long period of adoption), there is a huge difference in the questionnaire outcome between ISO9000 and Lean.

n. of Firms	3 months	6 months	3 years	5 years	20 years	
ISO9000	4	17	2	0	0	23
Lean	0	0	1	9	1	11

%	3 months	6 months	3 years	5 years	20 years
ISO9000	17%	74%	9%	0%	0%
Lean	0%	0%	9%	82%	9%

**Figure 5.3.3 Timing of Adoption**

As it can be noticed in figure 5.3.3. for the 91% of the companies adopting ISO9000, the adoption took from three to six months. On the other hand, for the 91% of the companies adopting Lean the timing of adoption of the model took from five to twenty years. The difference may be due to the fact that the purpose to adopt ISO9000 is not the same for adopting Lean. In fact, on the one hand the adoption of Lean Management seems to be driven by the need to improve performance, purpose that takes time to be verified. On the other hand, whereas the ISO9000 has the same approach of changing the organization, the timing needed seems to be far shorter and coincide with the minimum timing of adoption companies are recommended to apply the practice for obtaining the certification.

The only two exceptions to this finding are two firms (a small firm operating at the European Level and a medium firm operating at the global level), whose timing of ISO9000 adoption took three years. Such difference as it will be highlighted later on impacts differently on their organizations with respect to the other examined cases of ISO9000 adoption.

Still analyzing the information related to the process of adoption of the two practices, it has been highlighted a difference of the role sponsoring the practice.

	Top Management/Owner	Quality Dept. or Compliance Office
ISO9000	17%	83%
Lean	100%	0%

**Figure 5.3.4 Role in the organization sponsoring the practice**

Figure 5.3.4 highlights that ISO9000 is sponsored for the 83% of the companies interviewed by the Quality Department or Compliance Office. The Lean Management instead is sponsored in all the eleven adopting firms by the Top Management (for the MNE's) or by the Owner (for small and medium organizations). Since the higher is the role in the organization of the sponsoring person, the higher is normally the focus the organization has on that practice and on the efficacy expected, it can be deducted that for Lean the focus on the adoption and on the related expected impact is higher with respect to the ISO9000 that has been sponsored for the majority of the cases by roles that are not part of the top management.

Moreover, if we cross the information regarding the timing of adoption, the role of the practice sponsor with the qualitative information asked regarding the goal of the practice adoption, it possible to notice that, those firms whose timing of adoption ranged between three and six months and whose sponsor was a middle level role have as tactical goal of the model adoption the possibility to gain more attractiveness toward customers, increase their likelihood to gain tenders. On the other hand, those organizations whose timing of adoption ranged from 3 years to 20 years and whose sponsor role was in the top management or the owner, have mainly as tactical goal of the practice adoption the improvement of LT, WIP reduction,

waste and cost reduction, process improvement. The first case is strongly related to ISO whereas the second case is related to Lean.

The difference in terms of goals of adoption highlights once again the different rationality on which is based the implementation of these two management models for the majority of the cases.

As outlined in the previous chapter the difference of rationality and purpose of adoption may influence the communication that the company does to the outside regarding the model adoption.

Such assumption is strongly supported by the results of the empirical analysis that highlights that firms adopting the ISO9000 strongly communicate to the outside their adoption of the standard (average 4,5 points of answer), by using media such as the company website, brochures, presentations to suppliers. On the other hand, the questionnaire confirms that the communication of Lean adoption is less intense (average 3 points of answer) by communicating the adoption just to business partners already existent with the purpose to involve them in the practice adoption throughout the value chain.

Moving the focus of the analysis on the difference of the two models in terms of organizational changes, the fourth module of the questionnaire aims at measuring the influence of these two management practices at three different levels:

- *Changes in the organizational culture*, measured by asking to the firms interviewed to what extent their vision has changed

- *Changes in the organizational structure*, measure by asking to the companies to what extent the structure has changed (from 1 to 5) and describing such changes

- *Changes in the organizational processes*, measured by asking to the firms to what extent the processes have changed (from 1 to 5) and describing such changes.

By gathering the data of the filled out questionnaires it has been highlighted a relevant difference between ISO9000 and Lean in terms of what these practice have changed on the adopting firms.

On the one hand the adoption of Lean strongly impacted on the organizational culture (the average score given to the question "has the company's vision changed" is 4 points), on the organizational structure showing a difference in the type of changes between small firms, that reinforced their quality department giving to it a more strategic role and big companies that revolutionized their structure shifting from a functional to a matrix based structure, on the organizational processes scoring an average of 4,5 points in the related question.

On the other hand, ISO9000 adoption seems to have changed differently the organization. In fact, in terms of impact on the organizational culture all the adopting companies gave a score of 1 out of five with the exception of one firm. In terms of impact on the organizational structure the average score given by the responding firms is around 2 points, with the most dramatic changes characterized by the reinforcement of the quality departments. With regards to the process the ISO9000 seems to have a higher impact with respect to the impact on structure and firm's culture. In fact, the average score given by the companies is around 3,4 points, highlighting changes especially in terms of rationalization of manufacturing processes and operating processes in the offices of purchasing, sales and production planning.

By taking a look at the results of the fourth module we can find a visible relationship with the data related to the third module. In fact, for firms whose adoption process has taken a period  $\geq 3$  year, involved the owner or the top management, the changes that the management practice have brought to the organization are deeper. On the other hand, for companies whose adoption process took a

period shorter than three years and did not involve the higher level of the organization, the organizational reform was almost not existent impacting just slightly on the organizational processes. In turn, it is possible to tie the first relationship to the majority of Lean Philosophy adoptions and the second relationship to all the analyzed cases of ISO9000 adoption. However, for 2 of the 23 firms interviewed adopting ISO9000 such relationship is not demonstrated since their adoption process data (timing and sponsor role) and related changes in the organization are closer to the cases of Lean adoption. These particular cases may highlight that the impact of ISO9000 in terms of organizational change is not intrinsic to the practice but it is related to the process and motives of adoption. In these sense, the effects of ISO9000 on the organization in terms of changes may vary according to the way the standard is adopted.

By moving the analysis on the results of the fifth module, it is highlighted the impact on the organizational performance of the adopted practices.

It has been distinguished between operating performances and financial performances. In the questionnaire, it has been included a question evaluating the performance impact from 1 to 5 and a question describing in a qualitative way the performance improvement obtained. The double question (using the scale and a qualitative one) has been used to evaluate both operating and financial performance.

The results of the questionnaire regarding the fifth module are strongly related to the results of the third and fourth module, meaning that a company adopting the management practice by involving the highest roles of the organization, going through a process that usually takes a period  $\geq$  than 3 years and being impacted on processes, structure and culture, will have higher returns in terms of operating performance and financial performance.

In fact, the organizations respecting this relationship registered an average score of 4,5 points answering to the question related to the operating impact, that has been mainly described in terms of Lead Time reduction, WIP reduction, stock reduction and for the MNE's lowering the costs of raw materials. With regard to the financial performance, the organizations that have undergone a longer period of adoption, involved the top management in the adopting process and whose organization has been impacted deeper by the new practice, have scored an average of 4 points, that has been described mainly as increase of revenues, increase of the company free cash flow and increase of margins due to the improved quality. Once again, all the cases of Lean adoption analyzed respect the relationship outlined above. On the other hand, the majority of the cases of ISO9000 adoption (all but 2) follow the opposite relationship characterized by a fast and overlooked adoption process led just by motives of compliance that has a superficial impact on the organization and in turn, does not affect the operating and financial performance. In fact, in this latter case companies have replied with an average score around 3 points for both operating and financial impact.

To sum up the results of the empirical analysis performed on 25 firms operating in the Chemical and Plastic industry, it can be deducted that the type of management model choice is strongly related to the firm's rationality. For the majority of the firms examined that adopt ISO9000, 21 out 23 organizations, the adoption of the standard was based on the firm's need to be compliant with the norm imposed by the global society. On the other hand, the adoption of Lean, for all the adopting organizations examined (11 companies) was led by the need to improve their performance. The difference in terms of rationality is basically related to the difference in the answers given to the third module of the questionnaire

“motives and process of adoption”. Such discrepancies affect in turn the type of change the two models imply in the organizations. Whereas the two models, as we analyzed in the previous chapters, rely on an approach of continuous improvement by making the adopting firm evolve over time with small changes in a piecemeal fashion, we found differences in the answers provided by the interviewed companies in the questions included in the fourth module “what has been changed”. Moreover these differences are highlighted also in terms of the impact of management model on the companies’ financial and operating performance. By examining the two firm whose ISO9000 adoption had a stronger impact on the organizational change and on the companies’ performance, we can deduct that whereas the majority of analyzed firms adopted the practice with a formal rationality, the ISO9000 does not imply always such ratio of adoption, but can be adopted also with the willingness to improve the organizational performance and not just the fulfill a need of compliance. Such latter case has been highlighted especially in small or medium firms that try to use the certification as a means of compliance and at the same time as a model of management for improving their performance, given the limited amount of resources in comparison to MNE’s that seem to rely on ISO9000 just as a means for compliance and use other models for effectively change their organizations and improving their performance. Hence the ISO9000 standard does not intrinsically imply always an adoption based on formal rationality, however by increasing the organizational reach (European and Global, rather than local) and the companies size (medium and big companies) the likelihood of adoption based on Formal Rationality increases, led mainly by the stronger external pressures coming from a more competitive environment and a higher availability of resources to be invested by adopting ISO9000 purely as standard of compliance and other practices such as Lean as means

to effectively change the organization and improve the organizational performance.

## **Final Conclusion**

Firms' operating environments for most of industries have been revolutionized with the advent of Globalization, making it more turbulent and fast changing.

Such phenomenon has acted both by tightening social and economic exchange between different social units and as a political and cultural process that has reshaped the role of Organizations in the global society.

New global actors increase their importance in the Global scenario, in the meantime the role of National State is progressively weakened.

In this new Global framework on the one hand Organizational Change plays a central role on the organization's survival. On the other hand such topic can be dealt with two different perspectives.

By referring to the weberian discourse on rationality, two different ratios have been identified as drivers/motives of Organizational Change Models adoption: the Material Rationality and the Formal Rationality.

On the one hand management practice leading to organizational change can be adopted by Organizations with Material Rationality, implying a firm's willingness of practice adoption to improve its organizational performance for its own self-interest. On the other hand, firms may adopt a practice with the main purpose of compliance to the norms imposed by the Global Society without effectively change their organization.

It has been been dived the case of ISO9000 set of Quality Standards, as a management practice that seems to be adopted mostly with a formal rationality due to its main features that make

the practice a standard for which Organizations can get a certification to use as "Marketing Badge" to gain legitimization in Global Markets.

The Lean Management System has been taken as reference as practice mostly adopted for the firm's self interest to increase the organizational performance.

After having performed the empirical analysis gathering data through a questionnaire sent to 40 companies operating in the Chemical and Plastic Industry (receiving positive feedback on 25 firms), it has been verified that differences in the motives and process of adoption (identified by the Top Management Involvement; Duration of the Process and Tactical Goals underlying the practice adoption) strongly impact on the actual change on the organization (in terms of processes, culture and organizational structure) and in turn on the organizational performance obtained with the model adoption.

For all the cases of Lean Management adoption, the relationship "*ratio of adoption - changes in the organization - organizational performance improvement*" was the one related to the material style of Organizational Change, characterized by a strong willingness to improve the status quo, a deeper change in the organization and an effective and visible improvement on the organizational performance.

On the other hand for most of the ISO9000 adopting companies, the relation was strongly related to the formal style of Organizational Change, characterized by the willingness to be compliant with societal requirements, a superficial change in the organization and a less visible improvement on operating and financial performance.

Such results of the empirical analysis confirm that the two management practices, whereas similar in their approach to organizational reform, are adopted most of times with different purposes also in the Chemical and Plastic Industry.

However, for two out of twenty five companies analyzed, seems that ISO9000 has been adopted with a Material Rationality.

These two cases lead to the conclusion that ISO9000 does not intrinsically imply an adoption according to a Formal Rationality, however with the increase of the Organization size, resources and reach of markets and operations, companies tend to use it as a means of compliance with societal requirements (that are stronger the wider is the organizational reach), preferring to use practices such as Lean to effectively improve the organizational performance.

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### **Sitography**

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