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Multidisciplinary Management: model of excellence in the management applied to products and services

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The Multidisciplinary Management is the guiding vision of modern organizations and the systems thinking which requires new approaches to organizational excellence and quality management process. The objective of this article is to present a model for multidisciplinary management of quality applied to products and services based on American, Japanese, and Brazilian National Quality Awards. The methodology used to build this model of Management Excellence starts from an analysis of the specific features of each Quality Award and the principle of a multidisciplinary administration, serving as support for the management of process excellence and results. The proposed model enables to manage organizational outcomes with sustainability, and to identify and place the task priorities in order of importance and urgency in the corporate environment. This strategy shall bring feedback for organizational results excellence.

Keywords: Administration; Multidisciplinary Management; Model of Excellence; Quality Award.

1. Introduction

The management thought grounded in the cartesian model and in mathematical logic or evolutionary thesis is not enough to fill a space of contradictions that is beyond its philosophical approaches. This is a truth, even valuing the competent systematization of Scientific Theory made by engineer Frederick Winslow Taylor (1856-1915), and adapted in Henri Ford's (1863-1947) factories focusing on operational efficiency in the industrial process, and Jules Henri Fayol (1841-1925) who founded the Classical Theory of Administration, to understand the administration process beyond than thought Taylor or Ford, seen with the strategic and tactical look of a director or manager [1].

Fayol's contribution was decisive in shaping the thinking and the study of modern organizations, especially when he structured the four functions of management: Planning, Organizing, Directing and Controlling. Undeniably, the formal logic of cartesian thinking enabled the student, simplifying the complexity of the organizational structure at levels of management processes, making it easier to

modern teaching of managers about their practices, with what is known as a General Theory of Administration. On the other hand, what to do when the Administrative Thought can not diagnose the evolution of modern enterprise systems?

The answer may lie in the own management model. The word model, derived from the latin “modulus”, leading to mold, shape, and although used in different contexts and different meanings, implies somehow the idea of the organizing and ordering of parts that make up a set. Corroborating this idea, a model is, by definition, an abstraction of reality, which may replace complexity for simplicity [2]. In other words, a model is and remains a tool that, when combined with the knowledge and experience and used properly, can help the organization to find solutions to old and new problems [3].

Another vital feature of a management model is that it fosters innovation, in order to create competitive advantages in relation to its competitors, and this requires an organizational culture focused on learning and innovation, thereby reinforcing the valuable asset that an organization has, which is its human capital, as a result creating a healthy environment for knowledge creation [4].

The management model is the body of knowledge in an organization that enables the self-sustainability of the business, being essential to stimulate organizational learning, coupled with the development of specific competences able to operate a system that wins customers' preference, but also ensures excellence of the process as a whole and in a multidisciplinary way.

2. Objective

Presenting a quality management multidisciplinary model applied to products and services with the Management multidisciplinary model – MGM, based on the National Awards of the American, Japanese and Brazilian Quality.

3. Contextualization and Methodology

In this study, we selected three management models that are substantiated on the fundamentals and indicators of quality, that after each management cycle are subjected to the diagnosis of their processes and outcomes: Malcolm Baldrige National Quality Award (USA), National Quality Award (Brazil) and Japanese Quality Award (Japan), by presenting a deep learning in the way of “manage”. It is important to say that all of the Quality Awards had its origins in 1951 with the establishment of the Deming Prize by the Japanese, honoring William Edwards Deming, dedicated to quality control focusing on the guaranteed 14 Deming points of quality, in the development of new products and the application that master’s business philosophy.

The United States established the Malcolm Baldrige National Quality Award in 1987 with the Public Law 100-07. The American model of quality in the 90s also

served as the basis for the proliferation of management models in all Southeast Asia. In Japan this award was called Japanese Quality Award

The Brazilian Program of Quality and Productivity was formalized in 1986 with the aim of preparing Brazilian companies to a new reality: globalization. As a result of this movement the National Quality Foundation, was created and launched the Brazilian National Quality Award in 1991.

Table 1 shows the main characteristics of the three models that supported the proposed management model.

Quality award	Brief historic settings	Core values and concepts	Criteria	Purpose
Malcolm Baldrige National Quality Award (USA) [5]	Created in 1987 by Public Law 100-07 based on the Deming Prize, under the supervision of Deming, Juran and Feigenbaum. It is administered by by NIST - National Institute of Standards and Technology	Systems perspective; Visionary leadership; Focus on the future; Managing for innovation; Agility; Organizational and personal learning; Valuing workforce members and partners; Customer- driven excellence; Social responsibility; Management by facts; Focus on results and creating value.	1- Leadership; 2- Strategic planning; 3- Customer focus; 4- Measurement, analysis, and knowledge management; 5- Workforce focus; 6- Process management; 7- Results.	Promotes the strengthening of management best practices, facilitates internal communication and serves to better understand the system of management, planning, training and judgment to customers, as well as their strategies and action plans focused on the market.
National Quality Award (Brasil) [6]	Created in 1991 based on the Malcolm Baldrige Award, it is administered by FNQ-National Quality Foundation.	Systemic thinking; Network actuation; Agility; Fundamental decisions; Organizational learning; Innovation; Visionary leadership; Vision of the future; Customers and market knowledge; Social responsibility; Valuing people and the culture; Process oriented; Value generation.	1- Leadership; 2- Strategic planning; 3- Customer focus; 4- Information and knowledge; 5- Workforce focus 6- Process management 7- Results.	The Management Excellence Model proposed by the National Quality Foundation, uses PDCL cycle (Plan, Do, Check, Learn), to meet the needs and expectations of its customers, which must be identified, understood and used, so that products can be developed, creating the need to conquer and retain them, acting to contribute to the Socio Environmental development.
Japan Quality Award (Japan) [7]	Created in 1995 based on the Malcolm Baldrige Award, incorporating Japanese practices. It is administered by JPC – SED – Japanese Productivity Center for Socio-Economic Development.	Customer - driven quality; Leadership; Process-oriented; Creating "Knowledge"; Agility; Partnership and fairness.	1- Leadership of senior leaders; 2- Social responsibility of management; 3- Understanding and responding to customer and Market needs; 4- Strategic planning and deployment; 5- Improving employer and organizational capacities; 6- Customer value creating process; 7- Information management 8- Activity results.	It is a tool for changing the way of managing creating a culture for managing competitiveness. Looks for companies that continue to create value through continuous process of self-innovation, to transform their global management systems in customer-oriented structures.

Table 1: Models of the Quality Awards. (Source: author, 2014)

The methodology used to build up the Model of Excellence in Management applied to products and services, was developed in three steps:

Step1 –Bibliography Research: Analyze the specific characteristics of each Quality Award and the principle of a Multidisciplinary Management, working as a support for the management of excellence in the processes and results.

Step 2- Multidisciplinary Process: Integrating each component of the system considered as quality indicators, starting of the Action Method, that substantiate the strategic thought, based on the specific technology of each product and / or service, which drives to excellence of the result.

Step 3 - Person as manager: Enabling and maximizing the technical and management skills that enable systemic understanding of the Management Multidisciplinary Model, applied to the development of the objective conditions of quality control in the results in high performance corporate environments.

4. Theoretical background

Frederick W. Taylor (1856-1915), in his work "Principles of Scientific Management" [8], published in 1911 observed that the production of each worker could be maximized by at least two thirds of his capacity, however was not reached due to a kind of systematic vagrancy. To resolve this issue, he thought that workers should be seen as instruments of production and, as such, should be monitored and controlled to achieve effectiveness and the operational efficiency of the organization. Taylor signaled that "the basic unit of scientific management was the function and construction of a formal structure required first establishing objectives and then dividing the work into smaller units (simple tasks), which would be placed as a coordinated system (the workers tasks rationalization)" [9]. The production process must be integrated and collaborative among the stakeholders that, directly or indirectly, make up the corporate system. Therefore, suggests that teamwork with the leader and other workers is responsible for organizational success.

Henri Fayol (1841-1925), in turn, complements the observations of Taylor when developing a study on the organizational structure, seeking to understand how the relationship between the corporate sectors can interfere with productivity. As show "Fayol believed in general and unique principles of sound administration and the role that scientific prediction and the proper methods of administration would play in improving business results" [10]. The same authors continue their analysis with presentation of the six interrelated operational groups proposed by Fayol: technical operations, sales, financial, safety, accounting and administration operations.

Management is one of the functions of the company, but differs from the others by its specificity and macro importance. "None of the other functions is responsible for formulate the overall program of action of the company, build its social body, coordinate efforts, harmonize the actions " [11]. The purpose of Fayol was to structure the organization as a whole, stating that the functions of management are: predicting, organizing, commanding, coordinating and controlling.

Unlike Taylor and Fayol, who presented a prescriptive theoretical orientation, Max Weber [12] formulated his theoretical approach as an ideal model from a descriptive approach to organizational structure, assuming that organizations function as a closed system, and the bureaucracy is their ideal and most efficient form of

organization which, even being impossible to be found in practice, seeks to address the corporate whole and focuses on the internal environment of the organization, in detriment of its external environment.

5. Multidisciplinary Management and its management model

A multidisciplinary approach is grounded in disciplinarity, which organizes scientific knowledge, establishing the division and specialization of labour [13], as proposed by Taylor, Fayol and Weber in their studies, aiming to respond to the complexity of the diversity of the investigated object, but preserving their autonomy and border compared to other areas of knowledge, using specific theories, language and techniques.

The Multidisciplinary Management considers that the focus on the task allowed Taylor managerial mechanisms to be revolutionary at his time, increasing productivity, reducing fatigue of the workers and optimizing the economic viability of the process, reaching more profitable results in the production line, therefore, an unique contribution to organizations. On the other hand, the task is part of a much larger purpose, since it is the middle of the process, the start and end of the activity needing to be properly controlled and supervised, what requires the contributions of Fayol and Weber to organize and structure the stages that precede and exceed the task itself.

This model understand that the present corporate environment information enables the production of knowledge, needed to establish a quality management and organizational learning. Moreover, like any model, the development of the method of intervention requires the kind of technology and strategy to be employed for reaching the benefit of the best result and the people involved in the process.

To manage in a multidisciplinary way, according to the MMM model, means to be enough technically competent to manage people to become autonomous, have efficient processes, efficient procedures, visionary plans, political diversity of interests and new administrative paradigms, able to guide the creation of new models of technical competence and excellence in organizational management. Each dimension, which integrates multidisciplinary management, challenges the ability of the organizational manager, not only as a strategist, but mainly as an entrepreneurial leader in administrative and technical tools of corporate management, implemented through what we call 6P system:

1. **Persons:** form the intellectual capital of the whole entire organizational system, prepared to address specific and general problems in the field of knowledge management and corporate learning;
2. **Process:** stages of development of productive organization, composed of input and consumption, from tangible and intangible resources needed to produce the intended result;

3. **Procedures:** techniques and methods applied in the production process, with the objectives of the tasks interpretation, understanding the goals of results and optimizing resources to achieve operational efficiency of production;
4. **Plans:** strategic systematization of corporate sustainability, from the drafting stages of increasingly customized output in terms of economic efficiency, productivity and profitability, assessing the trends in the consumer market and innovating solutions to practical problems of the clients;
5. **Policies:** ability to understand and manage the diversity of interests involved in the organizational process, creating real conditions for disseminating the shared investments, objectives, resources, capabilities, partnerships, strategic alliances and intellectual capital;
6. **Paradigms:** transformation of the disciplinary mental model in a multidisciplinary model that joins the process of technological innovation, optimizes resources sustainably, promotes intellectual capital as a source of learning and knowledge production in the context of corporate governance, decision making and organizational culture.

The Multidisciplinary Management Model – MMM is shown in Figure 1

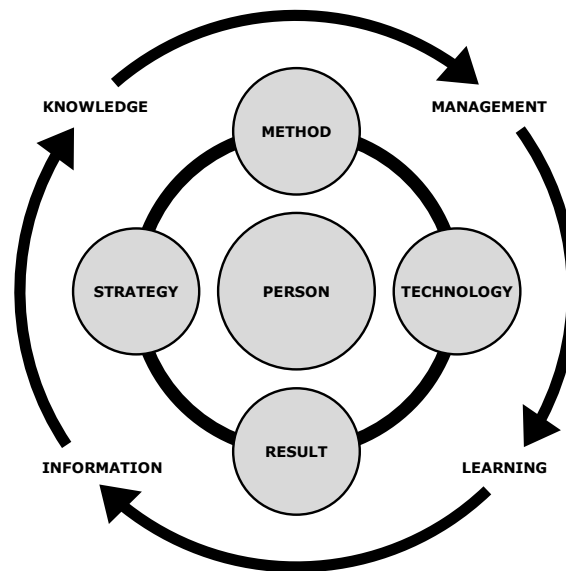


Figure1: Multidisciplinary Management Model – MMM. (Source: authors, 2014)

6. Discussion

Multidisciplinary Management helps to better understand the process of applying Multidisciplinary Management Model – MMM, guiding decision making about the use of the most appropriate administrative tools to a particular management problem, such as to develop a product or service, or to adopt a strategic choice to better position the organization in the market.

The main contribution of the Malcolm Baldrige National Quality Award was challenging U.S. companies in the "Quest for Excellence" and "Excellence in Performance" to compete with Japanese products.

The National Quality Award in Brazil led to the beginning of a change in Brazilian entrepreneurial mindset, influenced the curricula of the Administration courses in the country since 1995 and brought a new managerial vision to Brazilian managers and enterprises owners.

The Japanese Quality Award contributes to strengthen broader approaches to the management improvement activities within the industrial community in Japan. It also provided the impetus for the creation of local awards systems and is currently being pursued in ten regions, including Fukui, Nigata, Chiba, Mie and Tochigi.

The proposed model is aligned with the core values and concepts recommended by the Malcolm Baldrige National Quality Award (USA), National Quality Award (Brazil) and Japanese Quality Award (Japan).

7. Conclusions

Linear administration proposed by disciplinary gradually turns to the search for a Multidisciplinary Management, able to update and innovate models and management practices, responding to the demands of the complexity of the Information Age.

The study about the National Quality Awards of U.S., Japanese, and Brazilian served to identify common points of each award, which strengthen each other, but also possible to observe weaknesses of cultural context, requiring the difference of the management style, according to nationality or the origin of each person. This observation was consolidated at the MMM model proposed in this research, placing the center of the system, the person as manager.

The proposed Multidisciplinary Management Model enables managing organizational outcomes and sustainability, identifies and places the task priorities in order of importance and urgency in the corporate environment. This strategy brings a feedback of excellence to organizational results.

References

1. MORIN, Edgar; CARVALHO, Maria da Conceição; ASSIS, Eduardo (org.). The interaction between knowledge and education – Complexity: the seven knowledge and other essays. São Paulo: Cortez, 2002;
2. HAVE, S. T. et al. Management Models. New York: Prentice Hall, 2005.
3. FERREIRA, V. C. P. et al. Management Models. Rio de Janeiro: FGV Management, 2008.
4. KROGH, G. V.; ICHIRO, K.; NONAKA, I. Facilitating the creation of knowledge: Reinventing Business with the Power of Continuous Innovation. Rio de Janeiro: Campus, 2001.
5. MALCOLM BALDRIGE NACIONAL AWARD. Criteria for Performance Excellence. Gaithersburg, USA. 2013-2014
6. FNQ – NATIONAL QUALITY FOUNDATION, Criteria for Excellence. National Quality Foundation. Sao Paulo, 2013
7. ASO – JAPAN QUALITY AWARD, Asian Productivity Organization, 2005. Available on:<http://www.apo-tokyo.org/productivity/014_prod.htm>. Accessed on february, 26, 2013.
8. TAYLOR, Frederick Winslow. The Principles of Scientific Management. (1911). www.ibiblio.org/eldritch/fwt/t1.html (Accessed on: 07/ 01/ 2014).
9. SILVA, Reinaldo O. Theories of Administration. New York: Prentice Hall, 2008.
10. SOBRAL, Filipe. PECCI, Alketa. Administration – Theory and Practice in the Brazilian context. Sao Paulo: Pearson Prentice Hall, 2008;
11. FAYOL, Henri. Industrial and General Administration. Sao Paulo: Atlas, 1995;
12. WEBER, Max. Economy and Society: Fundamentals of comprehensive Sociology. Brasilia: UNB, 1998;
13. NICOLESCU, Basarab et al. (orgs). Education and Transdisciplinarity. Brasilia: UNESCO, 2000.