EFFECTIVE MANAGEMENT OF PRODUCTION THROUGH SPIRITUALITY AT WORK

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ABSTRACT

Purpose: This article aims to analyze why Japanese organizations have been successful over the years with the implementation of the Toyota Production System.

Methods: Adopting the Shingo Model as a reference for research, the cultural facilitators found in dimension 1 of the model stand out, with a strong alignment with spirituality in the workplace, as a pillar to guarantee operational excellence aligned with the beliefs and values of the staff, in favor of organizational sustainability. For that, a bibliographical research was carried out of 41 articles from the Scopus databases, addressing the constructs Spirituality in the Work environment and the Shingo Model, within an application context associated with sustainability and added to a comparative analysis.

Results and discussion: From the analysis of the results, it was possible to understand that the Spirituality at Work element is behind the model of the Toyota Production System. The proposed dimensions to characterize an EAT are based on the Shing Prize Model of Effective Management versus the EAT Model by Ashmos and Duchon (2000) versus Bella et al. (2018).

Implications of the research: The article portrays a subject that is a key point for improving productivity and developing an individual's social conscience, so necessary for the sustainability of the planet.

Originality / Value: It was possible to infer from the literature that no articles were found that associate the Shingo model with the theory of Spirituality at work, but the articles by Ashmos and Duchon (2000) and Bella et al. (2018) stand out within the context of organizational sustainability.

Keywords: Shingo Model, Effective Management, Spirituality at Work, Toyota Production System.

GESTÃO EFICAZ DA PRODUÇÃO ATRAVÉS DA ESPIRITUALIDADE NO TRABALHO

RESUMO

Finalidade: Este artigo tem como objetivo analisar por que as organizações japonesas obtiveram sucesso ao longo dos anos com a implantação do Sistema Toyota de Produção.

Métodos: Adotando o Modelo Shingo como referência para pesquisa, destacam-se os facilitadores culturais encontrados na dimensão 1 do modelo, com forte alinhamento com a espiritualidade no ambiente de trabalho, como pilar para garantir a excelência operacional alinhada às crenças e valores dos colaboradores, em prol da...
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sustentabilidade organizacional. Para tanto, foi realizada uma pesquisa bibliográfica de 41 artigos das bases de dados Scopus, abordando os construtos Espiritualidade no Ambiente de Trabalho e o Modelo Shingo, dentro de um contexto de aplicação associado à sustentabilidade e somado a uma análise comparativa.


Implicações da pesquisa: O artigo retrata um tema que é ponto chave para melhorar a produtividade e desenvolver a consciência social do indivíduo, tão necessária para a sustentabilidade do planeta.

Originalidade/Valor: Foi possível inferir da literatura que não foram encontrados artigos que associam o modelo Shingo à teoria da Espiritualidade no trabalho, mas os artigos de Ashmos e Duchon (2000) e Bella et al. (2018) se destacam no contexto da sustentabilidade organizacional.

Palavras-chave: Modelo Shingo, Gerenciamento Efetivo, Espiritualidade no Trabalho, Sistema Toyota de Produção.

1 INTRODUCTION

Considering the current reality of production systems, it is clear that Industry 4.0 and digital transformation have established a new logic regarding the role of people in organizations.
(Bezerra, 2023). While the Taylorist/Fordist Model made intensive use of people in its production lines, expanding the concept of work specialization; organizations of the third millennium realigned the human factor of companies at levels where innovation and creativity represent watchwords. The myriad of organizational representations that make up large-scale projects are based on human interactions, through networks of business and social relationships based on technology (Oliveira, 2013).

The alignment of structural, technological and human resources directly interferes with the intended results of any project. Actions focused on training people, social interactions and building networks will remain disconnected in view of the lack of processes, management systems and governance of organizations (Bezerra et al., 2017).

The production systems that stand out in the contemporary world are the result of the understanding that the influence of individuals, and their relationships, promote in the corporate environment. It is companies that have adopted differentiated approaches, strongly centered on behavioral, environmental, cultural and spiritual factors that have achieved better results.

The effectiveness of current management models applied to modern production systems around the world was strongly influenced by Japanese industries. The losses with World War II in people and infrastructure, scarce natural resources and the geographical distance from potential markets distanced Japanese organizations from the Fordist production system in the second half of the 20th century. The level of effectiveness of Japanese organizations, already in the 1970s, reached high levels in relation to the American and European production systems.

The expansion of these companies beyond their territory, more strongly after the 1980s, took their organizational culture with them, spreading their principles to other countries. The management system with a human-centered view, based on self-awareness, purpose in life and community involvement, has contributed positively to the effectiveness of organizations aligned with the Japanese management model. The Shingo Model, created from the implementation of the Toyota Production System, was conceived in four dimensions - people, organizational processes, company strategy and results achieved that need to be aligned to guarantee operational excellence (Edgeman, 2019).

In turn, studies on spirituality in the workplace deserve to be highlighted given their ability to create conditions that enhance business sustainability and economic development (Edgeman, 2019). It is a management vision centered on three aspects - human beings and their self-awareness, life purpose and community - and which considers them as key factors to ensure good working relationships and a healthy work environment, with motivated and satisfied professionals, which will ensure greater organizational sustainability (Bella et al, 2018).
It is in this context that this article seeks to answer the following research question: How to promote effective management through spirituality in the workplace? For that, the theoretical framework on effective management, based on the Shingo Prize model for Operational Excellence, and on spirituality in the work environment (EAT); in order to identify points of convergence and divergence that allow proposing an improvement in the Shingo effective management model, so that it contemplates spirituality in the workplace as one of its guiding pillars.

As Vasconcelos (2018) warns, there is a lack of academic studies involving (EAT) in Latin America and no studies were identified in the Scopus database that carried out an analysis of (EAT) with the Shingo Prize model of effective management and within an application context associated with sustainability and digital transformation. In this way, this article contributed to the discussion on the subject, within a context of production

2 LITERATURE REVIEW

2.1 “SHINGO PRIZE” MODEL

According to Edgeman (2018) companies, whether public, private or non-profit, are driven by purposes and by their vision, which needs to be shared and constantly improved by their employees. However, the way each company transforms the strategic objectives into operationally effective results varies from company to company, becoming a challenge to be overcome and where several companies fail. Although there is no ready-made recipe that is valid for all companies, those that present the best and most lasting effective results are those that use an operational excellence model, such as the Shingo Prize model, established in 1988 by Shigeo Shingo.

The Shingo Prize is an award given to companies that demonstrate world-class results and organizational culture, focused on quality and operational excellence (Nielsen et al., 2018). It is a program that recognizes the integrative, tactical and strategic application of initiatives that promote the cultural transformation of the company in favor of lean thinking (Duarte & Machado, 2017). These are Virtuous Cycles of Shingo operational excellence principles, embedded in the psyche and practice of companies (Edgeman et al., 2017). According to Burawat (2019), there are companies that implement models of operational excellence, but are unable to maintain it continuously, so that their results are not sustainable.
According to Kennedy (2019), for a company to achieve quality results, this organization must practice excellence, maintaining an adequate management system and aligned with its purpose. In this context, the word excellence is defined as the way to achieve a quality result, based on a set of basic principles to be followed and respected. A model of excellence allows each individual, interest group, industry and institution to share the same language for quality results. The pursuit of excellence should be the goal of all great leaders (Miller et al., 2013).

According to Edgeman (2018) and Sony (2019), the Shingo Prize model of operational excellence is formed by three insights - 1) Ideal results require ideal behavior, 2) Principles inform ideal behavior and 3) Systems drive behavior, which gave rise to ten principles, which were divided into four categories that represent the evaluation criteria: a.1) Cultural enablers - Lead with humility and Respect each individual. Respect for each individual is a prerequisite for leading with humility, and the ethical behavior of leaders must be an example to be followed by all; b.2) Continuous Improvement - Embrace scientific thinking, focus on processes, ensure quality at the source, create and deliver value, and strive for perfection. These are central principles for the integration between the business philosophy, systems, techniques and structure, which allows achieving sustained improvement; c.3) Business Alignment - Create constancy of purpose and think systematically. The different parts and processes of a company work need to work with aligned purposes, so that employees do not get involved in activities without added value; and d.4) Results - Creating value for customers. The understanding of this principle goes beyond the final customer, understanding the creation of value for all interested parties, as well as its effective impact, that is, the consequences of the results, whether intentional or not.

The Shingo Prize model is represented and detailed in Figures 1 and 2. The principles of the Shingo Prize model are timeless and are ontologically valid for any culture and era, which makes it universal (Edgeman, 2018). A company's evaluation for the Shingo award, over months or years, seeks to determine the organization's degree of alignment with its principles of operational excellence. They are carried out by external examiners from the Shingo Institute and provide an analysis of gaps to be improved by companies, based on behaviors, documentation and measures (Duarte & Machado, 2017; Nguyen et al., 2018; Gomez Segura et al., 2019). However, there are several other quality awards, which have criteria for promoting best quality management practices: Malcolm Baldrige Award, HKMA Quality Award, European Quality Award, New Zealand Business Excellence Award, Japan Quality Award,
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*Egyptian Quality Award*, dentre outros (Nguyen *et al*., 2018; Kennedy, 2019; Duarte & Machado, 2017).

**Figure 1**

*Shingo Prize Model*

Source: Edgeman (2018)

**Figure 2**

*Categories and Principles of the Shingo Prize Model*

Source: Miller *et al.* (2013)

2.2 SPIRITUALITY AT WORK

First of all, it is worth noting that when talking about spirituality in the workplace (EAT), it does not mean that the subject addressed is related to religion and beliefs; but rather about the connectivity between people or between people and the work environment, in the sense of self-fulfillment. It is about carrying out work that has meaning, which goes beyond the
result itself, involving thinking about others and the community context. The term was created in 1994 and since then it has been treated as a recognizably impactful topic for the management area - academic and managerial -, since an environment of belonging, with good working relationships between employees and with work, brings effective gains to the results of companies (Ortiz-Gómez et al., 2020; Joelle & Coelho, 2019).

It is a multidisciplinary subject, studied by several areas of knowledge, such as religion, psychiatry, psychology, nursing and administration, among others, but its core is associated with management studies. The USA is the country with the largest number of publications on the subject, and countries such as China and Russia draw attention to the low number of academic publications on the subject. Countries in Europe and Latin America also have a low level of publications in this regard. There are also no cross-cultural studies involving different countries (Vasconcelos, 2018).

EAT is a structure of organizational values based on a human-centered organizational culture, which seeks to improve its performance by fostering communication and mutual understanding. It is based on personal and philosophical values, where employees see themselves, and are seen, as spiritual beings, with a sense of purpose, meaning and mutual connection with their colleagues, in their workplace. Empirical studies attest that EAT has a relevant and significant focus on personal attitudes, which once more satisfied, transform these employees into efficient and loyal employees, who produce more and better, ensuring the perpetuity of the organization where they work (Sani & Ekowati, 2019). In this sense, organizations envisioned and now recognize the benefits of adopting a spirituality-based management (Vasconcelos, 2018).

According to McGhee and Grant (2017) and Ortiz-Gómez et al. (2020), EAT is difficult to classify and measure, as it is subjective and represents an individual and unique sensation or feeling; that varies from person to person, from the individual attributes of each one, their theoretical and practical assumptions, as well as personal values, philosophies, assumptions and dogmas. Each individual seeks their life purpose for work, which enables a strong connection with the organization, and which allows them to enjoy the alignment of their personal values and beliefs with those of the organization. Human beings are complex, emotional and not purely rational creatures; so pre-formatted templates and definitions will be challenged and not accepted.

However, EAT is a fact, a social reality that is present in any company. Its meaning and impact should not be relativized by the individual vision, since it is also an encounter with the spiritual reality of a community (McGhee & Grant, 2017). In this sense, a series of studies
sought to propose models that explained what EAT is, based on certain constructs. For Milliman et al. (2003) and Ortiz-Gómez et al. (2020), EAT can be defined from 3 dimensions: 1) meaningful work (individual level), the personal life of employees is fed by work that has meaning and is aligned with their personal purpose, 2) sense of community (group level) - deep connection between employees, with true mutual support and care, aligned with a common purpose, and 3) alignment with the organization's values (organizational level), sharing and connection of the organization's values and mission among employees. Both the organization cares about the welfare of the employees and vice versa.

Ashmos and Duchon (2000), who were the first authors to propose a way to measure EAT, based on empirical studies, consider the existence of four dimensions to characterize EAT: 1) meaningful work (individual level), workers' desire to get involved with a job that gives meaning and meaning to their lives and to society; 2) opportunities for inner life (individual level), workers' search for the desire to find a job that allows them to express various aspects of their being, inner and outer, including physical, emotional and cognitive needs; 3) sense of team connection and community (group level), feeling of connection developed among co-workers, where work is seen as a source of spiritual growth and connection between people; 4) alignment with organizational values (organizational level), convergence of personal values with the mission and purpose of the organization. In turn, Joelle and Coelho (2019) added another dimension, inspired by Maslow's studies (1970): 5) emotional balance and inner peace (individual level), establishing the link between professional and personal life, seeking balance and self-realization.

According to Vasconcelos (2018), despite the Ashmos and Duchon (2000) model being the most widely accepted, replicated and restudied, there are other researchers proposing different dimensions to characterize EAT. Kinjerski and Skrypnek (2006) consider 4 dimensions to characterize EAT: 1) engaging work, 2) mystical experience, 3) sense of community and 4) spiritual connection. In turn, Tombaugh et al. (2011) focus on spiritual expression at work. Liu and Robertson (2011) identified relevant dimensions such as: 1) interconnection with a higher power, 2) interconnection with human beings, and 3) interconnection with nature and all living beings, going beyond statistical analysis, and also analyzing less tangible issues about EAT.
3 METHODOLOGICAL PROCEDURES

3.1 LITERATURE REVIEW

In our systematic literature review, we followed the guidelines for choosing report items for systematic reviews and meta-analyses (PRISMA), whose flow is shown in figure 3 (Moher et al., 2009).

**Figure 3**

*Review process based on the guidelines for choosing report items for systematic review and meta-analyses (PRISMA)*

Source: adapted from Moher et al. (2009).
For the selection of relevant publications, we used the interdisciplinary academic database Scopus, between the periods of 2015 and 2021. The search result was refined by using the keywords (“Effective Management” AND (“workplace spirituality” OR “Shingo Prize” OR “Culture” OR “Digital Transformation” OR “Sustainability”)). After analyzing them, it was possible to obtain a list of 41 studies with full texts. The studies in this sample were published between 2015 and 2021 and in English.

3.2 COMPARATIVE ANALYSIS

According to Fachin (2001) the comparative method, adopted in this article, investigates things or facts, seeking to explain them from their points of convergence (similarities) and divergences (differences). In the case of this article, the comparison was based on the analysis of concrete data - Shingo Prize Model of Effective Management versus EAT Model by Ashmos and Duchon (2000) versus Bella et al. (2018), deducing similarities, but with special focus on the divergences of general systemic elements constant in both models - Principles and categories of the Shingo Prize model versus Levels and Dimensions of the EAT model by Ashmos and Duchon (2000), providing an indirect investigation.

From the literature review and theoretical deepening on the Shingo Model and Spirituality at Work (ET) constructs, it was chosen for comparison purposes, given the numerous models that propose different dimensions to characterize the EAT, by adopting the dimensions of the model proposed by Ashmos and Duchon (2000). According to Vasconcelos (2018), it is the most widely accepted, replicated and restudied academically, serving as a reference for the other models created.

3.2.1 Convergence points

It is observed that the Shingo methodology has its foundations based on the Toyota Production System, which is a production system that aims, through the implementation of a series of tools, to identify and eliminate all losses present in a production system, enabling the reduction of its costs. According to Yarbrough et al. (2022), Ohno (1988) classified the losses in seven large groups of activities that do not add value and that are; overproduction loss, transport loss, processing loss, movement loss, waiting loss, defect loss, inventory loss. These losses are visibly aligned with the dimensions: Dimension 2: Continuous improvement of the process that is linked to the organization's processes. Dimension 3: Business alignment, which
is linked to the strategic alignment of the company as a whole. Dimension 4: Results, which is linked to results and relationships with customers.

These dimensions (2, 3 and 4) have a bias aimed directly at improving organizational efficiency and improving the company's productivity. It is observed that Dimension 1: through the cultural facilitators who are linked with the people of the organization is what makes the big difference in the Methodology for companies that adopt the Toyota Production System in the management of the organization. This is the central point of the approach of this article, where convergences are found between the articles of Asmos and Duchon (2000) where “spirituality is infiltrating the office and companies are turning inwards in search of a "soul" as a way to foster creativity and motivate leaders” and Bella et al. (2018) where “spirituality in the workplace makes an organizational change towards sustainability” and which has a human-centered view and that this dimension 1 is the great answer, through the transformation by the culture that a company maintains its continuity.

Next, in table 1, comparisons of the methodologies analyzed in the article are presented.
### Table 1

**Comparisons of the methodologies analyzed**

<table>
<thead>
<tr>
<th>Dimension 1: Cultural facilitators. It is linked with the people of the organization.</th>
<th>A</th>
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<th>C</th>
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<tr>
<td><strong>Guidance:</strong> Respect each individual. Lead with humility. <strong>Support:</strong> Cultivate long-term relationships, develop intrapersonal and interpersonal skills.</td>
<td><strong>The inner life as spiritual identity:</strong> Understanding spirituality at work starts with recognizing that people have both an inner life and a spiritual identity. <strong>Spirituality Movement:</strong> A dimension that has less to do with rules and order and more with purpose, love, and community.</td>
<td><strong>Spirituality in the workplace:</strong> An organizational shift towards sustainability.</td>
<td><strong>Self-awareness.</strong>  - Purpose of Life.  - Involvement of Community. <strong>Spiritual human factors:</strong> Intrapersonal.  <strong>Spiritual Need:</strong>  - New paradigms for work relations, which are related to motivation and job satisfaction.</td>
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<td>people, delegate and involve everyone, ensure a safe environment.</td>
<td>inner life and an outer life, and that nourishing the inner life can lead to a more meaningful and productive outer life. Recognizing spirituality in the workplace means seeing the workplace as populated by people who have a mind and a spirit and believing that the development of the spirit is as important as the development of the mind. <strong>Meaning and purpose of life:</strong> Life and sustenance must not be separated, but must flow from the same source, which is the Spirit, for both life and sustenance have to do with the Spirit. Spirit means life, and both life and sustenance are about living in depth, living with meaning, purpose, joy, and a sense of contribution to the greater community. A spirituality of work is to bring life and sustenance back together.</td>
<td>more to do with purpose. Downsizing, reengineering and layoffs have transformed the workplace. Philosophies like Zen Buddhism and Confucianism, which encourage meditation and emphasize values like loyalty to your groups and finding your spiritual center in any activity, is finding acceptance. Recognition that employee creativity needs fuller expression at work. Ultimately the combination of head and heart will be a significant advantage. Factors. - Community - Meaning in Work. - inner life How much does the work unit perceive the community.</td>
<td>- human factor Interpersonal. - human factor Institutional.</td>
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<td>Human factors, Relationship levels by dimension: 1-Intimate life - Values (Interpersonal) - Identity (intrapersonal) - Belonging (Institutional)</td>
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<td>2-Purpose: - Meaning (Interpersonal) - Cohesion (intrapersonal) - Consistency. (Institutional)</td>
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<td>3-Community - Connection (Interpersonal) - Climate (intrapersonal) - Environment (Institutional)</td>
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## COMPARATIVE METHODOLOGY TABLE

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<td>Positive values of the unit of work: Values Goals Mission Organization values</td>
<td>Levels: Individual Work unit Organization</td>
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<td><strong>Dimension 2:</strong> Continuous process improvement. It is linked to the organization's processes.</td>
<td><strong>Guidance:</strong> Focus on the process. Adopt scientific thinking. Make it flow and pull the value. Ensure quality at source. Seek perfection. <strong>Support:</strong> Stabilize processes, rely on data, standardize processes, insist on direct observation, focus on the value stream, keep it simple and visual, identify and eliminate waste, integrate improvement with work.</td>
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<td><strong>Dimension 3:</strong> Business alignment, is linked to the strategic alignment of the company as a whole.</td>
<td><strong>Guidance:</strong> Create constancy of purpose. Think systematically. <strong>Support:</strong> See reality.</td>
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### COMPARATIVE METHODOLOGY TABLE

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<td><strong>Dimension 4:</strong> Results. It is linked to results and relationships with customers.</td>
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<td><strong>Guidance:</strong></td>
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<td>Create value for the customer.</td>
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<td><strong>Support:</strong></td>
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<td></td>
<td>Measure what matters, align behavior with performance, identify cause and effect relationships</td>
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<td>focus on the long term, align systems, Align strategies.</td>
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4 DATA ANALYSIS

From the literature review, it was possible to identify that the sample involved the selection of articles in the period from 2015 to 2021, where a greater number of articles in the period from 2019 to 2021 can be observed in the Annual Scientific Production graph (figure 4), where there was a greater volume of publications on the subject of the article. The figure 4 also shows the main journals involved and the countries that most contributed.

Figure 4

*Production Scientific by Year, Journal and Country*
5 DISCUSSION OF THE RESULTS

Through the comparative table of the analyzed methodologies, it can be observed that the most prominent points of convergence are aligned with Dimension 1 of the Shingo model, which are the Cultural Facilitators, as they are linked to the people of the organization.

Where the main points are: respect for each individual, leading with humility, cultivating long-term relationships, developing people, delegating and involving everyone in order to guarantee a safe environment, keep people motivated and have a workplace that brings a purpose in life.

6 CONCLUSION

The managerial implications of this work derive from the possibility of a potential improvement in the efficiency of the Shingo Prize effective management model, by incorporating aspects of the EAT that were not originally included in the original version of the effective management model. This improvement could contribute to demonstrating the company's concern with the social aspects of the organizational environment, which eventually can generate an improvement in the quality of life of its employees and an increase in sustainable productivity.

The academic implications of the work are related to the addition of theoretical knowledge about effective management, through a dialogue with the theory of spirituality in the work environment, bringing a discussion that, according to the literature review carried out in this article, is still little explored academically. An important social contribution of this research is the rescue of the importance of the individual and his well-being, within the organizational context, associating it with a potential improvement of effective management based on the Japanese Shingo model.
A limitation of this research refers to the adoption of only the proposed dimensions to characterize an EAT, based on the Shing Prize Model of Effective Management versus the EAT Model by Ashmos and Duchon (2000) versus Bella et al. (2018). Future studies could extend comparisons with other EAT models, in order to identify more elements to be incorporated in the Shingo model. Although the world is in constant change and the evolution of technology has been dictating the rules of the game in the corporate world and society as a whole, the article portrays a subject that is a key point for improving productivity and developing an individual's social conscience, so necessary for the sustainability of the planet.

Future studies could also apply the proposed model in the field, using the case study method or quantitative research, verifying its practical applicability of the proposed improvement to the Shingo Prize model of effective management or if there is a need to make adjustments for a better representation of organizational realities.

One of the authors of this article had the opportunity to work for 38 years in the shipbuilding and off-shore industries in large projects in Brazil and in other countries and to live with several types of management, among others, it highlights the Japanese, American, Italian, Spanish, Romanian and Brazilian. Among these, it places a special emphasis on Japanese management, in terms of reaching the heart and mind of the work in terms of commitment.

REFERENCES


