Catchball and Total Quality Management

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Abstract: The paper refers to the Japanese method, Hoshin Kanri, which uses a simple communication practice called Catchball to mobilize all the forces in an organization, from top to bottom and bottom up, to plan the organization's activities. Here are the definitions, principles and steps through which Hoshin Kanri has the potential to contribute to the continuous improvement of quality management, organization performance through communication, participation, collaboration and engagement.

Keywords: Hoshin Kanri, catchball, planning, management, TQM

Introduction
Developing Hoshin Kanri's quality strategy to implement the company's vision and strategic goals has meant better communication and engagement at all levels. Consensus is needed by better training of all staff. Applying the Catchball method to Hoshin Kanri offers an opportunity to continuously improve performance by disseminating and delivering vision, direction, goals, and management plans from top management to all employees so that people at all levels of work can continue to act on the plans and evaluate the results. It is the feedback as part of a process of continuous improvement of the results, quality and satisfaction of all stakeholders. In other words, there is a change in organization management, quality management and planning.

According to Kelada [4], Quality Management is "a set of activities aimed at achieving goals, through optimal use of resources." This includes planning, coordination, organization, control and quality assurance [6, 101], the consensus of which can be achieved through communication, collaboration, coordination and the proper use of knowledge and resources.

According to ISO 9000: 2015, Quality Management represents the overall management function, which determines quality policy, objectives and responsibilities, and implements them within the quality system by means such as planning, control, quality assurance and improvement.

Quality Management = coordinated activities to guide and control an organization in terms of quality.
Quality Planning = Quality management part / function focused on setting quality objectives and specifying the operational processes and associated resources needed to meet the quality objectives.

Quality management is therefore the responsibility of all levels of management, but the role of coordination lies with the top management of the organization. Implementation of quality management is done with the participation of all members of the organization. In French, the method is known as "quality deployment" (DQ), and in English, "Quality Function Deployment" (QFD) and used in quality planning in the Initiator of the Method is Yoji Akao and was first applied by Mitsubishi (1972), and then Toyota (1977), after which it became generalized in the Japanese economy. After 1985 it is also taken over by American and European companies. The feature of the method is that compliance with the quality requirements is pursued at each stage of the manufacturing process of the product. Customers' requirements are embodied in specifications that will be tailored to each stage of the process, thus ensuring the conditions for achieving a product that gives total customer satisfaction. The Hoshin Kanri method is a variation of QFD.
Cross-functional management (MFM) is required for the successful implementation of Hoshin Kanri planning along with the Catchball method [8, 418]. The CFM requires a significant change in the structure of management relationships to allow continuous verification of objectives and means across the entire implementation cycle.

1. Hoshin Kanri
The method known as Hoshin Kanri has proven to be an effective strategy in planning processes in Japanese companies where it has been extensively applied to integrate the Quality Management Strategy (TQM).

Hoshin Kanri was described by Akao (1991) as a systematic approach that integrates the entire organization for daily activities with its strategic objectives. Hoshin Kanri's application is linked to a "catchball" process that is based on employee involvement in the implementation strategy. It is an annual strategic management activity, often difficult to achieve in Western companies. [10, 287] The same authors Hoshin Kanri is particularly difficult to implement. The catchball process is used to amplify / gain the consensus of Hoshin for planning on the basis of the objectives and measures proposed to the team in a copper known as "Cross-functional management".

Figure no. 1 [10, 289] shows the Hoshin planning system model, which can be compared to Deming's "Plan-Do-Check-Act" (PDCA) continuous improvement cycle.

The main elements of the model refer to [8, 417]:
- Five-year vision - belongs to the president and executive group (review of internal and external obstacles, contribution of all managers);
- One-year plan (based on the performance of the previous year);
- Development at departmental level (key implementation elements);
- Detailed implementation (emergency planning - self-diagnosis, self-correction and visual presentation of the action);
- Monthly diagnosis (focus on process, rather than target);
- The president's annual diagnosis (numerical objectives, but also the process underlying the results).

The President's audit focuses on quantitative targets, providing information in summary and detail.
A prerequisite for applying the Hoshin method is the existence of a series of premises at the organization level including: leadership, teamwork, self-evaluation, and continuous improvement. The organization tends to generate a culture of managerial control focused on the individual and problem solving, rather than a culture of teamwork and continuous improvement. Hoshin's planning tends to focus on self-evaluation with individual participation and flexibility. \([8, 419]\)

Figure no. 2 illustrates the FAIR (Focus, Alignment, Integration, and Reactivity) model for applying the Hoshin Kanri method to the Deming cycle - PDCA (Plan, Do, Check, Act).

![Figure no. 2 FAIR model \[10, 291]\]

2. Catchball

Catchball is a process of exchanging ideas and comments around interactive planning actions. In Japan, it is an essential element in planning that requires continuous communication to ensure the development of appropriate goals and means, and their implementation at all levels of the organization. Catchball is a term derived from a game of children in a circle and throwing the ball from one to the other.

Catchball is one of the fundamental elements of Hoshin Kanri's approach \([2][10]\). In French it translates into "ballerina" with reference to communication and the exchange of ideas between different levels of an organization. The English authors propose to improve Catchball's terminology with the phrase "collaborative goal-setting," a collaborative method for setting goals. Catchball is the process used to build consensus through dialogue on goals and means of achieving change. This process is based on data and uses tools to manage the facts. Catchball links project visions, annual strategic planning changes with medium and long-term plans implemented before the start of the fiscal year (Table no. 1). \([1]\)

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<tr>
<th>Phase</th>
<th>Action</th>
<th>Method</th>
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<td>1</td>
<td>Establish Organizational Vision</td>
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<td>Pre-planning analysis</td>
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<td>Development of mission, vision and value statements</td>
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<td>Strategic Planning</td>
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<td>2</td>
<td>Development of medium- and long term plans and goals</td>
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<td>3</td>
<td>Development of annual plans</td>
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In the model of the six elements proposed in Figure no. 3 by Tennant & Roberts, (2001), Catch-ball is also found. Using catch-ball is necessary to help navigate the subordinate targets cascade.

In the Value Stream Management for Lean Office book, Tapping & Shuker [9] thus describes Catch-ball: "Catchball is simple. No matter who initiates a project (although most often a manager), that person articulates purpose, goals, and other ideas using feedback, support and action. A loophole of two-way ideas is created. It's like playing ball, it's clear about who's responsible for the next action."

Catchball is a communication process in which the parties engage in a series of exchanges of information and ideas about the means to achieve a particular goal. The purpose of the exchange is to build consensus on the best approach to achieving that goal. Catchball is based on the belief that the best approach will evolve from the exchange of information back and forth between the person who is responsible for reaching the goal and the people who will be most influential in reaching it.

The method is based on the participation of the entire organization. Process implementation through Catchball is the soul of the Hoshin Kanri method. Top-down and bottom-up communication aims to coordinate goals at the lowest levels of the organization and beyond the functional departments. Being an interactive process going back and forth, it empowers not only managers but also subordinates to analyze all ideas to help achieve / solve organizational problems, thus improving the level of understanding combined with the level of commitment to achieve organizational performance. (Figure no. 4) [5]

This communication process can help change an authoritative management style with a collaborative one called catchball. Catchball constantly creates a dialogue between managers and workers. The elements that differentiate the Hoshin method from other traditional methods of strategic planning are tools (working, dialogue, management) and Catchball communication. We can also speak of a better understanding and efficiency to help an organization move towards a global vision in a number of
specific action elements. The catchball process ensures efficiency on both sides, contributing to a better understanding, development and application of strategies. Often, a plan is difficult to execute because: a) top managers are far from operational execution realities, or b) employees under the executive level do not understand the methods behind the management plan. The catchball process avoids both potential barriers involving multiple people in developing a strategic plan.

The team of top managers will develop the plan only at a certain level of detail, then make a communication session with the next level of management to agree on high-level priorities. This highly interactive session will provide the opportunity to provide feedback, to ask questions, challenges / proposals to specific items, etc. The next step is for the mid-level where high-level initiatives are being taken and the execution details are established. Upon completion the details are presented back to the executives, who also have the freedom to provide feedback, questions and challenges. This exchange of ideas (go up and down) is the cornerstone of the catchball process.

3. **Catchball = 5C**

Using a synthesis of the use of the Catchball method, we found that five conditions must be met: Knowledge, Communication, Coordination, Collaboration, and Consensus.

The catchball process is all about clear and open communication. This communication will bring the true meaning of the organization's goals at all levels.

The primary objective of the Catchball process is that each employee can offer a lot of confidence as a team member, "I know how my everyday actions contribute to achieving the goals in my organization."

Collaboration, within the participatory approach to decision-making in which information and ideas are "discarded" and "caught" back and forth, up and down across the organization, opens the way to achieving the expected results.

The advantages of using this method can be for both management and employees.
- encouraging creativity,
- sifting ideas,
- continuous improvement of quality culture,
- promoting dialogue.

The benefits of Hoshin Kanri as a tool of Strategic Quality Management, compared to conventional planning systems, are based on the integration of strategic objectives with daily tactical management, the application of PDCA business processes management, planning methodology, improved communication, increased consensus and participation to set goals and the integration of inter-functional management. "[8, 419] Some disadvantages can be: resistance to change, resistance to the new approach to quality management, lack of experience of personnel.

The catchball process may be formal or informal. In some cases, it could only be a few discussion sessions. In others, there may be a series of formal meetings. In any case, catchball is based on open communication and collaboration of all parties involved, in order to ensure the effective and efficient development of the organization's strategic guidelines (Chiarini 2016, Tennant & Roberts, 2001, Jackson, 2006). Even the name of the method describes a participatory process that is used in question-based planning, clarifying priorities, building consensus, and ensuring that strategies, objectives and measures are well understood, realistic and sufficient to achieve the goals.

**Conclusions**

Researchers in general and practitioners, in particular, found that Quality Management is aware of Quality Assurance, Total Quality Management (TQM), Integration (Integrated Quality Management) are addressed in Catchball-Hoshin Kari and in terms of empowerment, and knowledge management,
quality management, quality education, pursuing continuous improvement of quality, performance and efficiency of long-term activities, customer satisfaction and exceeding their expectations.

Catchball also means engagement / involvement at all levels to achieve the organization's goals. It is an efficient implementation / planning technique and must bring "added value". TQM targets all the quality improvement measures used by a company, including quality design and development, control, management, continuous improvement and quality assurance. In other words, "TQM considers all quality measures at all levels and compartments involving all employees in order to obtain long-term benefits" [3, 937].

The example of Japan that has defeated the "Japanese miracle of quality" is recognized today by all qualities, managers and specialists around the world. Evidence is the numerous complex comparative analyses of quality management from which Japanese management is not lacking. Most American, European, Asian schools have the Japanese quality management model [7, 49].

References

Supplementary recommended readings