Journal of Business and Economics, ISSN 2155-7950, USA
December 2016, Volume 7, No. 12, pp. 2005-2014
DOI: 10.15341/jbe(2155-7950)/12.07.2016/007

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A Guide to Business Management Diagnosis Applied to a Logistic Warehouse

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Abstract: The aim of this research is to prove the applicability of a diagnostic tool which may be used as a guide for the design, assessment and monitoring of business management in any organization. The innovation of the proposed model resides in the merger of three disciplines: strategic management, marketing and total quality management. Each discipline has a different approach when planning its objectives, but all of them converge in this integrated model. By applying this guide to a logistic warehouse, the applicability of this integrated model is proved as it prioritizes the necessary performance in a systematic way while taking into account the strategic vision, the constant value exploration and the continuous improvement.

Key words: EFQM; BSC; holistic marketing; adaptation
JEL code: M0

1. Introduction

The strategic management models, such as the Balanced Scored Card (BSC), focus on analyzing the key performance indicators and discovering which objectives, aligned with the mission and vision of the company, lead to the best financial results.

The Holistic Market (HM) focuses on the need to explore, create and deliver value to three agents: the customer, the core competencies in the company and the collaborative networks.

The European Framework for Quality Management (EFQM) is based on the continuous improvement by way of the self-assessment of eight fundamental concepts: sustaining outstanding results, adding value for customers, leading with vision, inspiration and integrity, managing with agility, succeeding through the talent of people, harnessing creativity and innovation, developing organizational capability and creating a sustainable future.

The methodology used in integrating the three models is based on the Quality Function Deployment (QFD). The integrated model, thanks to the QFD, will provide a guide to business management as it contributes to prioritise the needs and performance.

In general terms, the steps carried out to develop this guide may be summarized in the following stages:

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- Discovering the needs of the company through the exploration, creation and delivery of value in the holistic marketing.
- Obtaining the main performance objectives by means of applying the House of Quality, as well as using the sub-criteria of the EFQM to satisfy the above-named needs.
- Establishing the cause-effect relationship between the different objectives to meet the mission of the organization. Designing a performance strategic map for each of the BSC platforms.

2. A Brief Survey of Literature

The starting point of this line of investigation is the doctoral thesis of Jesús Pastor, who managed to capture the relationship between the BSC and EFQM perspectives with an example of use and resulted in the publication Pastor J. (2008).

Based on this illustrative model, the recent publication of A. C. Pastor et al. (2014), adds the implementation of the Holistic Marketing to the initial approach.

In addition, there are some publications which have proposed the implementation of the BSC and EFQM models such as S. Dror (2008), or the implementation of the QFD and BSC models such as Y. L. Li et al. (2011), but none of them includes the Holistic Marketing. This fact has led to the achievement of this objective, detailed in the following pages.

As background of the implementation of different strategic frameworks, we can mention the work of Yan-Lai Li et al. (2011) where the Quality Function Deployment (QFD) translates customer needs into Engineering Characteristics (EC) and then, the level of priority of these needs is determined with the Balanced Scorecard and the method of analytic hierarchy process (AHP).

3. Data and Methodology

The House of Quality model used in the study has been renamed as “House of Excellence”. As explained below, this is due to the fact that the methodology seeks to achieve business excellence, and systematizes the process of selection of HOWs using the EFQM Excellence Model criteria.

House of Excellence

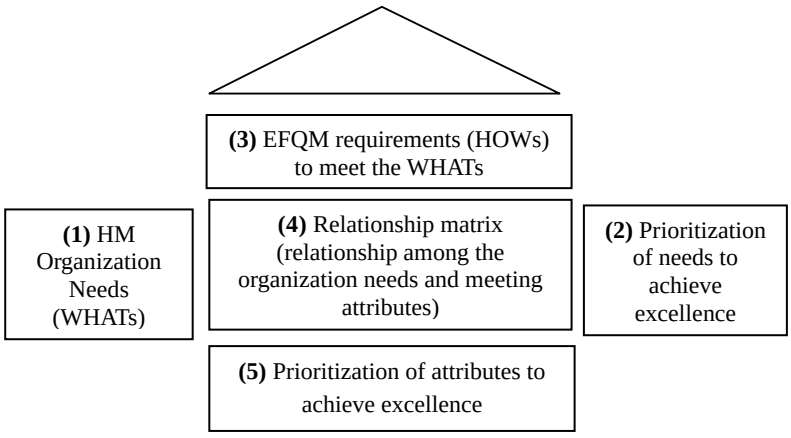

Figure 1 Model of Use of the Study Using the House of Quality

Source: Authors

This differs from the habitual House of Quality because the needs used in the study will not be the customer needs but the organization needs, as shown in Figure 1. These weaknesses (WHATs) will be drawn from the previous analysis performed through the evaluation of the 9 value streams of the Holistic Marketing. Its satisfaction is achieved through the 32 sub-criteria of the EFQM Excellence Model (HOWs).

The application procedure is shown schematically in Figure 2. The methodology is divided in 9 steps explained in a qualitative and quantitative way.

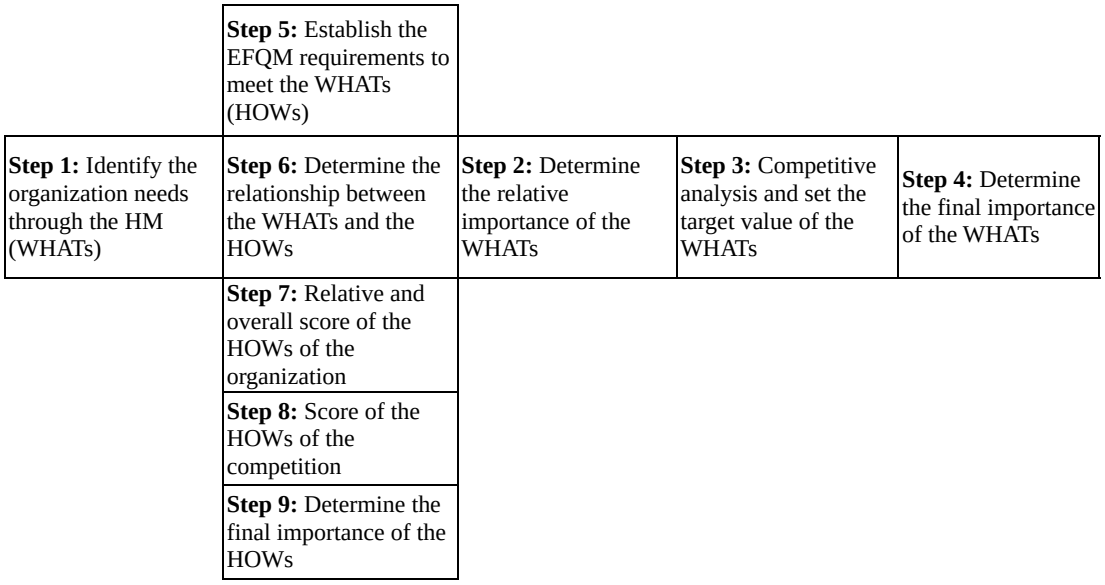

Figure 2 Methodology of Application of the QFD

Source: Authors

Step 1: Identify the organization needs through the HM (WHATs)

It is fundamental that the company has knowledge or reliable sources to obtain the needs of the customers, the business and the collaboration network. It is necessary to give detailed consideration to this point.

The needs obtained for each of the nine value streams of the Holistic Marketing are shown in Figure 3.

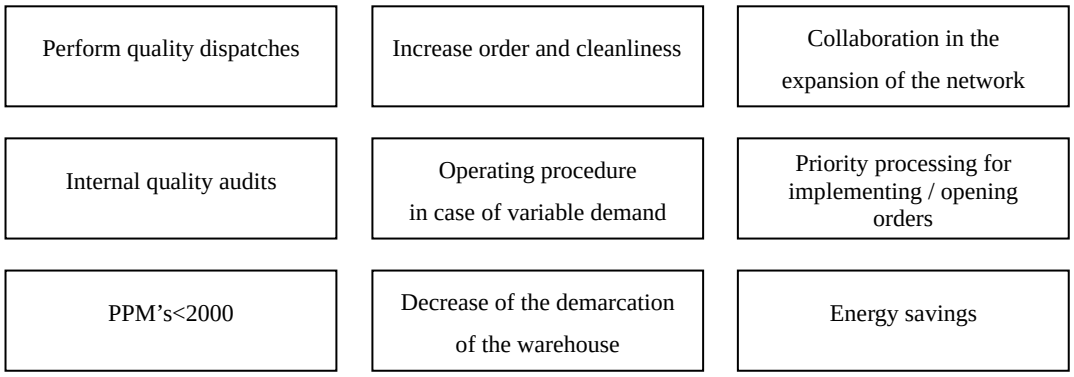

Figure 3 Needs Based on the HM Value Streams

Source: Authors

Step 2: Determination of the relative importance of the organization needs (WHATs):

In this step, the importance given to each requirement for the suitable management of the company is

assessed, giving a score from 1 (not important) to 5 (very important) as shown in Table 1.

It is important to obtain this information based on experts in the field or hierarchical analytical process.

Table 1 Evaluation of the Competitive Analysis and Importance of Each QFD Requirement (WHATs)

WHATs	Degree of importance	Competitive analysis		Planning		
		Practical case	Competition	Goal	Degree of improvement	Strategic importance
Perform quality dispatches	5	3	5	5	1.7	1.5
Internal quality audits	3	4	4	4	1.0	1.2
PPM < 2000	3	3	4	4	1.3	1.5
Increase order and cleanliness	3	4	4	4	1.0	1.2
Operating procedure in case of variable demand	5	3	5	5	1.7	1.5
Decrease of the demarcation of the warehouse	4	3	4	4	1.3	1.2
Collaboration in the expansion of the network	5	4	4	5	1.3	1.5
Priority processing for implementing/opening orders	4	4	4	5	1.3	1.5
Energy savings	4	4	5	4	1.0	1.2

Source: Authors

Step 3. Competitive analysis and goal planning:

This step evaluates where the company stands in relation to its competition and based on this study, it sets the goals to reach.

Since the case of study is a company well positioned among the leaders of its sector, as it enhances its management strategies and leadership obtaining good results, the study proposes to compare the organization with the best ones and try to progress to reach them. This is the reason why the organization has been compared with the best companies within the network of distribution centres. Ikea, Inditex and Mercadona.

At the time of setting the goal, this is evaluated according to the degree of importance of the requirement and where it stands regarding the competition. In other words, if a specification has an unrepresentative value but the company stands above the competition, resources may be invested in something that is not creating value. That is different than those aspects which the company gives value to, where it shall be more demanding.

On this basis, the goal has been set by calculating the expected degree of improvement to achieve excellence, as shown in Table 1.

The strategic importance shows the difficulty to achieve this goal. Based on the following qualifications:

1 no strategic importance

1.2 some strategic importance

1.5 major strategic importance

Step 4. Determining the final importance of the organization needs (WHATs):

The final importance is evaluated through two indicators. The first represents the absolute value of each property. The other indicator, relative value, indicates what is important for both the customer and the business strategy and the situation regarding the competition. To obtain it, the equations shown in the following lines are used and the results are shown in Table 2.

$$Degree\ of\ improvement\ _i = \frac{Objective_i}{Analysis\ company_i}$$

$$Absolute\ Weighting\ _i = Degree\ of\ importancei\ * Degree\ of\ improvement_i\ ** Strategic\ Importance_i$$

$$Relative\ weighting_i = \frac{Absolute\ Weightingi * 100}{\sum_{i=1}^{n} Absolute\ Weightingi}$$

$$i = 1 \ldots n \quad siendo\ n\ el\ número\ de\ necesidades\ (WHATs)$$

Table 2 Results of the Weighting of the "WHATs"

WHATs	Weighting	
	Absolute	Relative (%)
N1: Perform quality dispatches	12.5	18.86
N2: Internal quality audits	3.6	5.43
N3: PPM < 2000	6	9.05
N4: Increase order and cleanliness	3.6	5.43
N5: Operating procedure in case of variable demand	12.5	18.86
N6: Decrease of the demarcation of the warehouse	6.4	9.66
N7: Collaboration in the expansion of the network	9.375	14.15
N8: Priority processing for implementing / opening orders	7.5	11,32
N9: Energy savings	4.8	7.24

Source: Authors

Step 5. Establishing the EFQM requirements (HOWs) to meet the needs (WHAT):

The attributes which have been used to meet the organization requirements have been 32 sub-criteria comprised in the EFQM Excellence Model. The purpose of this is to analyze if there is a relationship among the different models and whether this relationship can be quantified.

Step 6. Determine the relationship between the WHATs and the HOWs (Relationship Matrix)

Table 3 Relationship Matrix Which Represents the Correlation among the WHATs and the HOWs

WHATs	Leadership					Strategy				People					Partnerships & Resources					Processes, Products & Services					Results						
	1a	1b	1c	1d	1e	2a	2b	2c	2d	3a	3b	3c	3d	3e	4a	4b	4c	4d	4e	5a	5b	5c	5d	5e	6a	6b	7a	7b	8a	8b	9a
N1	3	3	3	3	3	2	3	2	3	3	2	3	2	1	0	0	0	0	2	2	3	3	2	3	3	0	0	0	0	0	0
N2	2	0	0	3	2	0	3	3	3	3	3	3	2	2	0	0	0	0	0	0	3	0	3	2	2	0	0	0	0	0	0
N3	3	3	2	3	3	2	3	2	0	2	3	3	0	0	0	0	0	0	0	0	3	2	2	0	3	0	0	0	0	0	0
N4	0	0	0	0	0	0	0	0	0	3	2	3	3	1	0	0	3	0	0	0	3	3	3	2	0	0	3	0	0	0	0
N5	0	2	0	0	0	3	0	0	0	3	2	0	0	0	0	0	3	0	2	0	3	3	2	0	2	0	0	0	2	0	2
N6	0	2	0	0	0	0	2	0	0	2	3	3	2	0	0	0	0	0	0	2	3	2	3	0	0	0	0	0	3	0	2
N7	0	2	0	0	2	3	3	2	0	0	3	2	0	0	0	2	3	2	0	3	3	3	2	0	0	0	0	0	0	3	3
N8	0	3	3	2	2	3	0	0	0	0	2	0	0	0	0	0	0	0	2	3	3	3	2	3	0	0	0	0	0	3	3
N9	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	3	0	0	2	3	0	0	0	0	0	0	0	0	0	3

Source: Authors

In this step, the influence of the WHATs in obtaining the HOWs is evaluated. Based on the work methodology of the company as explained in the document, this relationship is evaluated by a correlation scale from zero to three. The results are detailed in Table 3.

0: No relationship

1: Low relationship

2: Medium relationship

3: High relationship

Step 7 and 8. Score of the HOWs of the Company and the competition:

As in step 3, the allocation of the EFQM sub-criteria has been justified on the basis of the information obtained through press releases or own bulletins provided by different organizations. Due to the confidentiality, this information is difficult to obtain but it has been estimated using the information available to the author. The result is shown at the end of this section in Table 4.

Step 9. Determine the final importance of the HOWs:

Through the methodology developed in the following formulas, both global and relative weights for every EFQM sub-criterion have been obtained. The results of these calculations are obtained from the equations listed below and they are shown in Table 7.

$$Weighting\ overall\ _j = \sum_{i=1}^{n} r_{ij} * Weighting\ relative_i$$

$$Weighting\ relative_j = \frac{Weighting\ overall\ _j * 100}{\sum_{j=1}^{m} Weighting\ overall\ _j}$$

$$R = \begin{pmatrix} r_{11} & \cdots & r_{1m} \\ \vdots & \ddots & \vdots \\ r_{n1} & \cdots & r_{nm} \end{pmatrix}$$

j = 1 ... m where m is the number of attributes (HOWs)

rij coefficients of the matrix of relationships

Table 4 Results of the weighting of the WHATs

WHATs	Leadership					Strategy				People					Partnerships & Resources					Processes, Products & Services					Results						
	1a	1b	1c	1d	1e	2a	2b	2c	2d	3a	3b	3c	3d	3e	4a	4b	4c	4d	4e	5a	5b	5c	5d	5e	6a	6b	7a	7b	8a	8b	9a
Practical case	5	5	3	4	4	4	3	4	4	3	4	4	5	3	4	5	3	4	4	4	5	4	3	4	4	5	4	4	4	4	5
Competition	5	5	4	4	4	4	5	5	4	4	4	5	5	5	4	5	4	5	5	4	5	5	4	4	5	5	4	4	4	5	5
Goal	5	5	4	4	4	4	4	4	5	4	4	4	5	4	4	4	4	4	4	4	5	4	4	4	4	5	4	4	4	4	5
Global Weighting	95	203	109	137	146	203	162	100	73	183	224	174	84	35	0	28	137	28	98	148	300	243	206	112	132	0	16	0	67	76	155
Relative Weighting (%)	3	6	3	4	4	6	4	3	2	5	6	5	2	1	0	1	4	1	3	4	8	7	6	3	4	0	0	0	2	2	4

Source: Authors

4. Analysis & Findings

The purpose of this study is to verify through a practical case the hypothesis formulated in A. C. Pastor (2014), where a relationship among the EFQM, BSC and HM is established theoretically. Each of the three models can be comparable throughout the value chain of any organization based on its enablers and results, as shown in Figure 4.

As shown in the diagrams of each model, there are 3 global perspectives. The first represents all those parts of the company aiming at the exploration of their needs, knowing what the company needs and which strategies and resources are necessary. The second includes those actions needed to perform the previous perspective in order to meet results. The third is the value delivery.

For this, the first thing to do is an analysis of the relationship between the EFQM and HM based on the results obtained through the House of Excellence. There is a strong relationship in the diagonal of this matrix, as shown in Table 5. This proves that there is a direct relationship between the EFQM and HM components throughout the value chain of these models.

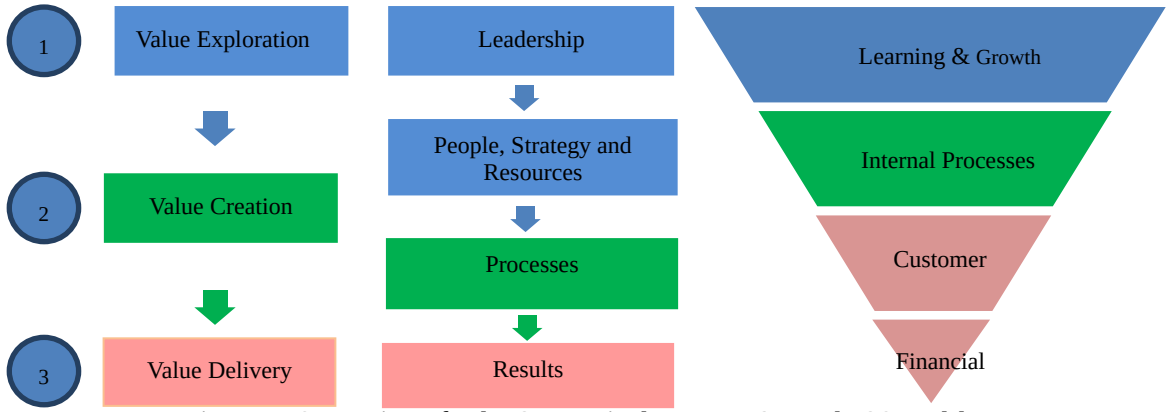

Figure 4 Comparison of Value Streams in the HM, EFQM and BSC Models

(Source: Authors)

Table 5 Relationship between the EFQM and HM Models

	Leadership (%)	Strategy (%)	People (%)	Partnerships & Resources (%)	Processes, Products & Services (%)	Results (%)	Weight (%)
Explores	**11.54**	**8.33**	**10.26**	0.64	8.97	2.56	42.31
Creates	1.28	1.60	**8.65**	**2.56**	**9.29**	**4.49**	27.88
Delivers							*29.81*
Weight (%)	17.9	14.1	21.2	7.1	27.9	11.9	100

Source: Authors

The next step is allocating the 9 needs in relation to the four BSC perspectives to obtain the percentage which each component represents based on this model criteria. We can see the result in Table 6.

Table 6 Reassignment of Needs among the BSC Perspectives

WHATs	assignment with BSC	Weight (%)
Perform quality dispatches	Customer	18.9
Internal Quality Audits	Learning & Growth	5.4
PPM < 2000	Internal Processes	9.1
Increase the order and cleanliness	Internal Processes	5.4
Operating procedure for variable demand	Learning & Growth	18.9
Decrease of the demarcation of the warehouse	Internal Processes	9.7
Collaboration in the expansion of the network	Learning & Growth	14.1
Priority processing of implementation/opening orders	Customer	11.3
Energy savings	Financial	7.2

Source: Authors

In this last step, the contribution of each model to each perspective can be analyzed through Table 7.

In view of the results, the first thing that stands out is the high percentage that represents value exploration in

the 3 models. This weighting, distributed throughout the value chain, is linked to the current situation of the company.

Table 7 Percentage Allocation of Each Component Based on the HM, EFQM and BSC Models

HM	Weight (%)	**EFQM**	Weight (%)	**BSC**	Weight (%)
Explores	42.31	Leadership	60.2	Learning & Growth	38.4
		People			
		Strategy			
		Partnerships & Resources			
Creates	27.88	Processes, Products &	27.9	Internal Processes	24.1
Delivers	29.81	Results	12.9	Customers & Financial	37.4

Source: Authors

In this case, the results obtained show a high contribution to the exploration component, unlike the *distribution* component which obtains a low weight. This analysis is consistent with the situation studied for two reasons. First, the work philosophy of the Company subject to study is characterized by the constant pursuit of continuous improvement, investing persistent effort by exploring their new needs. Second, the needs considered in the practical case when applying the QFD are the weaknesses of the company, those in which the company should invest its resources to achieve results. Therefore, it is logical to obtain a low weight in the contribution represented *by value distribution.*

Regarding the EFQM model, an excessive percentage is observed in the *value exploration* in relation to the HM. This variation is due to the fact that, in the practical case, a high percentage related to *People, Strategy* and *Resources* affects value creation, as shown in Table 5. This makes an increase in *Processes, Products & Services* and a decrease in *Leadership*, *People* and *Resources*.

The variation detected in the BSC model is due to the fact that unlike the hypothesis stated by J. Pastor (2008), the *Vision* is not considered a fifth component and it makes *Learning & Growth* to result higher. In addition, it is observed that the *Customers* component has a close relationship with *Internal Processes*. Therefore, the weight of this component is increased and the weight of *Customer* is lowered, as shown in Table 6.

5. Conclusions

The aim of this study is the creation of a business guide to systematize a diagnostic and performance methodology for any organization.

The main incentive of this study has been the addition of the Holistic Marketing in an integrated model (EFQM & BSC) using the House of Quality to obtain the performance needs and prioritizing them based on the EFQM Excellence criteria. The methodology used is outlined in the following diagram.

The developed work has managed to successfully deploy all necessary steps to develop this didactic tool which serves as a model of business management through a practical application. This is a final model that encompasses the various contributions of each model: the HM, EFQM, QFD and BSC. The main difficulty has been addressing the subjectivity of analysis at times. However, the work has sought to justify each hypothesis in order to give greater consistency to the study.

Notably, in the light of the results obtained, there is evidence that the 3 models of management (BSC, EFQM and HM) show a direct similarity, confirming the hypothesis.

As a general conclusion, there are several ways of dealing with business management and this is an approach to it. The approach has been successfully tested in a practical case. Although the Holistic Marketing help systematize the business needs in a simple and comprehensive way, this is not the only approach.

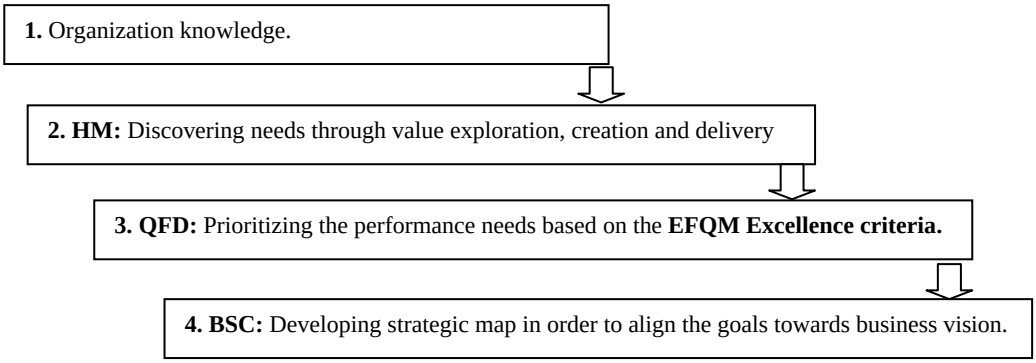

Figure 10 Methodology Used

Source: Authors

Acknowledgements

This article was supported by Department of Industry and Innovation from Government of Aragon and European Social Fund.

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