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Process benchmarking in the fruit and vegetable supply chain

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Abstract— The purpose of this paper is to present the results of an international process benchmarking and to compile models of best practice business processes. The results of our international process benchmarking study allowed us to develop a framework, comprising three models, for better meeting customers' needs. The first model presents how to understand and meet customers' needs generally. The second model comprises those operations, work practices and business processes, which are essential in meeting customers' needs. The third model (organisation designing model) helps the company to check, whether or not the operations, work practises and business processes of the second model can be found in and applied to the company.

Keywords— process benchmarking; customers' needs; business processes; organisation designing model

I. INTRODUCTION

Benchmarking is one of the most popular tools for enhancing the performance of companies [1]. It can be defined as the "search for industry best practices that lead to superior performance" [2]. It can lead to faster learning and change of a company [3], it can ensure that end-user needs are better met and it assists in identifying the true cause of performance etc. As a consequence, many companies have applied benchmarking for achieving world excellence [1].

Three types of benchmarking can be distinguished, based on the nature of object being benchmarked: 1) process benchmarking, 2) product/service benchmarking and 3) strategic benchmarking. Process benchmarking used to compare operations, work practises and business processes [4]. Process benchmarking is a "vehicle" for achieving a change in areas of weak performance and as a result, process benchmarking is increasingly used by companies [5].

Using this, companies compare their own operations, work practises and business processes to that of other, appropriately selected, comparable companies[1].

There are different ways of identifying these process benchmarking partners [6]. Best-in-class benchmarking refers to benchmarking processes of companies, which engage in activities analogous to yours and are among the best at what they do. Many experts believe that companies are more likely to learn how to improve certain activities by comparing themselves with these best-in-class benchmarking partners [7].

In this context, the purpose of this paper is to present the results of an international process benchmarking and to compile models of best practice business processes.

II. MATERIALS AND METHODS

The above aim is addressed via a four-stage process: 1) What to benchmark, 2) Against whom to benchmark, 3) Planning and implementing benchmark 4) Presenting of results. This four-stage process has been developed adapting the methodologies used by Camp [5].

A. What to benchmark

The focus of process benchmarking is operations, work practises and business processes [4]. If these operations, work practises and business processes work in a reliable manner, they can be considered as organisational capabilities of a company [8]. Following the Resource Based View theory (RBV), these organisational capabilities have the potentials to add real sustainable competitive advantage to companies and allow them to perform better than the competitors; therefore we have chosen operations, work practises and business processes, as organisational capabilities, to benchmark. More specifically, we examined those operations, work practises and business processes, which are responsible for meeting customers' needs.

B. Against whom to benchmark

In best-in-class benchmarking, companies compare their organisational capabilities to other companies, which engage in analogous activities and are among the best at what they do [7]. Our research was carried out in the fresh fruit and vegetable sector. The focus of our research is supply chains that are comprised by producers' organizations (POs). We have chosen a highly successful PO from Hungary (Mórákert Cooperative) and we have compared its organizational capabilities with two POs from Germany (Pfalzmarkt and VOG). The selected benchmarking partners are organizations of successful German integration. The selected Hungarian Cooperative is a PO with the highest yearly turnover in the fresh fruit and vegetable sector in Hungary.

C. Planning and implementing benchmark

For the identification of organisational capabilities (operations, work practises and business processes for meeting customers' needs) it was decided to conduct qualitative explorative research (individual interviews). Managers of all the three POs have been identified and recruited. A list of guiding questions was developed, and then translated to the respective languages of the countries. With the help of these guiding questions managers of the two German POs discussed those operations, work practises and business processes which allow them to meet customers' needs, or in other words, which allow them to perform better than the competitors. Afterwards, the existence of these operations, work practises and business processes for meeting customers' needs was assessed at the Hungarian PO. The individual interviews were audio taped. Materials from both types of interviews were transcribed literally for later analysis.

D. Presenting of results

The results of our international process benchmarking study allowed us to develop a framework, comprising three models, for better meeting customers' needs. The first model presents how to understand and meet customers' needs generally. The second model comprises those operations, work practises and business processes, which are essential in meeting

customers' needs. The third model (organisation designing model) helps the company to check, whether or not the operations, work practises and business processes of the second model can be found in and applied to the company.

III. RESULTS

A. Model 1 of understand and meeting customers' needs

A simplified model for understanding how to meet customers' needs is developed based on the experience of the best-in-class benchmark partner (Figure 1).

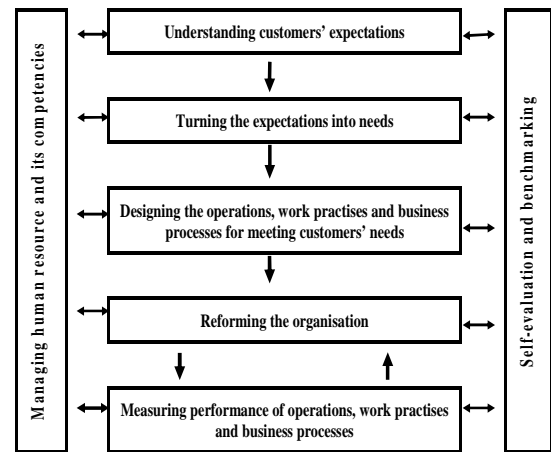


Figure 1. Simplified model for understanding and meeting customers' needs

Following this model, the most important needs of the customers of the investigated POs are the following: 1) proper volume, 2) reliable delivery, all the year, 3) broad assortment, 4) quality product and services, 5) competitive price, 6) finance of products, 7) promotion, 8) food safety.

B. Model 2 of understand and meeting customers' needs

Based on the above identified customer needs, the second model present those operations, work practises and business processes, which are essential in meeting these customers' needs (Table 1). These are aggregated depending on which managerial field they belong to. This deeply detailed model shows the

complexity of meeting the customers' needs. This framework doesn't present a uniformed receipt and each organization can adapt the framework and tailor the level of detail to its own needs.

Table 1: Operations, work practises and business processes for meeting customers' needs

<p>1. Business processes</p> <p><i>Market management</i> Market analysis, Understanding customer needs Planning production requirements Working out market (not main customers) Marketing support Market communication Market follow-up "Markets" for surplus of goods</p> <p><i>Product base planning</i> Quality planning Assortment planning Schedule</p> <p><i>Handling surplus</i> New and substitute product planning Production security Control requirements validation</p> <p><i>Production development, selection</i> Technology planning, Management of researches, measures Extension Quality assurance Production, subcontract</p> <p><i>Supplier management</i> Identification of suppliers, tenders Development of suppliers Procurement Administration of suppliers Organization of exhibits</p> <p><i>Customer management</i> Management of potential customers Customer promotion (visiting specialists) Customer account management Concluding agreements Management of orders</p> <p><i>Logistics and storage management</i> Planning and managing infrastructure and physical assets Planning logistics and distribution Planning storage and empties Operation of logistics and material control Delivery management Managing subcontractors</p>	<p>2. Management of horizontal processes</p> <p>R+D (private and procured knowledge) Information management Co-operation management Quality management</p> <p>3. Support processes</p> <p><i>Business management</i> Development of strategy Business planning Controlling Business development Organizational strategy Business communication</p> <p><i>Management of business processes and operations</i> Coordination and integration Control Development of processes Benchmarking</p> <p><i>Finance management</i> Planning finance, analysis Accounting Finance management Planning and management of taxation Regulation of financial leverages</p> <p><i>Legal services</i> Extension Legal affairs</p> <p><i>Human resource management</i> Human resource planning Staff (and substitute) management Education, training Labour administration Employee communication</p>
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C. Model 3 of understand and meeting customers' needs

Based on the above model, each company can check whether or not the operations, work practises and business processes necessary for meeting customers' needs can be found in and applied to the company. The operations, work practises and business processes (in column) are linked with defined factors of costumers' needs (in row). When these links are clear, for every operation, work practise or business process one host can be assigned. When some operations, work practises or business processes cannot be found or applied to the company (member organization) (when the company itself cannot host that operations, work practises or business processes), then other actors can carry out these operations, work practises or business processes (Table 2), although, that makes the supply chain more expensive. It is possible, that not every operation, work practise or business process can be linked with one host. In that case, this operation, work practise or business process must be developed.

Table 2: Organisation (company) designing model

Processes	Customer needs							
	Volume	Reliable delivery (all year round)	Broad assortment	Quality product	Competitive price	Finance of products	Promotion	Food security
Management field 1.								
Understanding customer needs	I	IM	I	MI	IM	IM	I	M
..... etc.								
Management field 2.								
R+D	O	MI	O	IO	IM	OIM	OI	IMDO
..... etc.								

Legends: M = member company or organization; I = Integrator; O = Outsourcing; D = to be developed

IV. CONCLUSIONS

For the market success, any company has to be aware of its customers' needs. We revealed the most important needs of the customers of the investigated POs that are the following: 1) proper volume, 2) reliable delivery, all the year, 3) broad assortment, 4) quality product and services, 5) competitive price, 6) finance of products, 7) promotion, 8) food safety. Based on those identified customer needs, we developed a model presenting those operations, work practises and business processes, which are essential in meeting these customers' needs. Though, this framework doesn't present a uniformed receipt and each organization can adapt the framework and tailor the level of detail to its own needs. Based on this model, we suggest each company to check whether or not the operations, work practises and business processes necessary for meeting customers' needs can be found in and applied to the company. The operations, work practises and business processes must be linked with one of those defined factors of costumers' needs. At the same time, each process must be assigned to a process host. To identify and develop these links and hosts, we present an organisation designing model.

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