Quality Management Systems as a Support for Value Creation

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Abstract

Purpose: To explore the role of a quality management system (QMS) for the assurance and improvement of value in an inter-organisational business relationship. The study was carried out in the public transportation industry, where service production has been outsourced.

Methodology/approach: In-depth interviews were conducted with 26 participants from two organisations involved in an inter-organisational business relationship. From the interview material we identified what creates value in the inter-organisational business relationship and for the passengers of public transportation. All value drivers were categorised according to the central areas in a QMS.

Findings: The results show that internal processes and management responsibility are central areas where value is destroyed. Since service production has been outsourced, this means that the intended value is never experienced by the passenger.

Research limitations/implications: The value creators and destroyers identified originate from the suppliers’ view and focus on how the different suppliers together create value for public transportation passengers.
**Practical implications:** Managers should acquire knowledge regarding the value they create or destroy and focus on improving the value creation process. The QMS can be used to assure and improve value creation in an inter-organisational business relationship.

**Originality/value:** Our research contributes to shedding light on the difficulties and possibilities in value creation where service production has been outsourced.

**Keywords:** Value creation, Quality Management Systems, Public transportation

**Paper type:** Research paper
INTRODUCTION

Outsourcing service processes and establishing inter-organisational relationships have become an increasingly used business strategy in many industries (Metters and Verma, 2007). Such organisational settings can be challenging to manage, as the more actors that conduct various activities and have different roles and objectives, the higher the complexity within these networks (Normann and Ramirez, 1993). Creating value to customers is a concern to all kinds of businesses. Research shows that value is the primary influence on purchase decisions and the leading indicator of market share, revenue growth, profitability, and competitive advantage (Monroe, 2003). Being able to create value for the customer in a context where the service production process has been outsourced requires a high degree of co-ordination and shared visions between the different actors.

A context where service production has been outsourced is the public transportation industry in Sweden. Each county has a Public Transport Authority (PTA), responsible for public transportation in the region on roads and railway as well as public transport from and to the region. The transports are run by private operators and the business relationship is regulated through a contractual governance agreement. These organisations, the PTA and the operators, jointly create value for their common customers (Enquist, 1999; Enquist et al., 2005). The PTAs do not have a direct, face-to-face, relationship with the users of public transportation, and there is thus a mutual dependence between the PTA and the operators in delivering value-creating services. For a business-to-business relationship like the one described, where the service production has been outsourced, to improve the value creation, i.e. increase the benefits and decrease the sacrifices, knowledge must first be acquired concerning the value they create, or destroy.

The creation of value for stakeholders in business networks can be managed in different ways. One possible strategy is to design and develop a quality management system (QMS), which can be viewed as a management system to direct and control an organisation with regard to quality. A QMS can be designed to include certain principles, additional practices and techniques (Dean and Bowen, 1994). It often follows the substance of Deming’s PDCA cycle (Deming, 1986), and provides support to organisations for the assurance and improvement of quality. Within an organisation, or business network, there are internal processes whose aim is to manage and support the operative processes. To create value in an inter-organisational relationship, a joint quality management system is needed with shared resources to perform the processes and shared routines to measure and improve them.

The aim of this paper is to explore the role of a quality management system for the assurance and improvement of value in an inter-organisational business relationship in the public transportation industry, where service production has been outsourced. The study focuses on an inter-organisational business relationship between a PTA and a private operator. The empirical research is based on 26 in-depth, semi-structured interviews with managers and employees from these two organisations, whose purpose was to identify value drivers, i.e. the attributes that create or destroy value. The research results are analysed with central concepts of a quality management system. The findings show that multiple value destroyers relate to internal processes within this business network, which negatively affect efficiency. Furthermore, several value destroyers could be traced to the concept ‘management responsibility’ within this inter-organisational relationship. These results illustrate that
internal processes and management issues are central areas that destroy value in a context where service production has been outsourced.

THE VALUE CONCEPT

Value has been discussed in a variety of literature streams and has a range of different meanings assigned to it (Gale, 1997). Many scholars define value as a trade-off between benefits and sacrifices perceived by the customer in a supplier’s offering (Zeithaml et al., 1990; Monroe, 2003; Woodruff and Gardial, 1996). The perceived benefits are a set of physical attributes, service attributes and technical support available in relation to the particular use situation, and the perceived sacrifices are sometimes referred to the price but can also be described more broadly (Monroe, 2003). Customer value theory stresses the importance of understanding customer perceptions of value (Woodruff, 1997). However, suppliers also need to understand how they can create and deliver value in business-to-business relationships beyond merely selling products (Ulaga and Eggert, 2006), as value is created, originally owned and offered for sale by a seller, independent of customers’ perception (Holbrook, 1994).

Value as constellations of value creators and destroyers

The relational exchange of value, i.e. value as embedded in the relationship between business partners, and further constellating value drivers, has been investigated by some scholars, see e.g. Anderson et al. (1993), Anderson and Narus (1995; 1999), Lapierre (1997; 2000), Ulaga (2003), Ulaga and Eggert (2006), Vargo and Lusch (2004), Lusch and Vargo (2006), Walter et al. (2003). An investigation of the constellation of value, i.e. benefits and sacrifices, conducted by Lapierre (2000) focused on a business-to-business domain in the service sector and identified 13 value-based drivers of customer-perceived value. The 13 value drivers were divided into three scopes: product, service and relationship. The perceived benefits, which include ten value drivers, refer to the product (alternative solutions, product quality, product customisation), service (responsiveness, flexibility, reliability, technical competence) and relationship (image, trust, solidarity). The perceived sacrifices, which include three value drivers, refer to price, time/effort/energy and conflict issues.

Value creation in business networks

An organisation can create value in three domains: value creation through relationships with suppliers, i.e. in a business-to-business domain, value creation through alliance partnering, and value creation through relationships with customers, i.e. in a business-to-consumer domain (Ulaga and Chacour, 2001). Many industries are establishing inter-organisational relationships through the outsourcing of parts or their total offerings, which forces a rethinking concerning organisational structures and managerial arrangements (Ramirez, 1999). Within these business networks, organisations together produce value through their relationships, partnering and alliances. The value concept represents a view that value is created by various actors using various resources in the market or business network (Ramirez, 1999). This means that values are co-invented, combined and reconciled in an interlinked chain of activities (Porter, 1985). The actors in these networks can be separate or joint economic actors. For this reason, value creation can be studied in joint ventures or separately. The complexity and dynamism of roles and relationships is increasing in joint business systems (Normann and Ramirez, 1993).

QUALITY MANAGEMENT SYSTEM
A Quality Management System (QMS) can be viewed in different ways. ISO defines it as a “management system to direct and control an organisation with regard to quality” (ISO 2000a). Berggren et al. (2001) give a more comprehensive description and view it as a tool to control and improve the quality of the organisation’s products, which includes everything from methods and routines to organisation and responsibility distribution.

The authors of this paper interpret a QMS as a comprehensive practice which supports the assurance and improvement of quality (ISO, 2000b, c). In this interpretation of QMS, commonly recognised principles and techniques described by authors such as Dean and Bowen (1994) are used to customise practices to fit the needs of a particular organisation. It is of further interpretation that every organisation has a general management system whose development can be graded on a scale according to different levels of adoption. In regard to the higher levels, organisations have achieved efficiency and effectiveness through continuous improvement and learning.

The purpose of a QMS is to establish an organisation’s policies and to realise the contents of these policies through short and long term goals (Nilsson, 2000). The substance of a QMS often follows the PDCA cycle (Plan-Do-Check-Act) (also known as the PDSA cycle, Plan-Do-Study-Act). The cycle is a continuous quality improvement model consisting of a logical sequence of four repetitive steps for continuous improvement and learning (Deming, 1986). The main purpose is to start by planning and formulating concrete goals for the organisation. The next step is to put the action plans or programs into action to reach the goals, check that the goals have been obtained and then evaluate and further improve the organisation’s processes (ISO, 2000b, c).

A quality management system can be developed according to a standard, where ISO 9000 is the best known standard (Nilsson, 2000). The ISO 9000 series of quality management systems standards is a widely diffused management technique, i.e. the ISO 9001:2000 standard has been adopted by over 897 000 facilities in 170 countries (ISO, 2006). The standard ISO 9000 consists of specified requirements for a quality management system. All requirements of ISO 9000 are generic and are intended to be applicable to all organisations, regardless of type, size and product provided (ISO, 2000b).

The requirements of ISO 9001:2000 are divided into five areas: Quality management system, Management responsibility, Resource management, Product realisation, and Measurement, analysis and improvement (ISO, 2000b). The model of a process-based quality management system, shown in Figure 1, illustrates the process linkages between the five areas, and shows that customers play a significant role in defining requirements as inputs. Monitoring customer satisfaction requires an evaluation of information relating to customer perception as to whether the organisation has met the customer requirements. The model covers all the requirements of ISO 9001:2000 but does not show processes at a detailed level (ISO, 2000b). The full arrow in the figure symbolises value-adding activities and the broken line stands for information flow.
EMPIRICAL INVESTIGATION

Public transportation in Sweden has undergone a transformation in recent decades to being organised, as regulated by law, with a Public Transportation Authority (PTA) in each county. The PTAs manage the public transport while the services are outsourced and provided by private-owned operators that are contracted through a public procurement process. The PTAs are responsible for public transportation in the region on roads and railway as well as public transport from and to the region. The owners of the PTA are the county council and the municipalities. The owners, the PTA and the operators form a business network with a joint interface towards their common customers. The activities within these networks, which are coordinated by the PTAs, have developed a practice based on contractual governance and management accounting/control (Enquist, 1999; Enquist et al., 2005). This has according to Enquist et al. (2005) led to the operators becoming production-oriented with a focus on cost rationalisation, which has resulted in a reduction in services.

Sample

Data were gathered in in-depth interviews with 26 managers and employees at both a PTA in Sweden and at their largest operator, which runs approximately 71% (in 2008) of the total transports in this county. The participants were both influential decision-makers in this relationship and employees with a business relationship with the PTA/operator. This background was critical to the process of identifying and describing value-creating drivers. At the PTA, there were a total of seven managers and all interviewed. An additional six employees were identified at the PTA as having a relationship with this particular operator. At the operator, six managers and a further seven employees participated in the study.

Interview guide

The interview consisted of three parts. In the first part the interviewee described the research project and the value concept and the respondents were asked about their own backgrounds and their positions in the company. In the second part the respondents were asked to describe
what benefits and sacrifices they perceive in relation to the customers and then in relation to the PTA/operator. The respondents were asked to describe the value drivers and which effect they had. In the third part the participants were asked if they could identify some critical incidents, positive or negative, that had occurred and that influenced the relationship. The notion of incidents traditionally refers to an episode when the customer interacts with the service provider’s contact persons, systems, or physical equipment. In contrast to routine incidents, a critical incident (Bitner, 1990; Flanagan, 1954; Johnston, 1995) or critical phase (Edvardsson and Strandvik, 2000) is when something happens, unusually positive or negative, which deviates from the normal and catches attention (Edvardsson and Olsson, 1992). Critical incidents influence the relationship, e.g. a negative critical incident may result in the termination of a relationship and a positive critical incident may result in a stronger and deeper relationship. They were asked to give a detailed description of the incident: its cause, course and finally what the result of the incident was.

The value drivers were analysed and categorised according to the areas of the QMS standard ISO 9001:2000: Quality Management System, Management responsibility, Resource management and Product realisation, Measurement, analysis and improvement.

RESULTS AND ANALYSIS

By using the ‘critical incidents’ technique (Edvardsson, 2000) and investigating the relationship dynamics between a PTA and their largest operator, areas of improvement were identified in their joint management system and, further, conflicts concerning their individual management systems became apparent. In 2005, the operator in question had financial problems and was forced to cut costs by optimising the traffic. Practically, this meant that each vehicle was heavily used. The spare vehicles that the PTA had paid for through their contractual agreement were never utilised. The production, that is, the quantity in kilometres which each vehicle runs, became the operator’s foremost priority and the service to the customers deteriorated. There were severe problems with traffic delays and customers complained through the local newspaper, to the operator and to the PTA. As the PTA is responsible for the traffic, it was forced to deal with the problematic situation. The PTA made the decision to publicly blame the operator for the traffic delays, which put a strain on the business relationship between the two actors. An additional factor that caused the relationship conditions to become critical was the contractual agreement which was established and became valid in 2004. The requirements in the agreement are formulated in a way that makes it possible for the operator to interpret its contents, e.g. instead of formulating the requirement regarding the cleaning of vehicles more explicitly, “the vehicles must be cleaned inside and out on a daily basis”, it is formulated rather ambiguously, “the vehicles must be clean and intact”. The operator, with its financial difficulties, utilised this vague agreement to its own advantage, which deteriorated the service quality for the customers. These critical incidents, i.e. the operator’s optimising of traffic and interpretation of the contractual agreement to its self-interest, illustrate how value can be destroyed in an outsourced service production context.

From the interviews, value drivers were identified, analysed and sorted with respect to a business to customer perspective and a business-to-business perspective.

The business to customer domain

Altogether 67 value drivers were identified in relation to the business-to-customer domain. The analysis revealed 35 benefits and 32 sacrifices. In relation to the central areas of a quality
management system, Management responsibility revealed seven benefits and 14 sacrifices, Resource management revealed one sacrifice, Product realisation revealed 25 benefits and three sacrifices, and Measurement, analysis and improvement revealed three benefits and 14 sacrifices, see Figure 2.

The analysis shows that several attributes that create value can be traced to ‘Product realisation’, with examples such as ‘vehicle quality’, which the participants perceive as being improved as a result of the latest contractual agreement. ‘Adjustment of traffic’ was also perceived as a driver that creates value, i.e. major restructurings had been carried out in recent years by the PTA to make the traffic agree better with the travelling patterns of today’s users of public transportation.

Regarding the drivers that destroy value in relation to the customers, the analysis shows that the greatest number of value destroyers was related to ‘Management responsibility’. According to the PTA, the relationship between the PTA and the customers can be improved. The PTA perceives it as challenging to manage this business network without having direct face-to-face contact with their consumers. The relationship deficiencies between the PTA and operator affect their common customers, as the operator’s actions and attitudes towards them are influenced by the relationship with the PTA.

Certain prerequisites mentioned by the respondents can also be traced to the area ‘Management responsibility’. These prerequisites are issues that are outside the control of any of the actors’ value creation network but can be viewed as belonging to the system. Examples of such prerequisites are e.g. the latest governance agreement from 2004 that contains a number of deficiencies, such as ‘breaches of agreement’ and ‘indistinct agreement’. Other examples of prerequisites are the ‘public procurement process’ and ‘different regulations’. The ‘physical location of the PTA’s main office also causes a geographical distance to the customers’. Further, the industry suffers from a ‘culture of low price and low quality’ and the ‘level of educational attainment’ is low. These prerequisites influence the possibility to create value for the users of public transportation. Although they are outside the day-to-day activities of the value-creating network, they still belong to ‘Management responsibility’, as it is their obligation to analyse these prerequisites and plan for how to reduce them as they hinder the value creation processes.

In relation to the business-to-customer perspective, the most frequently mentioned value creator is ‘Adjustments of traffic’, which can be derived to ‘Product realisation’, and the most frequently mentioned value destroyer in the same domain is ‘Vehicle quality’ within ‘Measurement, analysis and improvement’. Even though it is the perception of the respondents that the quality of vehicles has been improved since the latest contractual agreement was established in 2004, many still perceive the quality as deficient and in need of further improvement, see Figure 2.
Figure 2 Domain: business-to-customer

Management responsibility

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<td>Trust and Solidarity (6)</td>
<td>Time/effort/energy and conflict (10)</td>
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Resource management

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Product realisation

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Measurement, analysis and improvement

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11th QMOD Conference. Quality Management and Organizational Development
Attaining Sustainability From Organizational Excellence to Sustainable Excellence; 20-22 August; 2008 in Helsingborg; Sweden

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The business-to-business domain

Altogether 204 value drivers in the business-to-business domain were revealed: 41 benefits and 163 sacrifices. The analysis revealed 41 benefits and 163 sacrifices. In relation to the central areas of a quality management system, Quality management system revealed five benefits and 33 sacrifices, Management responsibility revealed 23 benefits and 92 sacrifices, Resource management revealed four benefits and two sacrifices, Product realisation revealed seven benefits and 29 sacrifices, and Measurement, analysis and improvement revealed two benefits and seven sacrifices, see Figure 3.

The analysis identifies that an immense number of value drivers, both creators and destroyers, can be traced to the area ‘Management responsibility’. The value creators mentioned by the respondents within this area are e.g. the ‘relationship between the PTA and operator’, which several perceive as positive. Also, since the two organisations had gotten new CEOs, ‘cultural changes’ took place. Further, a ‘professional attitude’ on the part of both the PTA and operator is perceived as a benefit in this business-to-business relationship. As in relation to the business-to-customer perspective, certain prerequisites can be traced to ‘Management responsibility’ and perceived as value creators. Such prerequisites are the agreement and the perception of the market as well-functioning.

The value destroyers that can be traced to ‘Management responsibility’ are e.g. ‘indistinct responsibility conditions and routines at the PTA and operator’, i.e. the two actors do not hold the correct information as whom to address in certain matters. Also, the ‘relationship’, ‘information’, ‘communication’ and the ‘agreement’ are perceived as deficient. Several of the respondents still perceive the relationship between the PTA and operator as strained after the problems that occurred in 2005, with frequent traffic delays followed by numerous of customer complaints. Further, information and communication between the two business partners can be improved. They rarely meet in person and discuss common business strategies and plans. Instead, the PTA often calls for a meeting to discuss a problem that has already occurred and there is a need to immediately deal with the situation. There is a lack of systematic routines between the PTA and operator in their joint value creation processes for customers. Also, certain prerequisites, such as the agreement deficiencies, e.g. ‘breaches of agreement’, ‘indistinct agreement’ and the ‘lack of knowledge concerning the agreement’, are perceived by several members of this inter-organisational relationship as value destroyers, which can be traced to ‘Management responsibility’.

Individually, the most frequently mentioned value creator in the business-to-business domain is ‘Relationship’, which can be traced to ‘Management responsibility’, and the most frequently mentioned value destroyer is ‘Communication deficiencies between the PTA and operator’ in relation to ‘Product realisation’, see Figure 3.
Figure 3 Domain: business-to-business
CONCLUSIONS AND DISCUSSION

The aim of this paper was to explore the role of a quality management system for the assurance and improvement of value in an inter-organisational business relationship in the public transportation industry. The study focuses on a business relationship between a PTA and a private operator. The aim was further to illuminate the difficulties in creating value in a context in which the service production has been outsourced.

When comparing the results of the analysis of value drivers with the substance of the ISO 9001:2000 standard and the five areas: Quality Management System, Management responsibility, Resource management, Product realisation, Measurement, analysis and improvement, the greatest number of value creators (benefits) are related to ‘Product realisation’ and the most value destroyers (sacrifices) are related to ‘Management responsibility’ and ‘Measurement, analysis and improvement’ within the business-to-customer domain. Further, the most value creators and also the most value destroyers are related to ‘Management responsibility’ within the business-to-business domain. These results show how several value destroyers can be traced to internal processes within this business network, which leads to inefficiency. These conditions in turn influence the operative, customer-oriented processes negatively, making this network ineffective as well.

In reference to the PDCA cycle (Deming, 1986) and the results of this study, it becomes apparent that these business actors individually plan for their activities and perform them. However, the joint routines for evaluating how well they are performing in relation to their customers’ requirements and for acting upon these data in order to improve the processes, both internally and in particular externally, towards their customers, are appreciably lacking. Consequently, the systematic routines, both within the two organisations separately and also in their joint value-adding activities, need to be overseen and improved. New routines, in particular regarding their performance in relation to customers’ requirements, should also be implemented if this network aims to improve the value creation for customers.

The source of this business relationship is the contractual agreement. As the agreement is formulated with a production-oriented approach, lacking the customer-oriented incentives, this causes the business network to be deficient regarding service quality. Also, the requirements in the agreement can be interpreted in an immensely different number of ways, which causes conflicts between the two business actors, as they are driven by different interests, i.e. the operator uses the agreement to its own interests. The two organisations do not view themselves in a value-creating, customer-oriented business network. Instead, they are more like two solitary entities that focus on their own internal activities, i.e. their attention each lies in the management and support processes, giving insignificant consideration to their joint external, operative processes. The information and communication aspects were perceived by both managers and employees at the PTA and operator as deficient. The interviews revealed that the two actors do not meet regularly, they do not share sufficient information and common business strategies and they do not develop value-adding routines for their common customers.
The development of a quality management system is a strategic decision made by an organisation, and the commitment of management and top management is critical to its success. As many perceived value drivers in this study are perceived as sacrifices, and also can be traced to 'Management responsibility’, it should be a priority for the management to understand the stakeholders’ requirements, develop processes that add value for them, obtain results of process performance and effectiveness and continually improve the processes based on objective measurements, thus to develop a QMS that decreases the value destroyers, i.e. identifies, measures, analyses and manages them. Further, as the object of study is an inter-organisational relationship, this requires joint routines in a quality management system in the co-creation of value for customers. For this business network to be successful, both internal efficiency and external effectiveness are a necessity. As the contractual agreement serves as the basis for this business relationship, the agreement ought to be reviewed in its forthcoming edition regarding the potential for operators to interpret its contents and, more importantly, to include incentives for service quality with a customer-oriented approach.

REFERENCES


