Understanding specifications for the control of service

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Abstract

The objective of this paper is to realize service operations management knowledge on service control implementation. The findings suggest that different specification elements require differences in control and different management attention. For example, that it may be difficult to control all aspects of a service specification but that having less explicit standards does not necessarily mean to have less explicit measures or control. Furthermore, the study clarified that less explicit elements of specifications seem to be controlled through less explicit means of control, and that more explicit specifications may also be controlled by less explicit means.

Keywords: specification, control, service

A key output of the design process is the development of a specification that sets out a detailed description of the product, and standards for the control of manufacturing processes in the manufacture of the product. The specification will include variables and attributes (Slack et al. 2007); variables such as thickness, diameter, and tensile strength, and attributes such as surface finish, colour and smoothness. While customer requirements, and even the initial ideas of the design team, may be imprecise they have to be turned into a specification with precise and measurable values that can be used for control.

While there is a good deal of literature about product specifications there is little concerning the operational notion of service specifications and service control. Johnston (2005), for example, stated "We still have not promulgated or researched an operations approach to service quality. As a result the term service quality has become synonymous with customer satisfaction. What about conformance to specification? And therein lays the problem. There is almost no work on service specifications and until we fill this gap I suspect we will have little to say [on service quality] from an operations point of view" (p1300). He goes on to suggest some questions for research. What is a service specification? What mechanisms can be used to control service specifications including customer and employee behaviour as well as inputs to the process? How do we manage conformance to specification when the specification is implicit?

While there are many commodity type services where clear service specifications with precise values may be possible for some elements of the service, such as telephone answering times, and document processing times; there are other services, and other

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elements of commodity type services, where the requirements may not be capable of being translated into precise values. In particular, in the many intangible, high-interaction, human-based service processes, the specification of the service is implicit, such as the feelings and emotions to be created during a service encounter, the degree of empathy, attentiveness and even friendliness to be displayed. How are, or can, these less tangible factors be specified and controlled in the delivery of service?

The limited understanding of service specifications and the absence of a design specification appears to cause difficulties in some service organisations and creates practical problems for operations managers in controlling service. For example, how can managers keep control of service operations where specifications don't exist?

The objective of this paper, therefore, is to respond to this gap in extant knowledge by investigating how organisations use service specifications to control the provision and delivery of their services. It attempts to answer three questions:

1. What does a service specification look like?
2. In what ways might service specifications be used for control?
3. How does one large service organisation actually go about using specifications to control both the hard and soft sides of the services delivered?

These three questions are dealt with, in turn, in the following sections. The paper concludes with the study main findings, the limitations of the research and some suggestions for further work.

Process and product/service specifications

The service literature takes a predominantly marketing and customer perspective of service, and focuses on quality as the definition of customer requirements in terms of factors or dimensions of quality (see for example Anderson et al. 1997, Zeithaml et al. 1993, Johnston 1995). Indeed service quality is usually defined as the degree of fit between customer expectations and perceptions (see for example Bitner and Hubbert 1994, Oliver 1997). This is in contrast to the operations literature that usually defines quality in terms of delivery or conformance to specification (see for example Levitt, 1972, Crosby, 1979, Garvin, 1984, Juran and Gryna, 1988). This has led to a "concern with customer-based views of quality as opposed to the traditional (and largely unrepresented) notions of conformance to specification" in the service management literature (Johnston 2005 p1298). Because of this there is limited literature on the nature of service specifications. So the starting point in this section to answer the question 'what does a service specification look like' begins in the product-based literature.

Process specification

Process design is about designing and developing the operational processes so they can create the products or services (Slack et al. 2005). Process design involves understanding the characteristics of the product to determine the appropriate manufacturing techniques; it "translates product design into the technical knowledge, organisational capabilities and operating processes needed to create the product" (Pisano 1997, p33). Pisano (1997, p31) further asserted that there are few publications that focus on process development in the business domain. The OM literature that does exist in this area appears to be primarily concerned with specifying manufacturing rather than service systems.

Product or service specification

Product (or service) design, on the other hand, "is the set of parallel and sequential activities by which an idea is translated into a manufactured reality" (Moultrie 2005, p223). In the OM literature there are several approaches that deal with turning imprecise ideas about a product or a service into a design specification; however it is also not an easy task. "Customer attributes (requirements) form an imprecise problem domain and are widely varying in nature depending on the wide variations in applications of the product. In order to quantify and qualify the chaotic customer groups, a systematic strategy to identify and classify the attributes is needed. Effectively capturing and analyzing those requirements is a challenging task" (Krishnapillai and Zeid 2006, pp30-31). One approach is the 'design funnel' (see for example Slack et al. 2005) and another is Quality Function Deployment (QFD) though more hybrid and complex approaches have also been developed (see for example, Krishnapillai and Zeid 2006, Harding et al. 2001). However while these techniques will identify variables and attributes it does "not necessarily create precise and quantitative design targets and values" (Krishnapillai and Zeid, (2006, p31).

While the notion of product specification is one that appears to be well accepted in the goods-related literature, there is limited coverage of specifications in its application to services. Pinto (2005, 2009) argues that service specifications include the description of sets of features (attributes and variables) (see also Parasuraman et al. 1985; Johnston 1995 and 2005) with associated targets and tolerances (some of which may be explicit, others implicit) communicated by a variety of forms (written or oral instructions, pictures or scripts) (see also Juran and Gryna 1988, Slack et al. 2005, Harris et al. 2003, Karten 2004) for the design/control (otherwise is redundant) of the inputs, process and outputs of the service delivery system.

Using service specifications for control

Considering that a service specification includes the definition of a set of targets and tolerances for the design and control of the service delivery features, the second question raised "in what ways might service specifications be used for control" remains unanswered. The control based literature helps further such understanding and is detailed in this section.

One key output of the design process is the specification for the product or service which can then be used to check that the operational processes create products or services that conform to this specification (quality control) (Garvin 1984 and Evans and Lindsay 2002). Control is the process of monitoring the operations activity against the specification and taking corrective action when necessary (Ishikawa, 1985; Feigenbaum, 1986; Garvin, 1984; Evans and Lindsay, 2002). Control is also referred to as the task of ensuring that activities produce the desired results. With regard to people, control is an attempt to increase the probability that individuals and groups will behave and works in such a way as to attain the desired goals (Reeves and Woodward, 1970; Flamholtz *et al.*, 1985).

We would suggest that control in service operations, like in product-based operations, requires a clear, agreed and articulated service specification (subject/features, forms, factors and standards, see last section) together with mechanisms for its communication and adjustment (see for example Ouchi and Maguire, 1975; Ouchi, 1979; Mintzberg, 1995). Hence, the effectiveness of control depends on the articulation of the specification, the mechanism for its communication, the measure of the achieved goal and the feedback of results. The following paragraphs deal with each of these.

The articulation of the specification depends on the subject detailed in different and relevant features, defined in terms of targets and tolerances. This means that it relates to the degree of explicitness of the standard and to the form in which the standard is detailed. For example, the process of control is facilitated when the standards (targets and tolerances allowed) are explicitly detailed in a manual of procedures (or quality manual) and are taught in training, because it clarifies the goal in itself and it provides guidelines for the feedback.

Those service specifications then need to be clearly communicated throughout the organisation. Berkley and Gupta asserted that an organisation's ability to deliver quality service depends on its ability to communicate service specifications to ensure that everyone knows what is expected. Service standards should be communicated and reinforced at every opportunity – in meetings and training sessions, in internal media and in performance measurement, appraisal and reward systems. A manual of procedures or a training manual is an explicit form of communicating targets and tolerances of the features. Training and coaching can be an implicit form of articulating the tolerance allowed to a desired target when, for example, interacting with the customer. The selection criteria, is a more indirect form of communicating the specifications of the service, by selecting employees who can ensure by their previous experience a specific way of dealing with problems or with the customer, for example. The form of specification is then also the form of communication.

The measure is the goal/objective to be achieved. This is the definition/choice of a tool to collect evidence of performance (which in turn will be compared to the standard – target and tolerance). The more explicit and articulated goals tend to be more easily measured. The more implicit and intangible might be less feasible, such as friendliness or customer support.

Feedback then provides the necessary information to allow for the adjustment of inputs, activities behaviours etc to ensure the target is met. This is the closing of the cycle that enables learning and improvement.

In summary, service specifications are used for control in several different ways, as means of communication, means of measure and means of feedback. The specification communicates the targets and tolerances defined for the different features of the subjects, supports and enables the measure of performance and it provides a means for the feedback. The use of service specifications in many different ways appears to be justified by the different degrees of explicitness of the form of the specification.

Methodology

The data on which this paper is based comes from a three year study of five services provided by one large European service organisation through interviews with managers and staff, analysis of documentary data and field observation.

A case study approach was chosen as the research method, because the objective was to gather rich data on service specifications in a real-life setting (Eisenhardt 1989, Yin 2003). This research adopted an interpretive multiple-case approach (Meredith 1998). One European airline, a member of the Star Alliance, agreed to provide access to their processes, staff and documentation. The airline has operated since 1945. In 2007, the company employed over 10.800 people. The company currently flies to 58 destinations, throughout 27 countries in Europe, Africa and North and South America.

The selection of the operational processes to be studied ensured the presence of both service hard and soft features, which directed the research to high volume operations with direct contact with customers and high levels of customer interaction. Five processes of the airline service were selected; check-in, boarding, customer service,

complaints and CST (Customer Service Team – The team that deals with problemsWhen there are no specific issues, the team would be used to wander round the airport checking passengers and being available to provide advice.)

All the studied processes can be characterised as being high volume and high interaction, but they present different levels of customisation between them. Considering an axis with the left extreme (0) characterizing the total routine and standardized process and the right extreme (10) representing the non routine and highly customised process we could represent the analysed processes as in Figure 1.

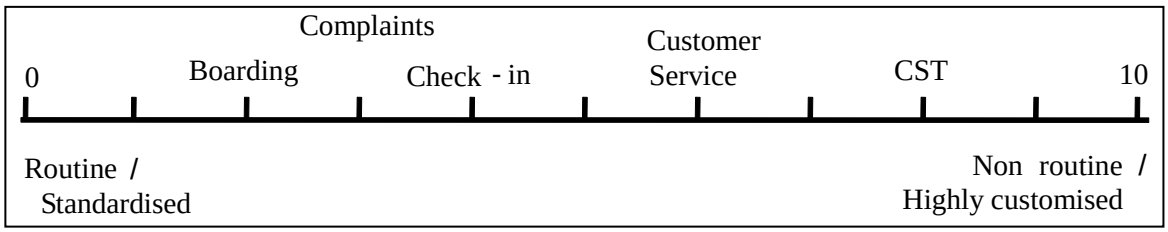

Figure 1 Process characteristics

Data collection included interviews with staff, the collection of documentary evidence and observation. The interviewees were from different functional areas (operations, marketing, and human resources management) and from different hierarchical levels (front-line employees, coordinators, supervisors, station manager, head of department and executive vice-president). Several documents were analyzed to allow objective comparisons as well as the emergence of contradictions (Meredith et al. 1989). The documents included; company annual reports, legislation, manual of procedures, training manuals and seminars, manual of employee appearance and uniforms, service level agreements, internal memos, employee selection and recruitment criteria. The processes were also observed in action. The purpose was to observe the way people undertook their everyday activities. In particular, our interest was in identifying procedures and actions that employees perform almost automatically without being aware of them.

The resulting data were analysed. The focus was on the understanding of the implementation of specifications for the control of the delivery in real service contexts.

Using service specifications for control – in practice

The findings reveal that all processes include explicit and implicit features of subjects. The different subjects were controlled differently, through the implementation of different measures and means of feedback.

The check-in process, for example, has several explicit subjects, such as the definition of the sequence of steps, the dress code and the technology to be used. The control of these specifications is performed by supervisors or coachers and by the IT system which scripts the steps not allowing the performance of subsequent steps while the previous ones are not completed (e.g. boarding pass is not issued if the employee does not confirm the seat allocation or if luggage is not labelled or confirmed to be inexistent).

Along with such explicit specifications softer or implicit specifications are also defined, such as the detection of false ID or the desired feelings to be engendered in the customer. Control is performed by supervisors that observe the operation and orally feedback for corrections as well as by team workers who closely help each other dealing with problematic passengers, identifying the potential for improvement and ensuring the smoothly delivery of the service.

All the processes involve a team of people with a supervisor and a set of people with a variety of experience, from little to considerable. The teams worked a shift together. This meant that no individuals ever worked alone and had the opportunity to check any part of the process they were uncertain about. More, the rest of the team keep an eye on the new employee, the supervisor assesses and checks the work of each individual, effectively double manning the process. Each individual can always check and ask for details with more experienced colleagues, or with the supervisor. The team members learn from each other and correct each other on how to do things.

The boarding process is also defined through hard and soft specifications. The hard specifications clarify features such as the steps to be followed to board the passenger, the technology to use for the process and dress code. Similarly to the check in process, standards for these features are defined in the manual of procedures and are controlled through technology and direct supervision. For example, the manual of procedures explicitly details that the employee must cross check the boarding card with the passenger ID before introducing the boarding card in the computer/machine. The machine registers the boarding of the passenger allowing a control of all the passengers not yet boarded. The IT system does not allow a one step closeness of boarding without the boarding of the total checked-in passengers. While performing these standardised steps the employee must have a certain posture and must interact with the passenger with respect and feeling of worth. The employee must carefully observe the passengers so to detect unruly passengers (because they may be not allowed to board). These standards though referred in the manual of procedures are detailed through training, coaching and direct supervision. The coacher or the supervisor provide details and lived examples of how to deal in different situations and with different passengers. The employees need to experience different situations to understand the frontiers aimed for the treatment with respect and the feeling of worth and to be able to detail in action the possible alternatives that lead to that result. Supervision and coaching provide direct action feedback.

Supervisors oversee both the technical and behavioural performances of the individual or team. The new individual has always someone who details, explains, shows the tasks for him. The person who explains and exemplifies the details of the process is also the one who “judges” its accuracy. As being there to coach, the supervisor or the team worker also controls the employee activities.

The CST is a special team concerned with providing assistance to passengers during irregularities and with preventing occurrences. The team members have technical knowledge on different processes (e.g. check-in, boarding, customer service) and they follow the established hard specifications when intervening in the specific situations. For example, the team may identify a couple of elder passengers and decide to accompany them to the check-in area and to check them in a separate counter. The team may also accompany the couple to the boarding gate. For the performance of these activities the specific processes hard procedures are completed, which are controlled by the means set for each standard and presented above.

But the team is specifically focused on customer interaction, taking the first step in interaction and in dealing with special needs, difficult situations, and unruly or anxious passengers. The interaction is detailed through coaching in the operation. Coaching is done by the supervisor who carefully selects the team members. Employees are expected to know how to use their good sense and sometimes not to follow the rules

(defined procedures) for the benefit of the customer, then they are carefully selected so to have such ability.

Selection criteria are used to attract staff with particular behaviour traits and skills, which are then assumed to deliver the appropriate service.

Control is done by the selection of the employees, which guarantees that each of them has the skills to deal with difficult passenger interactions. The supervisor who is in the operation with the team also assesses performance and feedbacks the members in what can be improved. One assessment of the team performance is done by the number of complaints during and post operation that have reduced since the start in the operation.

From the implementation of service control in the analysed processes, illustrated in the examples above, it can be argued that hard specifications describe features of the processes such as dress code, the sequence of steps or the technology to be used and how. Hard specifications tend to be typically quantified and precisely measured using IT systems, direct supervision and the customer.

The findings also reveal that soft specifications typically relate to customer interaction and employee behaviour. These features tend to be less explicit, less quantified and quantifiable, with the standards and targets being more qualitative. The control of soft specifications is done through direct supervision, coaching and team work.

One specific finding of this study is that some forms of specification are used for simultaneous specification and control. It is the case of direct supervision, team work and coaching. The person who is in the process to clarify steps, explain details or exemplify behaviour, is the same that checks if the employee is doing things properly. By being there the supervisor observes employee posture and behaviour and he/she can provide comments or exemplify how to improve it. For example, that the employee should look into the passengers' eyes while talking to them instead of focusing only the computer. The supervisor or a more experienced employee may coach a new employee how to interact with the passenger so that he/she doesn't even notice that the employee is filling info into the system and gets a perception that the employee was there totally focused on him/her and his/her needs.

Hence, for soft specifications the form that supports/details the standard is at the same time the mean of control. It details and provides meaning for a feature; it assesses performance and provides feedback for the employees.

It follows from these findings that hard and soft specifications can be analysed through a similar structure (feature, form, standard, control), but differ in their nature, i.e. degree of explicitness and possibility of precise measure and mean of feedback.

In fact, some of the subject features admit fully descriptions and explicitness of the standards, such as manuals of procedures and technical training; others enable explanation, clarification of meaning and observation of experience, such as coaching and team work. This is particularly important because in service interaction high customer contact may require specific ways to deal with different customers, making the definition of simple standards more difficult. When the standard is imprecise the employee needs to have an implicit idea of a desired outcome and so needs to be selected/trained/coached accordingly. In this context of the check in, it may be the example of identifying a false ID (or a customer with expired ID documents). There is high variability as to how customers and staff can react. So they need to be trained and coached on how to deal with it and they need to understand how their different reactions can affect the customer's behaviour. Behavioural training is used in some situations. However, when it is difficult to make things explicit outside the context, onsite training

needs to be done to explain all the details of the context. Coaching and teamwork is used to exemplify behavioural details.

Surprisingly, though the company mentioned the importance of the customer, there was no specification of the customers as an input (e.g. their competence and skills to use the service). From the operational perspective, the customers' skills are relevant as they may influence the design of the delivery process, and as such of the process specifications. The customer behaviour is then, at a certain extent, controlled through the process.

Conclusion

The literature review on specifications allowed an answer to the first question. Service specifications include the description of sets of features (attributes and variables) with associated targets and tolerances (some of which may be explicit, others implicit) communicated by a variety of forms (written or oral instructions, pictures or scripts) for the design/control of the inputs, process and outputs of the service delivery system.

The literature review on service control and the empirical study have furthered the understanding of the use of service specifications for control, answering the second and third questions. Specifically, it has thrown up a number of interesting issues in the development and use of service specifications:

- In services it may not be always possible to have explicit targets and/or tolerances for all aspects of a service (because some are hazy memories and expectations). Thus some parts of a service specification are more explicit than others.
- A hazy memory can be a specification as it is a standard (target and tolerance) implicitly defined in the mind of an employee or a supervisor. The study shows that employees tend to use solutions that they know have worked in similar prior situations (in that or in other jobs). And in this way it constitutes a specification of input.
- This study clarifies it by describing that when it is not possible or desirable to specify everything the careful selection of employees (for example with previous experience on a job or with certain interpersonal skills) will ensure some service consistency and the right interpretation of the instructions.
- Having less explicit standards does not necessarily mean to have less explicit measures. For example the dress code is specified in a picture or set of pictures about how to wear a scarf showing several acceptable and unacceptable uses. That is an explicit specification that allows explicit control. But if the standard is to look good – i.e. more implicit, the control may be also less explicit. In this case the measure and feedback may be the supervisor saying is OK or not OK. So it is the supervisor who while controlling defines the tolerances allowed. A form of spec not considered till now in the literature. In this last example the spec is less explicit but the feedback control is explicit.
- Several people would argue about the possibility of making specifications of an intangible service explicit. We argue that there is no need of making them explicit, and sometimes it may be impossible or not desirable to do it.
- Different specifications require differences in control and different management attention. This study clarified that less explicit specifications seem to be controlled through less explicit means of control, and that more explicit specifications may also be controlled by less explicit means.
- Some forms of specification are also used for control (it defines the standard; it is the mean of control, i.e. the measure and its mean of feedback).

- Despite the customer importance to the company there was no specification of the customers as an input.

These conclusions direct two managerial implications. The first practical implication seems to be the attention that needs to be drawn to the management of more implicit specifications (i.e. the coherent definition and control of more implicit specifications). In fact, the absence of intervention (in terms of definition and control) in certain tacit and implicit specifications (e.g. details of behaviour) might have consequences on the reliability and consistency of the operations along time and among different employees, and on their replicability along sites. To ignore the implicit specifications seems to lead to difficulties in the implementation of control in services.

The second order managerial implication appears to be the clarification of the link between operations, human resources and marketing managers. In contrast with Lu and Wood (2006) argument that process and product design are two very distinct functions, this study strength the fact that in services it is very difficult to separate process from output with concrete managerial implications. At the design stage, the interrelation between the functional areas is required for the definition of the appropriate employee and customer skills, and for the customer training. At the implementation stage, the interaction is necessary to ensure coordination between operational goals, training, supervision, systems and customer participation. Both at the design and implementation stages a holistic perspective of the processes replaces a shared view of line processes, because in services process and outcome tend to overlap. This means that overlooking certain elements and their interaction may prove to impact on operations effectiveness.

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