

THE CUSTOMER SERVICE PROCESS:  
THE LEAN THINKING PERSPECTIVE

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**Abstract**

Lean thinking has proved to be successful in improving results in industry. Services could benefit from this approach too. The success of lean thinking depends on the appropriate identification and elimination of waste. This paper describes the work carried out in identifying and analysing waste in the customer service process of a major telecommunications operator. An Action Research approach was adopted, and a “lean team” of company personnel was specially formed to undertake the necessary fieldwork. The study inspired management changes aimed at improving the customer service centre's performance.

**Keywords**

Service operations, lean thinking, organizational learning

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## INTRODUCTION

There are ever fewer doubts about the rising importance of services in the more advanced economies (Fitzimmons and Fitzimmons, 2000; Roth and Menor, 2003). Nor is there any disagreement that, in spite of their importance, services are misunderstood, mismanaged and misgauged (Henkoff, 1994; Bowen and Hallowell, 2002; Grönroos and Ojasalo, 2004). As well as this appraisal, which is born out by both academics and practitioners, there is the customers' view, whose satisfaction regarding services reveals some shocking statistics (Bowen and Hallowell, 2002). "In sum, we don't seem to get the service "right" in either management practice or theory" (Bowen and Hallowell, 2002). This sentence is a blunt yet faithful evaluation of the current state of services. The greatest irony is that we have been studying this for more than 30 years, since Prof. Theodore Levitt, in his now classic article "*Production-line approach to service*", proposed the "industrialisation" of services as the simple method of improving services' performance indicators (Levitt, 1972).

It is hardly surprising, then, that voices are being raised everywhere about the urgent need for research and work on improving service management (Roth and Menor, 2003; Johnston, 1998; Grönroos and Ojasalo, 2004). Research agendas have been opened to suit all interests and tastes. We, as teachers of operations management, have decided to "go back to our roots" (Johnston, 1998), to the analysis of processes, of their effectiveness and efficiency, but with the focus on services.

And how do we define services? While there is a whole host of definitions of services, the definition on which they are all converging is very close to the area of operations: services are basically processes which are characterised by the interaction between the customer and the resources of the service provider (Grönroos, 1998; Sampson, 1999; Fitzimmons and Fitzimmons, 2000; Grönroos, 2004). Services are processes, that is to say, we will have input, transformation activities and output.

In almost all today's companies, regardless of the "traditional" sector they belong to, there is a service process of relevant importance because of its considerable impact on customer perception and on the innovation and improvement of operations: it is the customer service process. Within this customer service process, a particularly interesting sub-process can be identified: the service recovery process. We focus on this latter process.

The service recovery process, understood as action aimed at finding solutions to the failure of a service delivery system, is a topic of growing research interest. On the one hand is its impact on customer loyalty and the subsequent effect on companies' income and profitability; and on the other, the valuable information it provides on the causes of the problems which are at the root of complaints, making it a solid source of information for continuous improvement (Tax and Brown, 1998; Johnston and Mehra, 2002). Studies show that, in spite of these benefits, the majority of customers are not satisfied with the way in which organisations settle their complaints, and a great many companies do not make the most of the learning opportunities provided by system failures.

The purpose of this research paper, therefore, is to contribute to the understanding of service process management from an operational perspective, and more specifically, focusing

through the lens of lean thinking, a philosophy which is exporting the effective and efficient results obtained in industry to the service sector (Bowen and Youngdahl, 1998). By studying the operational practices at the Customer Service Centre of a major telecommunications operator, our aim is to answer the following question: Why does customer service not flow as the customer would like and in an effective way for the company? Customer service centres provide the first, and in many cases, only access to the service recovery process in a good many organisations, be they service companies or not. The significance of this case in particular is born out by the Spanish Confederation of Consumers and Users (CECU), which reports that in 2002, of all complaints received, 6.2 per cent came from users dissatisfied with telecommunications services, outstanding among the principle complaints being customer service, which "in 90 per cent of cases solves absolutely nothing, so that there are users who call more than 40 times and speak to different people who do not follow up their complaint" (Consumer.es, 2003).

Given the complexity of such a process, we argue that it is important to study it as an integrative matter. Hence, action research was employed.

The outline of the paper is as follows: first, we establish a theoretical overview concerning service performance and lean thinking. We then go on to explain our research design and execution. Subsequently, our empirical findings are presented, followed by an analysis of waste identified in the customer service process. We end the paper with directions for future research.

## THEORETICAL BACKGROUND

The effective and efficient management of service processes is the challenge we have before us. We take effectiveness to mean the extent to which a process adapts to customer requirements, resulting in their satisfaction. Efficiency, meanwhile, is how the process converts resources to produce the output customers expect; in other words, how the resources used in becoming effective are consumed. However, service processes are characterised by the fact that the customer provides significant input to the production process (Sampson, 1999; Grönroos y Ojasalo, 2004). That input can be of three general types: the customer him/herself, goods from the customer and/or information from the customer (Sampson, 1999). But customers do not only provide input (they themselves, information, requests, complaints), they also take part in the service process, influencing both the process's performance, that is to say its efficiency, and the perception of quality of the service produced, or rather its effectiveness (Grönroos and Ojasalo, 2004). In service processes, customers are more than mere consumers of output, they are co-producers of the process. Both concepts, effectiveness and efficiency, are therefore inseparable and this is how they are understood in the concept of service productivity (Grönroos y Ojasalo, 2004).

As far as models for the effective and efficient management of services are concerned, our first point of reference is Prof. T. Levitt's proposal for the industrialisation of services (Levitt, 1972). He maintained that the quality - effectiveness - of services would improve quite clearly if they were approached with the same "industrial" mentality, or rather "changing people and coincidence for technology and systems". This logic of "industrialising" certainly remains valid, only now it should be achieved not by applying the industrial practices of the time, which correspond to mass production models, production based on trade-offs, but rather more modern practices, those of lean operations, which enable efficient mass production practices to combine with flexible approaches from traditional artisan production, thus giving rise to the lean service (Bowen and Younhdal, 1995).

The magnificent performance advantages that a lean producer has over typical mass producers have been widely described (Womack, Jones and Roos, 1990). The principle of lean thinking means "moving towards the elimination of all waste in order to develop an operation that is faster, more dependable, produces higher quality products and services and, above all, operates at low cost" (Slack et al, 2004). Its primary goal is, therefore, to increase the efficiency of production by means of the complete elimination of waste (Ohno, 1998), understanding as waste all that - time, cost, work - which does not add value from the point of view of the customer.

This waste can be defined, specifically for services, in the following way (George, 2003):

- a) *Overproduction*: production of services above and beyond what is necessary for immediate use; performing a service which the customer only requires at a later stage, or providing them with a service they have not requested. This waste is linked to the company's desire to achieve 100 per cent use of its resources. So, for example, a telecommunications operator may choose to bring forward the date for transferring a line to a customer simply because it proves more convenient, because it has staff to keep busy or because with this request it can put together an "economic batch" of services.
- b) *Waiting time*: any delay between one activity and

another. It is waste which cannot be recovered. It may arise from staff difficulties in knowing what has to be done because of lack of training, lack of regularisation or lack of information. And all this applies equally to the customer since they are co-producers of the service. c) *Defective products*: any aspect of the service which does not meet the customer's requirements. It can range from losing information to failing to meet agreed deadlines, causing the customer to be dissatisfied. Some defects are caused by incorrect information, or by incorrect instructions, to name just two causes. Someone in the flow realises there is a defect and has to reprocess the request, or go back on themselves. The waste associated with defective products is the cost of the extra material (minimal or non-existent in the case of processes where the input is information) which cannot be recovered at the end of the process, as well as the costs of production work for the service (the time spent responding to the request in vain). d) *Inventory*: any work on processes in excess of what is required to be produced for the customer; this could be calls on hold, requests for papers pending, e-mails awaiting a reply, people in a queue. e) *Motion*: referring to the needless movement of employees (to find information, for example). This waste is rare in services. f) *Process*: trying to add more value to a service/product than what the customer wants to pay for it; that is to say, doing more work than is absolutely necessary to satisfy customers, for example, multiple steps in order to approve something, or multiple calls in order to get an answer. g) *Transport*: referring to the unnecessary movement of work (in a call centre, the movement of information, for example). This waste appears as customer requests being needlessly passed from one member of staff to another, from one department to another because no-one knows what to do with the request or no-one is "in charge" of the process, or because staff performance indicators work against it being addressed.

The identification of this waste is the first step towards its elimination, which can notably improve productive efficiency. It is this identification of waste which generates a systematic problem solving process, the "repeating *why* five times", in order to uncover the root cause of the waste and eliminate it. Many researchers have come to the conclusion that solving problems creates knowledge. By knowledge creation through problem solving, a organization refines the understanding of its process and improve its business performance

## RESEARCH DESIGN AND EXECUTION

It is in this context of lean thinking principles that this paper tackles the analysis of a special type of service process, the service recovery process. In order to do this, we identify and analyse the waste which prevents a service from flowing through the customer service process in an effective way for the customer and an efficient way for the company. This must activate a search for the causes of this waste or these obstacles so as to proceed to their complete elimination.

In order to carry out this study, we chose the customer service centre of a major telecommunications operator which currently has the implementation of the lean approach to their department, thus following the lead of the same operator's Facilities and Maintenance division, where lean manufacturing concepts are being applied to notable effect.

### *Research design*

Since there are common goals between the investigators and the company, and a review of available literature reveals an absence of studies in this sense for service processes where the input for transformation is customer information, customer requests and/or complaints, we as researchers were also engaged in playing two additional roles: as teachers and consultants. On the one hand, we had to introduce academic knowledge and theory on lean thinking and, on the other, we had to provide feedback throughout the study. This placed us in a very specific variant of the case study method known as action research.

Action research is a relevant, valid and necessary methodology for tackling the problems faced by operations managers in today's companies. We have "to engage with real operations managers and focus our efforts on helping them deal with the actual problems they are facing in today's complex and fast-changing world" (Hayes, 2000).

Action research is applicable to issues which are not structured or integral and which are broadly relevant to practitioners. It is related to issues which cannot be shaped but which must be managed (Westbrook, 1995). Specifically, in the customer service process under study, the problem to be tackled was fuzzy and unstructured, required an integral, systematic approach and more importantly, its administration poses a real challenge to its managers.

### *Research execution*

Using the described approach, the research was carried out in the following steps: 1) Basic agreements on the development of the joint project; 2) diagnosis; 3) setup of knowledge; 4) action; 5) feedback; 6) action; 7) feedback.

#### *Step 1 – Agreements*

The first step was to meet the customer service centre management, consisting of the head and deputy heads, in order to: a) understand the situation and define the problem, thus restricting the study to a specific service which would act as a pilot for familiarisation with lean thinking principles and methodology, a less complex service compared to the other services in this division, and over which the customer service centre had greater control; b) agree on the aims and scope of the study, which fortunately coincided with the goals of this

research as expressed in the Research aim section; c) clarify the methodology, an explanation of what it consisted of was offered and received an enthusiastic response; d) select the participating team, agreeing that it should be formed by members of all the departments which take part in the chosen service, finally consisting of nine people, including the division's manager; e) draw up a schedule.

### *Step 2 – Diagnosis*

Using an interview format, the aim of this step was to review the type of information the company already had on queries, their classification, volumes, times and customer satisfaction. As far as customer satisfaction is concerned, the studies made by the customer service centre reveal that customers complain about the process's capacity to solve problems, both in terms of speed (it takes a long time) and in the reliability of the information given. So, we classified the complaints in two types. Once again, at this stage, only the three members of the management team took part.

### *Step 3 – Setup of knowledge*

The purpose of this stage was to instruct all the members of the "lean team", as it came to be known, in the basic concepts of lean thinking (process, flow, service maps, value, waste, cycles). To do so, a seminar was held with the following content: 1) discussion of a mini-case of poor service in a different context from telecommunications so as to highlight the concepts of effectiveness and efficiency, as well as the concept of service seen as a process; 2) next, they were introduced to the concepts of lean manufacturing via a simulation carried out using Lego pieces, since these people had no previous experience of this approach, accompanying this action learning with a reading on waste in industry, its nature and programmes to eliminate it; 3) then the case of a customer's complaint to a telecommunications company was discussed, a case which was the copy of a letter this customer sent to another department of the company in question and which we obtained directly from the customer; the purpose of this exercise was to analyse the waste present in this process from the point of view of the customer; 4) finally, there was a presentation followed by a discussion on the concepts and principles of lean manufacturing and its application to lean service.

### *Step 4 – Action*

All members of the lean team and we ourselves simultaneously monitored the customer's request to the chosen service together, with the aim of drawing up a process map of the service (a value stream) and identifying and analysing the existing waste. In this exercise we used the following questions: What adds value from the customer's point of view? What kind of waste do we see in the process? How can service be done without the consumer waiting and without interruption? With this step, we made sure that all members of the lean team had understood the essential elements of process analysis from the lean perspective.

<Insert table 1 about here>

### *Step 5 – Feedback*

Based on the work done at the previous stage, we conducted a more detailed analysis and presented it to the group where the questions we re-raised on possible causes of waste and the ways of eliminating it. The list of possible causes arose at this point: C1) incomplete

information, C2) information unavailable in real time, C3) fragmented information, disjointed information, separated knowledge (each employee and/or department has a scrap of information), C4) ignorance on the part of the employees involved at all points of the process, C5) lack of will on the part of employees, lack of motivation, C6) inappropriate tools for diagnosis and monitoring, C7) very open processes, C8) the different language used (between departments and between these and the customer), C9) conflicting performance indicators ("I shouldn't take too long with this customer because it goes against my work results"), C10) policy and/or procedure which is not focused on the customer, C11) no-one takes on the problem as their own; C12) others.

#### *Steps 6 and 7 – Action and Feedback*

Using the methodology learned in step 4, the members of the lean team, who were divided into four groups, analysed a further 31 complaints. To do so, they used a form at which gathered together the monitoring of each complaints, as can be seen in Table 1. An initial draft of this table was presented as of step 4 and, with the lean team's contributions, the final version appears below. Finally, the results and analysis were presented to all members of the "lean team".

## RESEARCH FINDINGS

Apart from the identification and understanding of the waste in the service process under study, the research also provided a thorough insight into the way in which the customer service process evolves. The research especially helped all the participants to form a single, global perception from the customer's point of view. In addition, the results obtained include the learning process experienced over the course of the investigation.

### *Steps 1, 2 and 3 – Agreements, Diagnosis and Setup of knowledge*

All the agreements were possible because both parties were convinced of the mutual benefits. They learned to apply a concept which they felt was necessary and we gathered knowledge of the learning process. This proved essential to registering pertinent, relevant and sufficient information, as was, and most importantly, the desire of those taking part to do a professional job.

While the company has abundant information about customer requests since calls are registered minute-by-minute on a data base, it is information stored in silos. There is no integral approach from the customer's point of view.

Outstanding at this stage was the open-mindedness of all those taking part and their generosity with individual knowledge placed at the service of a common project. The teaching experience was never so rewarding.

### *Steps 4, 5, 6 and 7 – Action, feedback, action and feedback*

The most striking point at these stages was the difficulty experienced in transferring waste to the customer service process context.

It was interesting listening to the participants as they discovered how the customer is a co-producer of the service. In many cases, incorrect information supplied by the customer had an impact both on the quality of the service and the company's performance. This observation serves to confirm that in service processes efficiency and effectiveness are intrinsically linked, owing to a large degree to the customer's participation in the process (Grönroos and Ojasalo, 2004).

As result of our analysis of the sample of complaints, we observe customers make an average of eight calls to the system, which is no guarantee that their queries are answered since there is no alarm or checking system to indicate that the process has ended to the customer's satisfaction. In fact, the lean team realised itself that it is effectively the customer who provides notice of the progress of their request at the different stages, an authentic "pull" system, but one which is corrupted. On average, the system only calls the customer twice, a very "lean" use of resources, but hardly effective with a view to the customer's perception. The system acknowledges that after the third call, it is faced with a problem of quality in the process. In addition, the customer speaks on average to nine different people, having to repeat the cause of their query and its progress each time: a waste both for the customer and the system.

As far as the waste discovered is concerned, waiting time (35%) figures as the most important, followed by defective products (22%) and unnecessary processes (17%) and excess of transport (17%).

The most significant causes of the main waste are incomplete information, and information unavailable in real time, and fragmented information (28%); the lack of will and motivation on the part of employees (19%) and procedures which are not focused on customers and/or which are very loose (24%). With respect to this, it is worth highlighting two important observations made by the "lean team" in the process of identifying waste. Firstly, the confirmation of the role which the customer plays in the efficiency and effectiveness of the process, more so when it was they themselves, with less knowledge of the company's processes than any employee, who tugged at the service chain management so that their request might "flow" through the system.

The second observation is related to a goal of the customer service centre's management in the medium-term: the organisation which learns. When the three most important causes of waste arose, those related to incorrect/unavailable information, those owing to the lack of motivation/will on the part of employees and those caused by procedures which do not focus on the customer, the "lean team", emulating the Toyota style, began to repeatedly ask why. And one of their initial conclusions was that the lack of motivation/will on the part of employees could be a result of the frustration they feel at not having the right information at the right time and/or at having too many procedures which respond to an internal view rather than that of the customer.

*<Insert table 2 about here>*

The analysis of the waste most associated with each type of complaint (type 1: the salesperson does not return the customer's call, 67%, and type 2: The salesperson returns the call but does not solve the problem, 33%) reveals differences regarding waste. Table 2 shows that the time the customer is on hold (D2) without their request being processed is by far the most significant of the complaints where the customer's call is not returned. This type of waste causes an unnecessary lengthening of the service recovery process. However, in those calls where the reason for discontent was the failure to solve a problem, as well as the waiting time (D2), the waste related to the production of defective products (D3) and the excess of transport (D7) take on particular importance. In these last cases the complaint is incorrectly diagnosed and not solved appropriately, which requires a fresh diagnosis and solution. The unnecessary repetition of diagnosis and solution bounces the problem around the organisation according to its diagnosis, lengthening the service recovery process.

*<Insert table 3 about here>*

As waste changes, so do the causes which generate it (Table 3). Therefore, the complaints where the call is not returned, in addition to the initial waste, the waiting time, are primarily related to two types of cause: lack of motivation on the part of the employee and policies and procedure which are not focused on the customer. On the other hand, the complaints caused by dissatisfaction with the response provided by the company essentially have their root in irregularities in the information

being handled, such as, for example, incomplete information, fragmented information or information which is not integral and differences of language between departments.

Analysing the impact of waste on two variables of company results, the level of customer satisfaction, or effectiveness, and company efficiency, we found that waste is seen to have a significant effect on a company's results. On a scale of 1 to 5, we got that the average assessment of the impact on results of the different types of waste stands above 4. Table 4 shows the assessment of the impact of the different waste under consideration against the amount of waste of that type which has been produced. It is plain to see that given the greater proportion with which waste of waiting time appears, this is the one which does most harm to the company, mainly because of the dissatisfaction it generates among customers. Second is the impact of the waste relating to receiving defective products. Finally, we find that waste related to transport and processes impact on company's levels of efficiency more than on customer satisfaction.

*<Insert table 4 about here>*

## CONCLUSIONS

The immediate outcome of the study is the decision on the part of the customer service centre management under study to press ahead with the eradication of the most significant waste: that related to information and procedures and policies which do not focus on the customer and which are too loose. In addition, the "lean team" is now motivated to devise procedures which prevent a customer from having to call the system more than three times, or which sound the alarm that something has gone wrong with the customer's request. They are already considering Poka-Yokes, a well-known concept in lean manufacturing.

Our research remains in progress. The next steps will be to guide the team in the elimination of the waste and in the knowledge creation that will improve the business performance.

There are other service processes which seem to be potential candidates to benefit from the implementation of lean thinking. To begin with, companies from various sectors have major customer service centres where the input is simply customer information. It would be interesting to compare this same process in companies from different sectors.

We hope that with this research we are contributing to the development and advancement of service management.

Tables and graphics

Table 1 – Life of a customer request

A. Basic profile of request:								
Type of request (choice of 2 identified types)	Waiting time	# customer calls	# different people from the organisation who spoke to the customer	# departments in the organisation involved in responding to the customer		# calls made by organisation to the customer		
1	2							
B. Profile of waste:		Over-production (D1)	Waiting Time (D2)	Defective Products (D3)	Inventory (D4)	Motion (D5)	Process (D6)	Transport (D7)
Types of waste								
B.1 Identification of waste (mark with an x)								
B.2 Specific example of waste found								
B.3 Most probable causes of waste found								
B.4 Impact of waste on customer satisfaction –effectiveness*		1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
B.5 Impact of waste on company's efficiency*		1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5

\*(from 1, not at all important, to 5, very important)

Waste	Over-production (D1)	Waiting Time (D2)	Defective Products (D3)	Inventory (D4)	Motion (D5)	Process (D6)	Transport (D7)
Type 1	0%	36%	16% 14% 2%			18%	14%
Type 2	3%	29%	29% 0%		0%	16%	23%

Table 2 – Type of waste according to type of complaint

Causes	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12
Type 1	8%	5%	12%	3%	29%	4%	7% 6%		1%	15%	6%	6%
Type 2	20%	4%	12%	7%	9%	10%	10% 12%	1%		14%	0%	0%

Table 3 – Types of causes according to type of complaint

	Over-production (D1)	Waiting Time (D2)	Defective Products (D3)	Inventory (D4)	Motion (D5)	Process (D6)	Transport (D7)
Customer satisfaction	5	125	60	22 0		25	19
Efficiency	5	98	62 20 0			44	25

Table 4 – Importance of waste in the effectiveness and efficiency of the company

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## NOTAS

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