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UNDERSTANDING SERVICE MANAGEMENT: A SYSTEMATIC LITERATURE REVIEW OF SERVICES CHARACTERISTICS AND CLASSIFICATIONS

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ABSTRACT

This dissertation presents a systematic review of the literature about the distinctive characteristics of services, often studied in terms of the similarities and differences when compared to goods, and about the classifications that scholars have developed to improve the understanding and management of services. Both topics have characterized the service management literature since its emergence.

Academics have extensively used four attributes to argue that services are uniquely different from goods, as well as for arguing that the differences are not meaningful: inseparability of production and consumption, heterogeneity, intangibility, and perishability. Arguments according to different functional and theoretical perspectives and different levels of analysis are reviewed. Ultimately, it is argued that a goods/services dichotomy is irrelevant, and that research should focus on the distinctive features of a generic product/service.

Management scholars have always used classifications to foster the understanding organizations at both academic and managerial levels. Most of the typologies regarding the management of services, either from a marketing or an operations management perspective, are descriptive, and only a few attempt to prescribe design and management. Classifications make use of theoretical rationales with different degrees of robustness, and utilize a large variety of dimensions to type organizations.

The development of both topics has been eminently conceptual; empirical research supporting the major tenets is scarce.

The systematic character of the review means that an explicit effort is made to provide transparency and traceability to the researcher's decisions and criteria. A review methodology relatively new to management research is used, and it proves to be highly valuable. The fit between the research project characteristics and the operationalization of the systematic review principles is pointed out as a contribution to the development of this methodology for management research.

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1 INTRODUCTION

1.1 OVERVIEW

This dissertation presents a systematic review of the literature about the distinctive characteristics of services, often studied in terms of the similarities and differences when compared to goods, and about the classifications that scholars have developed to improve the understanding and management of services. The systematic character of the review means that an explicit effort is made to provide transparency and traceability to the researcher's decisions and criteria.

The research is original (as in Phillips and Pugh, 2000) in two aspects: it attempts to create a new synthesis that has not been done before, and applies a technique to the management field – systematic reviews – which is usually associated with other scientific disciplines, namely medical sciences.

The literature review has four objectives. Its main purpose is to provide the researcher with a thorough understanding and assessment of the existing knowledge in the stated topic, and to consolidate that knowledge in a proper synthesis. The synthesis is meant to answer two complementary questions: what is already known in the field, and what is not known yet. Hence, a second objective is to identify research opportunities, which may be developed into further doctoral research questions. A third purpose is to contribute to the literature in the services management field; the systematic character of this literature review makes it relatively more comprehensive and inclusive than previous work. Finally, from a methodological perspective, it is the fourth aim of this research to contribute to the development of systematic reviews as a valuable research approach.

Chapter 1 introduces the main features of this dissertation, justifies the rationale for the review, and defines the research questions to be undertaken. In Chapter 2 the research methodology is described. The characteristics of a systematic literature review are outlined, and all methodological details and results are carefully explained. Chapter 3 presents the findings of the study, organized in two main sections: a descriptive analysis of the sets of studies included, and a thematic analysis of their content. The main results are discussed for each of the two review topics. Finally, Chapter 4 closes the document with conclusions regarding both content and methodology.

1.2 RESEARCH RATIONALE

The purpose of this section is to provide an overview of the major theoretical debates that inform the research questions of this study.

ARE SERVICES DIFFERENT?

The service sector constitutes now more than 60% of GDP and accounts for more than 70% of employment in many developed countries (Armistead, Johnston and Slack, 1988; van Biema and Greenwald, 1997), and the design and performance of its component systems are considered inextricably linked to the quality of life in a society (Drucker, 1991).

During the last 30 years, the literature on services has become very large. Many authors have extensively reviewed its evolution (Berry and Parasuraman, 1993; Fisk, Brown and Bitner, 1993; Grönroos, 1994; Iacobucci, 1996). The trigger to the development of management interest in services, either from within disciplinary perspectives, such as services marketing or service operations, or from a broader perspective of service management, was the notion that "services are different" (see for example Thomas, 1978).

One of the first insights into the nature of services was made as early as Karl Marx:

> 'Services are consumed the moment they are produced. The useful effect can be consumed only during the process of production. It does not exist as a utility different from the process, a use-thing which does not function as an article of commerce, does not circulate as a commodity after it has been produced' (cited by Mills and Margulies, 1980: 260).

Since then, two main aspects of this definition have been widely cited in the service management literature. The first one and most mentioned is intangibility, which amongst other implications means the inability to accumulate inventory; the second one is the closeness of the consumer to the producer, which roots the crucial significance of workers in the service delivery process. These particular characteristics, among many others, have been extended by a significant number of organizational theorists and management academics for the last 30 years to explain the differences between the nature of manufactured goods and of services, and its implications in managing goods producing organizations or services producing organizations (Berry and Parasuraman, 1993; Fisk, Brown et al, 1993; Johnston, 1993; Rathmell, 1966).

The first academic efforts to understand the implications that these differences produced in management practice and theory were rooted in the marketing discipline. The field of Services Marketing emerged by the early 1970's to offer an alternative view to the prevailing theories of marketing based on physical goods (Berry and Parasuraman, 1993). Its main claim was that, since services were "different", the management theories and therefore the best practices – monopolized by manufacturing for the greatest part of the history of the management field – must be different as well (Bowen and Ford, 2002).

But there was also an alternative view, even from within the same Marketing field:

> 'The service sector of the economy is growing in size but shrinking in quality. So say a lot of people. Purveyors of services, for their part, think that they and their problems are fundamentally different form other businesses and their problems. They feel that service is people-intensive, while the rest of the economy is capital-intensive. But these differences are largely spurious. There are no such things as service industries. There are only industries whose service components are greater or less than those of other industries. Everybody is in service.' (Levitt, 1972: 41).

The debate was also picked up by the operations management discipline (Chase, 1978). Most of the initial claims were towards applying to the services settings the efficiency paradigm normally held by the manufacturing perspective, along with its entire set of 'tools, skills, processes, organizational rearrangements, incentives, controls, and audits' (Levitt, 1972: 44), in order to drastically improve its productivity.

But in the following two decades that argument 'has gone from being viewed as ideal to being described as totally inappropriate' (Bowen and Youngdahl, 1998: 207). Whilst recognizing the virtues that the "industrialized-service model" might have had, some authors criticized it for putting 'the people who deliver service to customers last', and proposed a different paradigm, which 'puts frontline workers first and designs the business system around them' (Schlesinger and Heskett, 1991: 71).

UNDERSTANDING THROUGH TYPOLOGIES

The service management literature has been characterized by a series of debates. One of them is that of whether the nature of services is different enough as to merit the development of different management techniques than from those used in goods-producing organizations. A second one, intimately related with the former, is about a

rational order by which to make sense of different types of services organizations, and whether these different types, in turn, merited different management implications.

Research about management and organizations has repeatedly tried to understand the objects of study by developing classifications. Two seminal contributions were those of Thompson (1967) and Perrow (1967), which have become one of the firsts midrange[1] typologies by which scholars attempted to gain understanding of organizations (Mills and Margulies, 1980: 258).

Thompson (1967) purported that organizations exhibit a permanent conflict between a closed system thinking, in which rationality and certainty are key characteristics, and an open system thinking, in which the effects of the environment, and hence uncertainty, are dominant. In order to cope with this conflict, organizations develop different levels of responsibility and control, which can be represented by concentric circles: a technical core, a managerial level, and an institutional outer circle. At the technical core, the orientation of the structure is driven by the nature of the technology required to produce the goods and services the organization has chosen to offer. The key characteristics are rationality and predictability. On the other side, the institutional level deals with the uncertainties emergent from the particular interactions between the organization and different agencies of the community, and needs to abandon a rational perspective in order to be able to recognize spontaneous events. The key characteristics are survival and uncertainty. The managerial level, in the middle, mediates between the technical sub-organization and the elements of the environment to which it needs to relate for input and output transactions, namely resources and customers. The outer level is needed to "seal" the technical core from environmental instability; the technical core, in turn, must adapt to the demands of the environment. Both the technology and the environment can become sources of variation in the relationships between the three levels and in the organization structure.

The typology suggested by Thompson (1967) combines the degree of standardization of the nature and flow of inputs and outputs, and the degree of standardization of the transformation process. This dimensions are not directly dependent upon design choices made by managers, but to variables related to the very nature of the purpose of the organization (i.e. to the types of goods or services that are to be produced) and

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[1] Mills and Margulies (1980) distinguish *grand* typologies from *midrange* typologies; the former include all types of organizations, while the latter has its focus reduced to a partial set of that universe.

to the range of technologies available at any time. This has the advantage of avoiding the debate about the dependent or independent character of the technology variable (Gillespie and Mileti, 1977).

Perrow (1967) approached the integration of technology in organizations with a closed systems perspective, and at a task level of analysis:

> 'Organizations are seen primarily as systems for getting work done, for applying techniques to the problem of altering raw materials – whether the materials be people, symbols or things. This is in contrast to other perspectives which see organizations as, for example, cooperative systems, institutions, or decision-making systems' (Perrow, 1967: 195).

In his attempt to understand the relationship between technology and organizational structure, Perrow (1967) suggested a typology defined by the extent to which there are variations or exceptions to the standard work to be done, and the extent to which the search process of solving those exceptions is based on a logical and analytical basis. The combination of low task variability and standard analytical tools to deal with the exceptions produces "routine" processes. The opposite combination, i.e. high task variability and low systematic analyzability produces "non-routine" processes. The search for a solution must rely on non-formal abilities, such as experience, intuition, and even guesswork. The alternate combinations are also significant: both high task variability analyzability are typical of "engineering" type processes, and on the other hand, few exceptions to the standard work combined with few known tools to analyze those exceptions is characteristic of the crafts.

CHARACTERISTICS AND CLASSIFICATIONS OF SERVICES

Since these influential works, the academic thinking on the problem evolved within two different and apparently parallel universes of research.

One stream of research advanced the technology-structure conversation within the highly conceptual and theoretical perspective of the Organizational Theory field. Mills and Moberg (1982) provide a comprehensive summary of studies conducted along that line. Simultaneously, another stream of research seemed to have attempted to translate essentially the same subjects into more applied and functional perspectives. One of the best known attempts within the Operations Management field was the Hayes & Wheelwright (1979) process-product matrix, extensively used as the basis of subsequent development and understanding of manufacturing.

Curiously enough, both groups of academics faced a similar problem: the development of theories, conceptualizations, and practical implications about organizations was not perceived to have yet overcome their original manufacturing inspiration or dominance to include service organizations: 'Typologies of organizations have generally failed to address the special character of service organizations' (Mills and Margulies, 1980: 255).

In the Organizational Theory field, the problem can be illustrated by the conflict between Thompson's three structural levels when some kinds of service organizations are considered. A service employee performing within the technical core gets simultaneous exposition to the variability of the environment.

In the functional-oriented research, the consideration of services introduced two major challenges to their initially manufacturing-oriented body of knowledge. One was the debate on whether different management practices were needed for services-producing organizations; the other change was the acceptance of service management as an essentially multidisciplinary and cross-functional field, typically involving Operations Management, Marketing, and Human Resources (Bowen and Hallowell, 2002).

The argument developed so far leads the researcher to undertake a literature review on two related topics. The first topic will be described for the rest of the paper as "characteristics of services", or the "goods vs. services debate". Its concerns are the characteristics of services and their correspondent differences (and/or similarities) with goods, and the extent to which they had led to different (or similar) management practices. The second topic for review is the extensive number of models that have been developed to classify and understand services. Compared to manufacturing, a larger number of typologies have been proposed, but none of them have achieved sufficient degree of consensus to become predominant (Silvestro, Fitzgerald, Johnston and Voss, 1992).

More detailed questions to guide the review are formulated in the following section.

1.3 REVIEW QUESTIONS

The main academic fields that inform the review are defined, in broad terms, by the marketing and the operations management literature, and in a more specific view, by the subset that concentrates in services organizations. Minor contributions are also received from specific sections of general management and organizational theory literature.

The focus of this literature review is organized in two parts: (a) characteristics of services, and (b) classifications of services.

1.3.1 CHARACTERISTICS OF SERVICES

The review explores the characteristics of services and their implications in service management; the topic has commonly been addressed in the relevant literature in the form of a debate on the similarities and differences between goods and services, and by extension, between goods-producing organizations and services-delivering organizations.

Specific aspects of this debate, that the research will attempt to deal with, are:

- What kind of theoretical positions have been developed as an answer to that debate? Some authors argue that the differences merit completely different fields of study; some others claim that the existent knowledge is enough to tackle the variety.
- Which are the arguments that have been used by academics to defend each standpoint?
- What are the perspectives from which the subject has been covered?
- How do the positions and arguments differ within different functional fields?
- To what extent the knowledge in the topic has strong support in theory or has been empirically validated?

1.3.2 CLASSIFICATIONS OF SERVICES

All attempts to understand services by developing classifications, typologies, or taxonomies are reviewed. Most of the studies focus only in services, but some also include goods and develop more holistic schemas.

Particular questions within this topic are:

- What are the purposes, characteristics, and usefulness of each classification?
- What are the dimensions that have been used to classify services? Are the dimensions mostly contingency-based or are they based on managerial choices?
- To what extent the proposed models have strong support in theory or have been empirically validated?

- To what degree do the classifications are full typologies, i.e. are capable of integrating the production of both services and goods in a single holistic view of economic production?
- What is the level of analysis to which different classifications aimed at? Is it industries, organizations, or processes, or they can handle all of them with the same robustness?
- Are classifications function-predominant, e.g. for either marketing or operations management purpose or do they integrate both perspectives?

2 METHODOLOGY

2.1 SYSTEMATIC REVIEW

2.1.1 WHAT IS A SYSTEMATIC REVIEW OF THE LITERATURE?

PURPOSE OF A LITERATURE REVIEW

A literature review is 'the selection of available documents (both published and unpublished) on the topic, which contain information, ideas, data and evidence written from a particular standpoint to fulfil certain aims or express certain views on the nature of the topic and how it is to be investigated, and the effective evaluation of these documents relation to the research being proposed' (Hart, 1998: 13).

This review has three main objectives. The first one is to serve as a means for the researcher to gain a comprehensive understanding of the existing intellectual domain in the defined field of study, both regarding theoretical and methodological issues. This understanding includes establishing conceptual links within and across theories, and recognizing the methodological implications of different philosophical traditions present in the field of study. The second purpose is to thoroughly map the extent to which knowledge has been developed within the field, and to identify gaps that may be developed into further research questions. Finally, this literature review aims to become a contribution in itself: the product and thematic conclusions of the review should be valuable for researchers in the field; the considerations and conclusions regarding methodology may also be helpful for scholars willing to adopt a similar approach.

LITERATURE REVIEWS AND SYSTEMATIC REVIEWS

Literature reviews in management research have been widely criticized. The criticisms encompass a range of defects: many reviews tend to be purely narrative or descriptive; the report on the review methodology typically does not allow for replicability or transparency; there is no audit trail for the reviewer's decisions, procedures, and conclusions; and they usually do not acknowledge the bias introduced by the researcher in the selection of studies (Tranfield and Denyer, 2003).

In recent years, some academics have suggested that a more systematic approach should be used for reviewing literature. A systematic review is a scientific study that tries to answer a clear question by using explicit methods to find, critically appraise, describe, and synthesise, all in a comprehensive way, published and, if possible, unpublished work on a topic.

Tranfield and Denyer (2003) have recently contributed to the implementation of that approach, by suggesting a specific methodology for conducting a systematic review to be applied to management research. The methodology itself is inspired in the one developed by medical sciences researchers in the last decade, in an attempt to foster an evidence-based approach to practice (see for example Trinder, 2000). Other academics have also moved towards the same direction. Petticrew (2001) demystifies the apparent exclusiveness of the systematic review methods to the medical sciences, along with other myths related to the systematic reviews. Boaz et al. (2002) explore the extent to which systematic reviews appear to be valuable for a wide range of policy areas, and provide clear methodological guides for its execution.

A systematic review is no more than a 'method of locating, appraising, and synthesizing evidence' (Petticrew, 2001: 98). A systematic review starts with a clear question to be answered; it strives to locate all relevant published and unpublished studies; it involves an explicit description of the criteria that included studies should meet; examines the methods and quality of each considered research; and base its conclusions on studies that are most sound (Petticrew, 2001).

This literature review adopts the aforementioned process methodology (Tranfield and Denyer, 2003). A summary of the comprised stages is outlined in the table below; a detailed description of how each step was operationalized is provided in the following section.

REVIEW PROTOCOL

The systematic character of the review means that a replicable and transparent review process should be adopted, in order to keep the bias the researcher may introduce under control, and to provide audit capabilities to detect it. This character is provided by the use of a methodological protocol that serves as a guide and reference to the review process.

A protocol was defined and presented to an academic review panel before commencing the literature review (see Edelman, 2002). The protocol included the

roadmap and the criteria that had been set up by the researcher for conducting the review.

Planning the discovery and development aspects of the review tightly would compromise the researcher's creative abilities (Tranfield and Denyer, 2003). Therefore, the spirit of the protocol is to allow for the necessary flexibility whilst keeping the bias under control. The protocol stated the initial set of decisions and criteria; all modifications and alterations were properly documented as they unfolded.

Table 1: Stages of a systematic review process

STAGE	CONTENT
REVIEW PLAN	• Form review panel • Map the field of study • Produce a review protocol
IDENTIFICATION AND EVALUATION OF STUDIES	• Conduct a systematic search • Evaluate studies: selection and quality assessment
DATA EXTRACTION AND SYNTHESIS	• Data extraction • Data synthesis
REPORTING	• Report descriptive and thematic findings
USE THE FINDINGS[2]	• Inform research • Inform practice

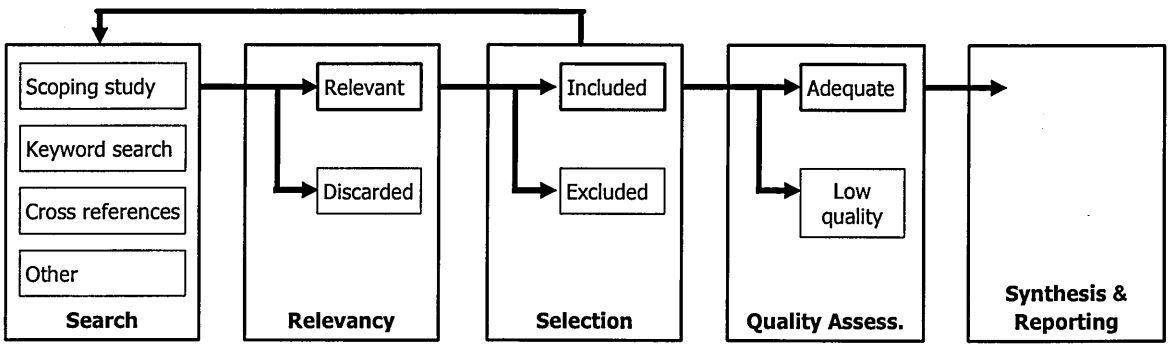
2.1.2 THE REVIEW PROCESS

An overall view of the process by which the review was conducted is graphically depicted below, with an emphasis in the flow of studies along the research project.

A brief outline of each component of the process is included; a more detailed description is provided in the following section.

[2] Given the nature of the present study – a Master's degree dissertation - the description of the process will not include the dissemination stage. The diffusion of the research beyond this dissertation might be for example in the form of further publications based on its conclusions.

Figure 1: Review process – flow of studies



- The first operational stage is a multiple-source search that produces a number of potentially relevant citations.
- For studies found by means of a keyword search, an immediate relevancy check is done examining some basic information: title, abstract, source, and author. The relevancy filter is needed because of deficiencies of the search phase in retrieving only relevant references.
- All relevant papers, regardless of their source, are studied and compared against a set of predefined selection criteria. This comparison results in papers included and papers excluded. The selection phase purpose is to assure that only papers within the intended scope of the review are considered.
- During the selection stage, papers are scanned for potentially valuable references, which in turn are located and fed back to the search stage as new studies to consider.
- Finally, papers to be included in the review are assessed in term of their quality. Studies that satisfy the quality criteria become then part of the synthesis and further report stages.

2.2 ELEMENTS OF THE REVIEW PROCESS

In this section the review process is described in detail, and the set of criteria and operational procedures utilized in each of the following stages is reported:

1. Review panel
2. Search strategy
3. Study selection
4. Study quality assessment
5. Data extraction
6. Process documentation
7. Analysis and synthesis

2.2.1 REVIEW PANEL

A formal panel was not set up for this review. However, the researcher individually consulted a group of persons throughout the process to provide advice and validation on both process and findings. The following persons were contacted:

Supervision	• Dr John Towriss (Cranfield University – CLSCM)
Bibliographic search and review process	• Dr David Denyer (Cranfield University – AMRC) • Mr Javier Marcos (Cranfield University – AMRC) • Mrs Heather Woodfield (Cranfield Information and Library Services)
Academics in the field	• Mr Graham Clark (Cranfield University – Operations Mgmt. Group) • Prof Simon Knox (Cranfield University – Marketing Group) • Prof Jaume Ribera (IESE Business School, Barcelona) • Dr Andrew White (Cranfield University – CLSCM) • Dr Mark Wilcox (Cranfield University – Operations Mgmt. Group)

Although there were no practitioners in this panel selection, a managerial perspective is present in the review, by having considered top managerial publications (see a complete list in Appendix D.)

2.2.2 SEARCH

The aim of the search stage is to identify all possible pieces of knowledge that may be valuable to the purpose of the review, within the limits imposed by the available resources, but offering a reasonable degree of confidence that no major source of

theoretical or empirical knowledge has been left out. In order to achieve this purpose, the search was performed combining the following sources and search methods:

- review of the set of studies obtained for the previous scoping stage
- keyword searches in selected electronic databases
- cross-references from selected studies
- panel recommendations
- selective browsing
- books[3]

The citations database includes an identification of the source of each included study.

PREVIOUS SCOPING STUDY

This literature review was preceded by a paper in which a broad set of topics within the Services Management field were identified, a justification for conducting this review was developed, and a guiding protocol was presented (Edelman, 2002). That scoping study was informed by an extensive compilation of bibliographic citations – more than 300. The studies were located through a rather intuitive and informal search process, driven by an exploratory purpose. However, it was the researcher's perception – later confirmed (see Study Results below) – that altogether they provide a wide coverage of the field. Therefore, this set of studies was examined under the selection criteria.

KEYWORD SEARCH

The keyword search is the most systematic element of the search strategy. The rationale of this type of search is based in the identification of a finite set of key terms and expressions – keywords – that represent the core and shades of the field to be reviewed with the maximum possible accuracy. Having concentrated the scope of the field in that group of keywords, it is expected then that the electronic search engines will return all and only the relevant studies.

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[3] Books are not an actual source of studies in the same sense as the previous in the list, but a particular type of study. However, it is worth to briefly explain the reviewer's decisions regarding the inclusion of books in this review.

In order to produce that list of keywords, the map of the field and a selected number of supporting papers were analytically examined in search of the terms and expressions that better characterized the subjects and debates in the field. Missed subjects were minimized by thoroughly reviewing the map of the field and loss of meaning or misrepresentation was minimized by keeping the same wording cited by the original studies in annotating keywords.

Individual keywords were combined into search strings. The use of search strings reduces the total number of searches to perform, and provides more focused results by looking at the intersection of overlapping concepts. The following tables display the search strings utilized for each review topic. The last column indicates that the search required a restrictive string (see below).

Table 2: Search strings for review topic 1 – Goods vs. Services debate

SEARCH STRING	NOT
services vs. goods	
services AND (goods OR products) AND (compar* OR differen* OR similar* OR debate)	(1)(2)
tangibles AND intangibles	(1)
services goods	

Table 3: Search strings for review topic 2 – Classifications of services

SEARCH STRING	NOT
service* AND typolog*	(1)
service* AND taxonom*	(1)
service* AND (matrix OR matrices)	(1)
service* AND classification*	(1)(2)

Two electronic databases were initially selected for conducting the keyword search: EBSCO Business Source Premier, which claims to be the largest full text business database, covering 3,300 scholarly business journals, and full text for more than 300 of the top scholarly journals dating as far back as 1922, and ABI/Inform Global through the ProQuest server, which holds 1,800 worldwide periodicals of business and management. Search strings were logged sequentially into these databases, first in EBSCO and secondly in ABI/Inform; a simple analysis demonstrated that the rate at which new studies were identified significantly decreased for the second database (see

Appendix E. for details), therefore suggesting that the contribution of adding a further database would not be worthy.

The results for each search – as combinations of search string and database - were scanned for relevance, considering title and abstract. This relevance check attempted to correct failures of the combination of search string - search engine in producing relevant results. The total number of studies retrieved was recorded for checking the efficiency of the search event. A complete report on the hits resulted from each combination of search string and database is included in Appendix E.

Whenever a search resulted in a non-manageable number of references (more than 200), restrictive refinements were made. Firstly by requiring the "search engine" to look only for peer reviewed publications. When this was not enough, the original search strings were combined with other search strings or an additional restrictive clause was included. The following table reports on the "and not" strings that were used in each database, in combination with the search strings indicated in Table 2 and Table 3 (above). While it is acknowledged that this restriction may have led the review to miss potentially valuable studies, it turned out to be essential to make the review achievable with the available resources.

Table 4: Restrictive strings

#	DATABASE	"AND NOT" STRING
(1)	ABI ProQuest	cpa OR intellect? OR financ? OR economic? OR polic? OR comput? OR health OR network OR internet; within 3
(2)	EBSCO	medical OR web OR public OR economics OR network OR regulat* OR deregulat* OR politic* OR account* OR architectur* OR government OR reform OR tax OR audit* OR comput*

CROSS REFERENCES

All papers under review were scanned for relevant citations not yet found by means of other sources. The resulting references were located and included in the set of studies to be examined for selection.

PANEL RECOMMENDATIONS AND CASUAL FINDINGS

Literature recommendations given by members of the review panel included in the set of studies. Casual findings – those which are not a product of any specific search effort, e.g. browsing recent issues of academic journals - were also classified under this heading.

SELECTIVE BROWSING

In order to improve the efficacy of the search strategy, certain potentially valuable sources of studies were added to the process. Some of them provide access to studies that are typically not included in electronic databases or are rarely cited in published work, or in fact contain unpublished work. Other sources were selected because of their particular relevance with the topic of review and to overcome latent shortcomings of the keyword search. The inclusion of some sources was somewhat circumstantial, for example having attended a conference by the time the research was being performed.

In any case, these sources were scanned in search of relevant documents – some of them physically, some others electronically. The following list displays each individual source, and the nature and scope of the scanning.

SOURCE	**SCOPE**
Cranfield Working Papers Series	Complete range
Warwick Working Papers	Complete range
Kings Norton Library, Cranfield University	Shelves under "services marketing", "service operations", and "service management": 658:3, 658.3, 658.5, 658.8
EUROMA POMS 2003 Conference, Lake Como, Italy	The researcher attended sessions in the "Services Operations" track. The "Services Operations" chapter of the written proceedings was scanned in search for relevant papers
POMS 2003 Conference: "POM in the Service Economy", Savannah, USA	Reviewed proceedings
Academy of Management 2001	Reviewed proceedings
Academy of Management 2002	Reviewed proceedings
Harvard Business Review	Electronic catalog – Harvard Business Online, search for term "service" and "Harvard Business Review"
California Management Review	Electronic index, volumes 1-43 (1958-2001), search for term "service"
Sloan Management Review	Reprint catalog, sections "Service and Quality" and "Operations Management"

BOOKS

In terms of conducting a systematic literature review, books have particular characteristics that make their management different.

- The search for books containing discussions of specifically defined topics is not as accurate as for published papers. Electronic databases do not typically include them, apart from published book reviews. The thematic search in electronic library catalogs is usually too broad to be useful.
- Compared to the vast majority of academic papers – which can be managed electronically, books are fairly less portable, and therefore, more expensive to get.
- Books generally deploy ample approaches to a subject; hence locating sections with potential contributions can be very time-consuming. And in many cases, authors have explored similar concepts in other academic publications, namely journals.

For these reasons, this study will not make any significant nor systematic effort for locating and reviewing books. Nevertheless, they are neither excluded. Some books have been identified, reviewed, and their contributions included in the review. For simplicity of the report, these were not included along with the studies coming from other sources.

2.2.3 STUDY SELECTION

The purpose of the study selection stage is to discriminate between the studies that have merit to be included in the review and the studies that are non-relevant in terms of the scope of review. The inclusion/exclusion decisions were made by using a set of pre-defined criteria, in order to minimize subjective judgement, and to provide transparency to the selection process.

Three sets of selection criteria were used; the tables below enumerate the criteria in each set:

- A general list of inclusion criteria, that provides an overall description of the type of studies looked for
- A detailed set of exclusion criteria, that explicates all the conditions and characteristics that would result in a study being excluded from this review
- A specific set of inclusion and exclusion criteria contingent to the topic of the review, that gives content-related decision rules to complement the general selection criteria

GENERAL INCLUSION CRITERIA

Table 5: General inclusion criteria

#	CRITERIA	REASONS FOR INCLUSION
N	Sources: academic papers in indexed journals, academic conference proceedings, unpublished working papers	These are the major sources of relevant management research
N	All sectors may be included if they comply with other criteria	The stated purpose of the review is not sector or context specific
N	No restrictions regarding geographies or populations, if they comply with other criteria	The stated purpose of the review is not focused on a particular geography or population
N	Theoretical and empirical studies, either qualitative or quantitative papers, any type of research design	Research in the field has been achieved by all approaches in a complementary way
N	No restrictions regarding timeframe	The field started to develop around the 1970s, but some earlier studies may be useful, especially in the organization theory literature

GENERAL EXCLUSION CRITERIA

Table 6: General exclusion criteria

#	CRITERIA	REASONS FOR EXCLUSION
X0	Non-relevant / out of scope	The paper may mention the subject/keywords, but is not the main subject of the study, or the approach it's not relevant to the field of study (e.g. psychological aspects related to the service encounter, such as emotions, cognition, mood, that do not build to the service encounter grand theory from a delivery perspective)
X1	Technical-exclusive approaches to operations management	The focus of the review is on broader management practices, not on specific technical developments within the field (e.g. computations of queues)

#	CRITERIA	REASONS FOR EXCLUSION
X2	Technical-exclusive appreaches to marketing	The focus of the review is on broader management practices, not on specific technical developments within the field (e.g. "the influence of muzak in retail stores on consumer behaviour", or "the differences in advertising services and goods")
X3	Studies published in sector-oriented publications aimed at extremely sector-specific audiences, or published in commercial or industry oriented publications. Anecdotal nature.	Lack of a broader and generalisable approach to services, and usually limited to disseminating a general topic within a particular/specific context Limit the scope of the search results: many of the keywords are very popular in these kinds of publication (e.g. Telephony, Frontiers of Health Service Management, etc.)
X4	Studies too engaged in a specific context	Lack of a broader and generalisable approach to services, and usually limited to disseminating a general topic within a particular/specific context (e.g. "the value of IT in healthcare intensive units", or "standards in web services management")
X6	All studies or publications in any language other than English or Spanish	English and Spanish can be managed fluently by the researcher

THEMATIC SELECTION CRITERIA

Review topic 1: Characteristics of services

Table 7: Thematic exclusion criteria - Characteristics of services

INCLUDE	EXCLUDE
• Differences in the nature of services and goods • Managerial implications of these differences • Differences in the management of functional disciplines (marketing and operations) of goods and services producing processes or organizations	• Differences in the way "services" and "goods" organizations are managed, but with the focus on specific aspects of management (e.g. salesmen training, advertising, planning. • Differences regarding performance of manufacturing and services organizations: productivity, profitability, loyalty, etc • Discussions rooted in the economics field, unless cited by included studies, or obviously relevant to the scope of the review

Review topic 2: Classifications of services

Table 8: Thematic exclusion criteria - Classification of services

INCLUDE	EXCLUDE
• Product and goods manufacturing or operations typologies (e.g. the product-process matrix), to the extent that provide concepts potentially generalizable to the goods-services continuum.	• Discussions rooted in the economics field, unless cited by included studies, or obviously relevant to the scope of the review • Classifications purely based on Organizational Theory, unless explicitly related to the services field

2.2.4 STUDY QUALITY ASSESSMENT

The quality of all studies that met the inclusion criteria was assessed. The purpose of this evaluation is to establish a weight for each paper's contribution to the review findings. There is no claim about the objectivity of the evaluation, since it relies on the subjective judgment of the researcher. However, this practice provides transparency to the review process, giving an explicit account of the researchers' judgement and the extent to which each paper influenced his discovery of findings.

In order to produce the dimensions for assessment, a comparison was made of the quality requirement some academic journals suggest to their reviewers: Academy of Management Journal, Academy of Management Review, Administrative Science Quarterly, Journal of Operations and Production Management, and Journal of Occupational and Organizational Psychology.

Since the purpose of a literature review is not to select papers for publication, but to map and assess the existing intellectual territory in the field and to identify potential research gaps, the quality requirements are slightly different. Therefore an adaptation of those was made to the rationale of the review.

The first aspect to look at is the quality or robustness of the theory. This dimension indicates the existence of good quality "raw data" to be reviewed and synthesized. Then two dimensions are needed to characterize the process by which that theory is understood and used to produce new knowledge: the degree to which the referenced literature appears to be comprehensive, and the research methods used. And two final dimensions to appraise the outcome of that study: the impact of its contribution, and its degree of generalizability. Effort has been put into keeping the number of

dimensions low and their definition simple, so as to avoid a "collinearity" effect in the judgemental evaluation by the researcher.

The criteria by which the quality of each study was evaluated are displayed below. A three point nominal scale was used:

- A low (1) assessment represents a very poor or low valuation; the defined criteria are not present, or they are poorly formulated or supported, or unclear.
- A moderate (2) assessment indicates a basic to moderate response to the criteria; minor problems or omissions, but an overall complying.
- A good (3) assessment identifies a very good, solid and clear response to the criteria.
- Non applicability of the dimension was documented by a score of 0 (the methodology dimension in a theoretical paper)

Table 9: Study quality assessment criteria

CRITERIA	DESCRIPTION
THEORY	Degree to which: • the study has a well-articulated theory that provides conceptual insight and guides hypothesis formulation; • the study informs or improve the understanding of that theory; • the concepts are clearly defined; • and the core ideas are original, important and provocative.
LITERATURE	Degree to which the study: • cites the appropriate bodies of literature; • and discusses the relevant literature in a complete and accurate way.
METHODOLOGY	Degree to which the methodology used in the study: • is consistent with the research question and the relevant theory (epistemological integrity); • is rigorous and reliable so as to ensure internal and external validity; • and enables the data to support the arguments.

CRITERIA	DESCRIPTION
CONTRIBUTION	Degree to which the paper makes a new and meaningful contribution to the management literature in: • theory, • empirical knowledge, • and management practice.
GENERALISABILITY	Degree to which the study claims its conclusions to be generalisable, and that generalizability is supported: • by the evidence presented, • and by the research design and methodology (e.g. higher ranks in a hierarchy of evidence – systematic reviews or meta-analyses - are more generalisable than lower ranks – anecdotal evidence).

2.2.5 DATA EXTRACTION

The data extraction stage consists of recording a set of data from each study to facilitate the following stages of synthesis and reporting. The data extracted from each study is such that allows both descriptive and content analysis. It includes the bibliographic information, the characteristics of each study, the results of the quality assessment, a conceptual summary of the paper, and potentially useful quotes. Each record can be then used as a proxy document for the original paper. All data was stored in a ProCite 5 database. A complete list of the database's record fields is shown in Appendix A.

2.2.6 PROCESS DOCUMENTATION

All data related to the stages of searching, compiling, and selecting studies was documented in Excel spreadsheets and in ProCite databases.

A research diary was kept for the record of unforeseen circumstances, ongoing modifications to and deviations from the protocol, justification of choices, and potential sources of bias. The relevant content of the resulting diary has been incorporated into this thesis.

2.2.7 ANALYSIS AND SYNTHESIS

Analysis is the job of systematically breaking down something into its constituent parts and describing how they relate to each other. The aim is to extract key ideas, theories, concepts and methodological assumptions from the literature.

The methods for analysis and synthesis were chosen considering the overall characteristics of typical research in the field, as informed by a previous scoping study. There appears to be at least as many theoretical papers as empirical papers, therefore the approach should be flexible enough as to compare both types of papers. Empirical papers seem to be mostly quantitative, but the variety of subjects researched in empirical papers is such that would inhibit any kind of meta-analysis.

An inductive content analysis approach was used to elaborate the findings and to prepare the synthesis. The whole process is basically organized in two relatively sequential steps. The first step is *document-centred*: every individual study is scanned in search of themes, concepts, theories, and other elements relevant to the research questions. All references are coded according to an initial analytical framework, which is presented in Appendix B. After having reviewed all papers, the second stage is meant to investigate the coding structure and look at the occurrence of concepts *across* documents. By doing so, the researcher proposes relationships, develops comparisons, and uncovers hidden analogies, antagonisms, or whatever kind of association between ideas that proves useful for a better understanding of the field. The resulting coding framework is presented in Appendix C.

The amount and complexity of the data to be managed is considerable; a dozen codes per document times almost a hundred documents produces a quite vast set of pieces of analysis to be put together. A qualitative analysis tool – the NVIVO 2.0 software – was used to support both the documentation requirements and the analysis and synthesis process. The software has the ability of easily attaching codes and notes to any paragraph, sentence, or even word of a document, in a "post-it notes" style. The best contribution is that it lets the researcher "play" with the notes to build a conceptually meaningful structure, by rearranging concepts and creating higher order codes, while retaining complete traceability for each note or concept to the original document that generated it.

The result is a synthesis of concepts and arguments built upon a combination of an initial analytic framework and the contributions of each paper. This allows the researcher to produce a thematic review, as opposed to a collection of summaries of

each individual participating study. This approach brings together findings or arguments from different sources and attempts to produce a unique new arrangement of the knowledge involved, in a way that constitutes a contribution.

For practical reasons, proxy documents to the original papers were considered as raw data in terms of the analysis. The proxy documents contained a combination of summarized arguments and literal selected quotes from the text. While it is acknowledged that the production of these proxies may have been influenced by the researcher's bias, they seem to offer the better balance between feasibility and rigour. In any case, a review is based in discretionary selection of paragraphs and quotes.

2.3 STUDY RESULTS

In this section the overall results of the search, selection, and quality assessment stages are described, with an emphasis in the flow of studies along the process.

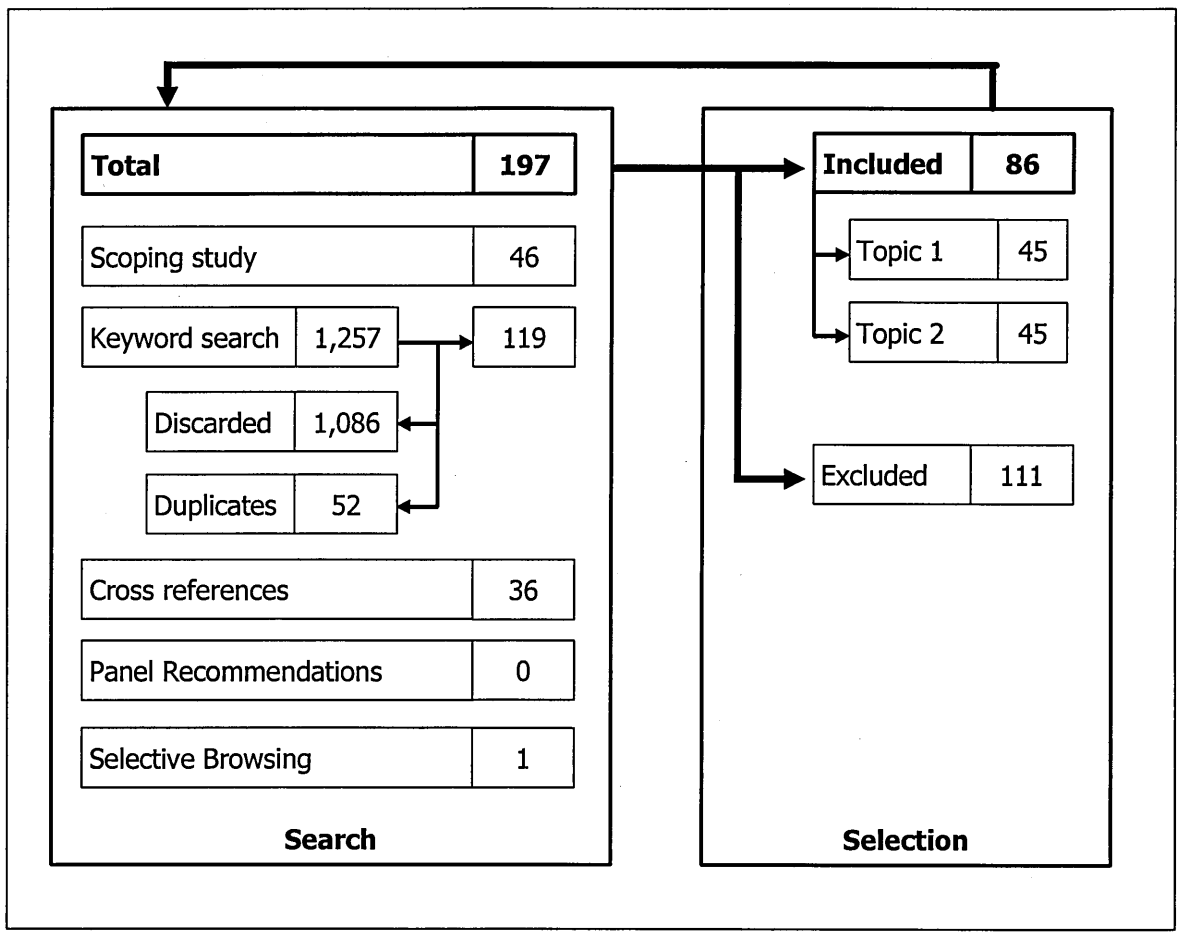
Two different but related topics were considered for review:

- Topic 1: Services vs. Goods debate
- Topic 2: Classifications of services

Both subjects are conceptually related. Therefore, in the following diagram the flow of both groups of studies are considered altogether. The keyword search yielded more than 1,000 results, from which 119 were relevant and unique. Other sources added for a total of 197 studies examined, of which 86 were finally included.

Coincidentally, each topic – the goods vs. services debate and the characteristics of services and classifications of services – resulted with 45 included papers. A few papers participate in both topics; in order to maintain each review's integrity they are included in both. Therefore, the total number of unique included papers is 86.

Figure 2: Overall results – flow of studies through search and selection

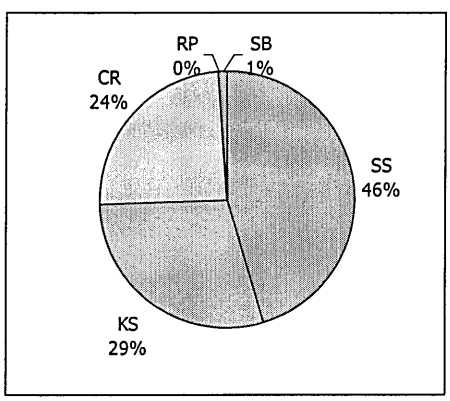


The figures breakdown for each review topic and source are included in Appendix D.

SOURCES

The contribution of each source in terms of number of studies finally selected was slightly different for the two review topics.

Figure 3: Distribution of total selected papers per source



In average, about 46% was already included in the original scoping study (SS); 29% resulted from the keyword search (KS); and the rest was the result of cross-references (CR), panel recommendations (PR), and selective browsing (SB).

KEYWORD SEARCH

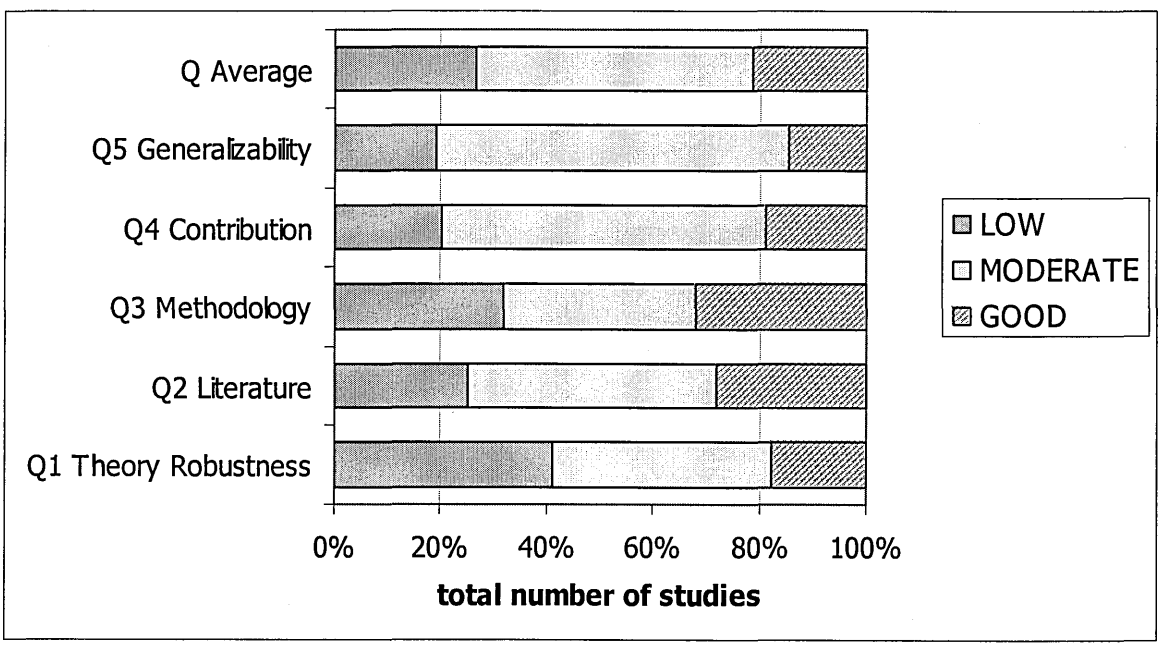
The keyword search produced uneven results for both review topics, in terms of identifying new studies. For the "goods vs. services debate", more than 75% of the relevant and finally included papers were unique contributions to the final set. However, for the "classifications of services" topic, most of the papers found through the keyword search had already been identified with the initial scoping study, and only 10% of the relevant hits were new contributions. Overall, almost one half of the selected studies originally found through keyword search were new, and accounted for almost one third of the total amount of papers.

The efficiency of the search strings resulted different depending on the database. The detailed tables used for recording hits are included in Appendix E.

QUALITY ASSESSMENT

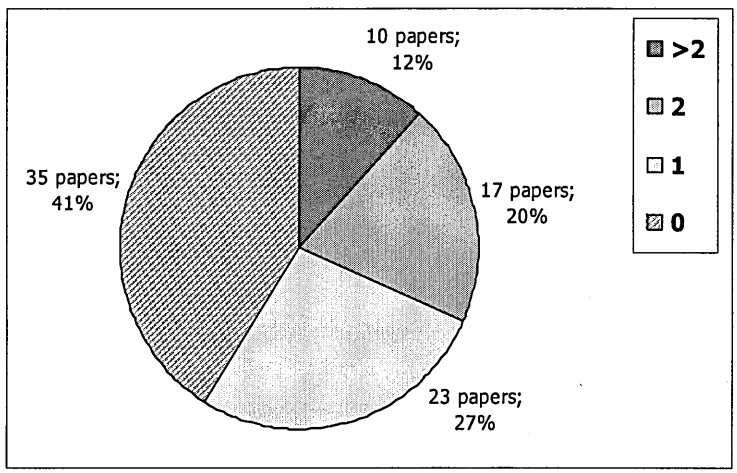
The quality assessment resulted in a reasonably balanced combination of poor, moderate, and good scores. Considering an average of all five dimensions, half of the revised papers were evaluated in a moderate level; and the other half was almost evenly split between low and good scores. The following graphic displays the distribution of the quality assessment scores for each dimension. Only applicable scores were considered (e.g. purely theoretical papers were not evaluated for methodology).

Figure 4: Distribution of quality assessment scores



In order to assess the overall quality assessment of individual studies, rather than calculating an average, whose meaning would be difficult to justify, a distribution of studies according to the count of low scores (scores of 1) is presented. Studies with more than two dimensions scored at the lowest are probably not making major contributions to the findings; this group represented 12% of the total set of selected papers. Studies with up to two dimensions poorly assessed can be considered to have been moderately evaluated; this group accounted for 20% of the set. The ample majority of studies (68%) resulted with one or none dimensions scored at the lowest value, which means that they are strong contributors to the review findings. The distribution is graphically represented below.

Figure 5: Distribution of studies according to count of low scored dimensions



Note:

Each slice represents the number of papers distributed according to the number of low scored dimensions (more than 2, up to 2, up to 1, none)

2.4 DISCUSSION

In this section the researcher evaluates some methodological aspects of the study. The first part reports on the protocol's performance. Having established a review protocol, it is appropriate to assess the extent to which it turned out to be effective, by documenting the modifications that were needed implement to successfully complete the research. In the second part the planning and actual use of resources is discussed.

Data for writing this section was gathered from a review diary, in which the researcher periodically documented refined criteria, process modifications, and personal insights. The diary was organized chronologically and with a thematic index.

2.4.1 ALTERATIONS OF THE PROTOCOL

REVIEW PLAN

The original research question that gave birth to this study was much broader before actually commencing the review. The researcher had outlined half a dozen topics that were derived from that initial scope definition, and attempted to produce a systematic literature review in each. The original list of areas, as presented in the original proposal, has been reorganized and summarized in the following table:

Table 10: Original areas for review

REVIEW AREA	TOPICS INCLUDED
The nature of services	• Goods vs. services debate • Classifications of services • Management of service operations
Service quality and customer satisfaction	• Utility received by customers • Measurement of the utility received by customers
Relationships with the business cycle	• Models for profitability in services • Relationships between service quality, customer satisfaction, and business performance
Service design	• The impact of the use of technology in the enhancement of the service encounter

This scope was broad in excess from what was expected from this research, as the panel has predicted. However, the researcher embarked into the search stage having decided only to half the original scope. Only when faced with the evidence of the number of studies to be examined, was that the researcher further trimmed the scope its actual size, which corresponds approximately to one sixth of the initially intended span.

SEARCH

The use of restrictive clauses ("and not" condition) was developed as a response to the non-manageable size of some of the result sets.

SELECTION

The planned generic selection criteria required to be supplemented by topic-specific inclusion and exclusion criteria, for the selection stage to work out properly. Defining

effective additional conditions was only possible after being well familiarized with the search results.

DATA EXTRACTION AND DOCUMENTATION

Since the very start of the search stage all intermediate results were documented. The amount and variety of process data that was generated had not been completely foreseen; therefore some minor additional refinements to the spreadsheets and database forms had to be made.

Some other procedures and auxiliary tools had to be developed to overcome deficiencies of the integration between electronic databases and the ProCite database. Other unforeseen circumstances had to be solved, for example, how to keep record of papers identified by more than one source, or how to register exclusions without loosing track of the record.

QUALITY ASSESSMENT

The protocol has originally suggested that a quality threshold would exclude studies that had more than half of the dimensions scored below the average. However, it was decided that no quality threshold was set, for the following reasons:

- A quality exclusion criteria based on an average score does not make sense, if the that average is conceptually difficult to justify
- Different types of studies are being compared - theoretical, empirical, and managerial oriented papers - and it would not make sense to try to measure them with the same rule
- Studies have also different roles within the field: some propose new approaches that attempt to extend the limits of knowledge; others provide empirical validity to those propositions; still others extend or apply existing knowledge to different settings; some others are dedicated to explain the managerial implications of a particular set of theoretical knowledge. By no means is the quality assessment tool developed in the protocol capable of dealing with this variety for exclusion purposes
- The nature of the knowledge contributed by each paper is very different. Some contribute with a whole new perspective, some others with refining a tool or an operational definition, some do by just adding anecdotal evidence or powerfully illustrated arguments.

Instead of using the quality judgement for setting a quality filter, it is considered in the synthesis stage, by weighting each study's contribution to the research findings by their overall assessment.

ANALYSIS AND SYNTHESIS

From a methodological perspective, this stage was the one that allowed for less detailed planning, and therefore for more ongoing adaptation.

- The initial analytical framework suffered modifications as soon as the data started to inform the coding structure. Some branches resulted meaningless, and new branches had to be developed.
- The changes in the coding framework forced the researcher to review some papers more than once.
- The original notes for each original document that were used as proxy document showed some deficiencies that had to be fixed throughout the research project.
- The analysis of the papers – the qualitative coding – was undertaken using a chronological sequence. This provided the researcher with a logical and evolutionary approach to understanding the field.

2.4.2 USE OF RESOURCES AND PROJECT TIMETABLE

Eighteen weeks were scheduled for executing the review project.

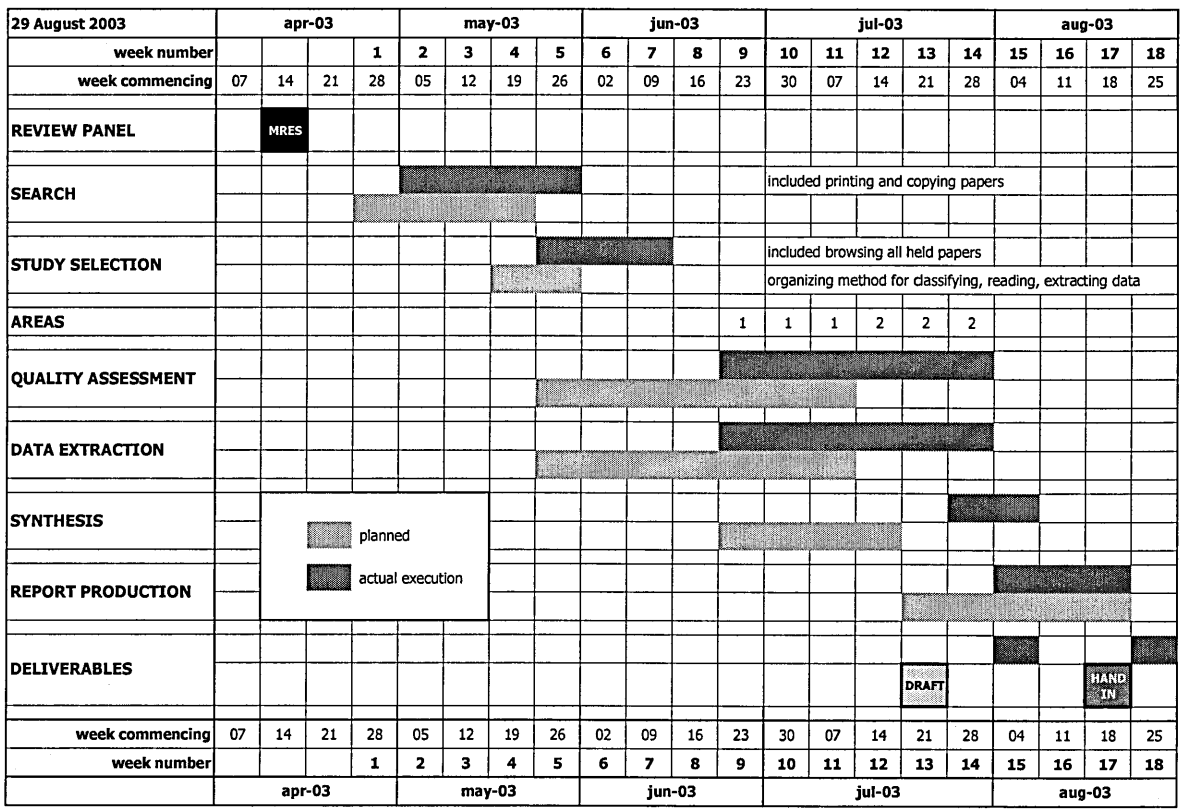
The main alterations in the planned schedule were:

- The search stage took slightly longer than expected, but it did not introduce a significant variance to the project schedule.
- The relevancy check and the selection phase required in many cases obtaining the full paper for assessment. The administrative task of locating, downloading, printing, and copying documents had been under-estimated in the original plan. Many papers demanded inter-library loans, which added additional delays to the process.
- A whole set of methods and criteria for classifying, recording, and organizing data had to be developed; it was not a one-off effort, but it suffered continuous improvements along with the progress of the project. The process had to support two types of data: (a) content data about the studies, and (b) process data to provide traceability and transparency about the review methods.

- The careful reading of studies towards the selection, extraction of data, and quality assessment, was underestimated. The reading stage for two thematic areas, which at the end produced about thirty selected papers each, took no less than six weeks. The original plan was to review at least two more subjects, i.e. twice as many studies.
- The synthesis stage had to be undertaken in a tighter schedule; nevertheless, the systematic collection of data that had been done during the previous stage balanced the scarcity of time without affecting the quality and depth of the final product.

The figure below shows the planned and the actual project schedule.

Figure 6: Planned and actual project schedule



3 FINDINGS

3.1 INTRODUCTION

This chapter is structured into three parts. To begin with, the two sets of included studies will be briefly described, in terms of the overall characteristics of each paper. This descriptive analysis constitutes a finding by itself, by contributing to the understanding of the existent research in the topic, and prepares the grounds in which the subsequent thematic analysis is undertaken. The second section involves a detailed examination of the key ideas, theories, arguments, and assumptions contained in those papers, and attempting to understand the ways in which they relate to each other. Finally, existent knowledge about the topic will be synthesized; the major questions to be answered in this part are: What do we know about the subject? And what is not known yet?

The two topics under review, the goods vs. services debate, and the classifications of services, will be examined sequentially in each section. Since both topics are intimately related, this approach attempts to expose relationships and commonalities between groups. For practical purposes, some of the data are presented aggregated for both topics.

3.2 DESCRIPTIVE ANALYSIS

3.2.1 INCLUDED STUDIES

A complete list of the included studies, together with some basic descriptive information, is presented in Appendix F. for the characteristics of services topic and in Appendix B. for the classifications of services topic.

3.2.2 DESCRIPTIVE STATISTICS

In this section both sets of included studies are described in terms of their general characteristics. The two sets are quite similar; the descriptive statistics for each group are detailed below in Table 11.

STUDIES

Approximately two thirds of the papers addressed the review topics as their main issue; the other third made contributions to the topic secondarily. The first papers addressing the topics were published early in the 1970's; almost one half of the papers are from the 1980's, and a slightly lower portion in the 1990's. Both review subjects have papers published in the last few years. The majority of papers are journal articles; however, in the characteristics of services topic, almost one fifth of the studies are book chapters.

Most of the papers have a purely theoretical character; overall, about 20% report empirical research or include some kind of empirical evidence. And a smaller group is directed towards practitioners.

Table 11: Descriptive characteristics of included papers

Descriptive characteristic	Characteristics of services	Classifications of services
Total number of studies included	45	45
The paper addresses the review topic as a main issue	30	31
The paper refers to the review topic secondarily	15	14
Historical distribution of studies		
Before 1980	22%	16%
Between 1980 and 1989	40%	49%
Between 1990 and 1999	33%	27%
After 2000	4%	9%
Type of paper		
Journal article	82%	84%
Book chapter	18%	11%
Other (books, conference papers, working papers)	0%	1%
Character of the paper		
The approach is essentially theoretical	56%	68%
The paper is based or supported on empirical evidence	24%	19%
The paper is managerial-oriented	20%	13%
Knowledge domain in which the paper is grounded		
Marketing / services marketing	78%	24%
Operations management / service operations	9%	60%
General Mgmt. / Economics / Organizational theory	13%	16%

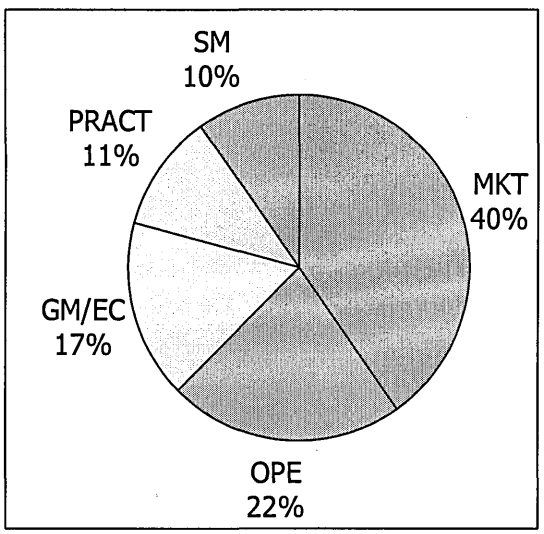
In terms of the knowledge domain in which the paper is grounded, the difference between both review topics is more apparent. The bulk of papers about characteristics

of services have been written by marketing scholars (78%); only a minor part of the set has an operations management perspective or a more general perspective (organizational theory, economics, or general management). Instead, the literature about classifications of services has been dominated by an operation management perspective (60%), almost one quarter has been written from a marketing perspective, and the rest from an organizational theory perspective.

JOURNALS

All journal articles correspond to 33 different journals. Almost two thirds of the papers were found in journals related to Marketing (40%) or to Operations Management (22%). The rest is split between publications on General or Strategic Management and Economics (17%), managerial oriented publications (11%), and specific journals in the service industry (10%). A full list of the journals involved is presented in Appendix D.

Figure 7: Distribution of journal articles per journal area



MKT	Marketing
OPE	Operations Management
GM/EC	General Mgmt. & Economics
PRACT	Managerial oriented
SM	Service Management

3.3 THEMATIC ANALYSIS: CHARACTERISTICS OF SERVICES

The following analysis presents the themes and patterns that have been identified in the set of included papers correspondent to characteristics of services. The section starts with a short characterization of the set regarding the paper's level of analysis. Some definitions of goods are provided preceding a discussion on the definitions of services. Then the main theoretical positions on the goods vs. services debate are reviewed. Finally, the arguments and dimensions that have been used to sustain each position are examined.

3.3.1 LEVEL OF ANALYSIS

Papers approach the subject at different levels of analysis, and they usually combine more than one. Most of the papers (70%) set the debate at the product level of analysis, i.e. the differences in the nature of goods and services. Almost half of the papers (44%) focus on the characteristics of processes affected by the differences in goods and services; almost without exception, they refer to marketing processes. Finally, a small number of papers (11%) provide a broader view on the problem, taking the whole organization as their level of analysis.

Table 12: Level of analysis of studies on characteristics of services

DOCUMENT	Product	Process	Organiz.
Ahtola, 1985	●		
Berry, 1980	●	●	
Berry, 1986		●	
Bowen and Ford, 2002		●	●
Bowen, Siehl and Schneider, 1989	●		
Darby and Karni, 1973			●
Dholakia and Venkatraman, 1993	●		
Enis and Roering, 1981	●		
Flipo, 1988	●	●	
Foxall, 1984	●		
Gronroos, 1998	●		
Gummesson, 1995	●	●	
Hartman and Lindgren, 1993	●		
Hill, 1977	●		
Hill, 1999	●		
Iacobucci, 1992	●		
Iacobucci, 1996		●	
Jackson and Cooper, 1988		●	
Jackson, Neidell and Lunsford, 1995	●		
Johns, 1999	●		
Johnson and Nilsson, 2003	●		
Johnston, 1993		●	
Judd, 1964	●		
Judd, 1968			●
Langford and Cosenza, 1998	●	●	
Levitt, 1981	●	●	

DOCUMENT	Product	Process	Organiz.
Lockyer, 1986			
Lovelock, 1981	●	●	
Lovelock, Langeard, Bateson, and Eiglier, 1981			●
Middleton, 1983	●		●
Murray and Schlacter, 1990	●		
Onkvisit and Shaw, 1991	●	●	
Parasuraman and Varadarajan, 1988		●	
Rathmell, 1966	●		
Rushton and Carson, 1989	●	●	
Sasser, 1976	●	●	
Shostack, 1977	●	●	
Thomas, 1978		●	●
Uhl and Upah, 1983	●	●	
Venkatraman and Dholakia, 1997	●		
Weinberger and Brown, 1977			
Williams and Mowen, 1990	●	●	
Wyckham, Fitzroy and Mandry, 1975			
Zeithaml, 1981	●		
Zeithaml, Parasuraman and Berry, 1985		●	

3.3.2 DEFINITION OF GOODS

Since the earliest definitional works on services departed from a comparison with goods, it is appropriate to cite the fundamental characteristics that define goods. A classic and yet simple definition was provided by Hill (1977):

> 'A good may be defined as a physical object which is appropriable and, therefore, transferable between economic units' (Hill, 1977: 317)

This conceptualization involves a physical dimension and the possibility of establishing ownership rights; therefore they can be exchanged and tradable.

Goods are distinct entities which are separate from their producers or owners; the production and trading of goods are two completely separate activities. They can be carried out at different locations and at different times; they can be consumed or used long after they are produced.

A contemporaneous and revised version by the same Hill (1999) removed the physical dimension to accommodate intangible goods, such as original creations of authors, composers, software writers, and so on:

> 'A good is an entity over which ownership rights may be established and from which its owner derives some economic benefit' (Hill, 1999: 437)

Whether tangible or intangible, goods share the same characteristics: the entire output from a goods-production process is owned by the producer, and the use or disposal of a good by its producer is a separate activity from its production (Hill, 1999).

3.3.3 DEFINITIONS OF SERVICES

Three main types of definitions have been identified in the literature to define services, each using different structure and argument: intangibility and absence of ownership, service as performances and processes, and service as change.

INTANGIBILITY AND ABSENCE OF OWNERSHIP

The first group describes services as tasks or activities and places emphasis on two characteristics, intangibility and the absence of ownership. Consider the following example:

> 'A service is any activity or benefit that one party can offer to another that is essentially intangible and does not result in the ownership of anything. Its production may or may not be tied to a physical product.' (Kotler (1984) cited in Ahtola, 1985: 91)

Curiously enough, the earliest attempt picked by this review is a more primitive definition - since it defines by excluding or negating goods - but does not mention intangibility as a characteristic of services:

> 'A service is a market transaction by an enterprise or entrepreneur where the object of the market transaction is other than the transfer of ownership (and title, if any) of a tangible commodity' (Judd, 1964: 59)

It seems that somewhere in the following development of theory, the notion of excluding of tangible commodities has evolved to attributing intangibility to services. Other definitions of the same style were provided by Uhl and Upah(1983: 236), and several other reviewed by Bowen and Ford (2002).

SERVICE AS PERFORMANCES AND PROCESSES

A second strand of definitions identified a more dynamic and "theatrical" dimension of services:

> '...a good is a noun and a service a verb; a good is a thing, an object, an article, a device; and a service is an act, a deed, a performance, or an effort' (Rathmell, 1966: 33)

Berry (1986: 47) and Lovelock (2000: 3) constitute other examples of the same approach.

Gronroos (1998) also perceives a dynamic nature of services, but focuses on a more operational perspective. In his view, services are processes, and the consumption of a service by a customer implies both outcome and process consumption.

SERVICE AS CHANGE

A very interesting approach, which apparently solves some of the conflicts originated in other definitions, has been suggested by Hill (1977), using a markedly economics perspective. According to his view,

> 'a service is a change in the condition of a person, or of a good belonging to some economic unit, which is brought about as the result of the activity of some other economic unit, with the prior agreement of the former person or economic unit' (Hill, 1977: 318).

Being a change over time instead of an entity, the dimensions and characteristics by which is described are necessarily of different nature than the ones used to describe goods. Therefore, goods and services belong in different logical categories. An additional advantage of this perspective pointed out by Hill (1977) is the coherence with the common sense use of language, since one unit "serves" the other.

This approach involves implicit relationships between producers and consumer, as noted later by Hill (1999). Iacobucci (1992) also noticed the relationship component as essential in a service interchange.

OTHER APPROACHES

Other authors have avoided defining what a service is, but have proposed a complete revision of the use of the term "service industry". For example, Lockyer (1986) argues that the essential distinction of a service industry concerns whether the transformation

process is part of a financial profit-seeking or a non-financial profit-seeking enterprise. In his terms, a service industry is that whose main purpose is the generation of social profit.

REFLECTIONS

A couple of reflections on the role of definitions seem appropriate as a closure to this section. Some papers have been identified in which services are described rather than defined. Without a proper conceptual definition, the simple fact of recognizing that services exist is valueless. Enis and Roering (1981) put it crudely:

> 'Description is not analysis. It may be correct to describe a worker as female, but this may not reflect her ability to perform a given task. Analogously, describing a product as a service rather than a good contributes little to the formulation of an effective marketing strategy for that product' (Enis and Roering, 1981: 3)

One can list innumerable differences or similarities between goods and services, but they are not useful unless they mean something to either organizations or consumers.

A second reflection is related to the extent that our conceptions of what is a service are based on legal and bureaucratic definitions, e.g. taking for granted that all the products of an industry bureaucratically classified as a service industry are services (Ahtola, 1985: 91). Some have expressed a similar concern regarding the goods/services dichotomy as having been 'deductively imposed on consumer items by marketing scholars' (Hunt (1991) cited in Hartman and Lindgren, 1993: 4). Both assertions point at challenging hollow definitions and substitute them for conceptually sound ones.

3.3.4 THEORETICAL POSITIONS

Academics appear to align behind two major opposing schools of thought on the subject of the differences between goods and services.

One holds that unique characteristics of services mandate a special management of services organizations, as well as teaching and research approach. To support this view, a set of different characteristics have been repeatedly invoked both at product level (in the nature of goods and services), and at organization level (how goods-producing and services-producing organizations differ). Four typical characteristics have been most cited as distinguishing services: simultaneity of production and

consumption (hence the customer is present in the production act), heterogeneity (services cannot be standardized), intangibility (services cannot be touched or grasped), and perishability (services are consumed – and perish – as soon as the are produced, which leads to the impossibility of accumulating inventory) (Iacobucci, 1996). Some explained similar characteristics from a slightly different perspective: intangibility, ability to be stored, ability to be transported, and ability to be mass-marketed (Uhl and Upah, 1983).

The second school refutes that position. But scholars have not agreed on a single approach for this denial. Instead, different types of arguments have been elaborated, some of them more provocative and some more reconciling. Some deny the existence or consistency of such differences; others recognize the differences but only as a matter of degree, and propose various models to handle the combination; and some others invalidate the debate and propose a different dimension or discussion to focus on.

SERVICES ARE DIFFERENT

One of the earliest arguments was suggested by Judd (1968), who concluded that the differences between product retailing and service retailing were greater than to be dismissed as incidental; but he also noted that the extent of similarities was substantial as well. Overall, he claimed for more specific studies of service retail.

Shostack (1977) extended that position and claimed for a unique and different service marketing discipline; according to her, many attempts to adopt product marketing techniques in services business have failed. And she strongly dismissed any similarities between goods and services:

> 'It is wrong to imply that services are just like products "except" for intangibility. Intangibility is not a modifier; it is a state. Intangibles may come with tangible trappings, but no amount of money can buy physical ownership of such intangibles as "experiences" (movies), "time" (consultants), or "process" (dry cleaning). A service is rendered. A service cannot be stored on a shelf, touched, tasted, or tried on for size.' (Shostack, 1977: 73)

Thomas (1978) added to that conception discussing six aspects of strategy which presented differences between product and service-businesses: describing services, building barriers, cutting costs, pricing, development, and acquisitions.

An acute observation was made by Lovelock (1981). He contended that there were two types of differences between goods and services marketing: generic differences, involving the nature of the product itself, how that product is created, the marketer's ability (or inability) to stockpile the product, the nature of the distribution channels for the product, and the relative ease of determining costs for pricing purposes, and contextual differences. The contention was that contextual differences would be progressively less pronounced as the services marketing discipline evolved along a learning curve.

The discussion was also taken to an organizational level. In an extensive review of the literature, Bowen and Ford (2002) appeal to common sense:

> 'Intuitively, it seems reasonable to expect that there are differences between managing and organization that produces something that can be seen, touched, and held and managing and organization that produces something that is perceived, sensed, and experienced' (Bowen and Ford, 2002: 447)

However, they acknowledge an implicit increasing problem, that of trying to distinguish "services organizations" from "product organizations". They attribute this increasing difficulty to the fact of many companies producing both intangible and tangible products (Bowen and Ford, 2002: 449); but they do not provide evidence to assess if companies producing both kinds of products is actually a recent phenomena or not.

Gronroos (1998) also differentiates firms in that service firms do not offer pre-produced products but processes as solutions to the problems of their customers.

THE GOODS/SERVICES DICHOTOMY IS NOT SUCH

Scholars have used a wide variety of arguments to reject the uniqueness of services.

One argument denies the goods/services taxonomy being a logical one, noting the high degree of heterogeneity within the class of services, and a significant homogeneity between classes, both from the producer and the consumer perspective (Enis and Roering, 1981: 2). This taxonomy seems to be more the product of a convention rather than of a conception (Foxall, 1984).

Another reason is related to the fact that tangible products can be substituted for intangible ones in many cases, and that the substitution depends upon the utilities delivered by the bundles of benefits (Enis and Roering, 1981)

A well liked argument was to arrange goods and services along a continuum, in which pure goods and pure services were at the extremes of a still undefined "serviceness" scale (Foxall, 1984; Murray and Schlacter, 1990; Rathmell, 1966). The overall continuum was soon examined more in detail, setting continuum scales for individual more defined variables. Many authors argued that the differences were more of degree than of kind (Lovelock, 1981; Uhl and Upah, 1983).

The continuum idea led to the development of a total marketing offer or a bundle containing both goods and services. Since almost all offerings are a combination of both goods and services, it is not only useless but difficult to categorize economic activities into goods and services (Berry, 1980; Enis and Roering, 1981; Gummesson, 1995; Langford and Cosenza, 1998; Shostack, 1977; Uhl and Upah, 1983). A variation of this argument was to propose that the term "product" served as the generic for goods and services (Enis and Roering, 1981). And Foxall (1984) suggested a more radical idea, to use the term "service" as the generic for both goods and services.

An alternative position in the debate was to dismiss the goods and services dichotomy, and to propose another one into which to draw attention. For example, consider Hill's (1999) proposition of classifying all economics products into tangible goods, intangible goods, and services.

DISCUSSION

For some authors, the debate on the distinction between goods and services was already over many years ago, with forthright statements such as: 'arguments as to differences between products and services have ceased to be productive' (Ryans and Witting (1977) cited in Uhl and Upah, 1983: 234). Gummeson (1995) subscribe to the same ideas.

Many argue that in fact there are no generic differences between managing a service-producing organization and managing a goods-producing organization, apart from the specifics of each industry (Uhl and Upah, 1983). And warn about the risk of deriving general statements from relatively weak classifications, as the goods/services dichotomies, that could be misleading due to within group variance as large as between group variance (Wyckham, Fitzroy and Mandry, 1975). It is argued that there should be a 'compromise between the specificity of the statement and the class of objects about which the statement is true' (Wyckham, Fitzroy et al, 1975: 64)

In fact, according to Lockyer (1986), 'books on the service industry contain discussions of managerial techniques which would sit without any change in books on the manufacturing industry' (Lockyer, 1986: 7). He claims that the debate on the differences should be abandoned in favour of understanding how operations management techniques can be interchanged between both types of organizations. If not, there a risk of engaging in a form of marketing myopia:

> '...An industry is a customer-satisfying process, not a good-producing process (...) An industry begins with the customer and his needs, not with a patent, a raw material, or a selling skill' (Levitt (1975) cited in Williams and Mowen, 1990: 357)

3.3.5 SUPPORTING DIMENSIONS

The theoretical positions are usually supported by a series of describing dimensions and examples. Almost every paper introduces their own arguments, and their variety makes it highly impractical to attempt to reproduce all the dimensions in this review. However, some of them appear to have been more accepted than others, and have served to make a case for both extreme arguments – that services are different, and that the dichotomy is non-existent. The following table presents a summary of these dimensions. In the left column the argument is used to characterize services as different; the right column provides the counter-arguments.

Table 13: Most frequent dimensions for and against services being different

Heterogeneity: services are less standardized and uniform	
• Service industries tend to differ to the extent to which they are "people-based" or "equipment-based". The former tend to be less standardized than the latter, because of the variability introduced by labour (Berry, 1980; Bowen, Siehl and Schneider, 1989; Rushton and Carson, 1989) • Standardization and quality control are difficult to achieve (Zeithaml, Parasuraman and Berry, 1985) • Cannot be mass-produced and standards cannot be precise. Perhaps there will be a standardization through the increasing use of service technology at the expense of personalized services (Rathmell, 1966)	• Heterogeneity is not specific for services (Grönroos, 1998) • Incorporation of variability by means of customer's goods and assets participating in the final product also happens in manufacturing (Lockyer, 1986) • Heterogeneity depends on the degree of uniqueness of the service, and it's not unique nor distinctive of services in general (Middleton, 1983) • Many services are heavily standardized (e.g. airlines) (Onkvisit and Shaw, 1991) • In any case, any product (good or service) is perceived in the same way by all the consumers (Wyckham, Fitzroy et al, 1975)

Perishability: services "perish" the moment they are produced, and cannot be inventoried	
• Services cannot be produced before required and then stored to meet demand. If a service is not used when available then the service capacity is wasted (Rushton and Carson, 1989; Sasser, 1976; Zeithaml, Parasuraman et al, 1985) • Because a service is a deed or performance, rather than a tangible item, it cannot be inventoried (Lovelock, 1981; Rathmell, 1966)	• Many tangible products are indeed highly perishable, and the effect of many services is long termed (Foxall, 1984) • The fact that services cannot be put into stock has nothing to do with their physical durability; services cannot be put into stock because a stock of changes is a contradiction in terms. Thus, the fact that services cannot be held in stock is not a physical impossibility, but a logical impossibility (Hill, 1977) • The problem of utilizing capacity is similar for goods and services. The perishability of services only adds urgency to the problem (Judd, 1968)
Intangibility	
• Services are more intangible than tangible (Berry, 1980; Flipo, 1988) • The intangibility has two meanings: they are physically untouchable; they cannot be tasted, smelt, or seen, and they are difficult to define, formulate or mentally grasp. (Berry, 1980; Rushton and Carson, 1989) • Because of the intangible nature of a service's output, establishing and measuring capacity levels for a service operation are often highly subjective and qualitative tasks (Sasser, 1976) • 'It is wrong to imply that services are just like products "except" for intangibility. Intangibility is not a modifier; it is a state. Intangibles may come with tangible trappings, but no amount of money can buy physical ownership of such intangibles...A service is rendered. A service cannot be stored on a shelf, touched, tasted, or tried on for size' (Shostack, 1977: 73) • Due to their intangibility, services cannot be stored, cannot be protected through patents, cannot be readily displayed or communicated (Zeithaml, Parasuraman et al, 1985)	• Intangibility is not specific for services. There are intangible aspects for the most tangible of products. Even tangible, testable, feelable, smellable products are, before they're bought, largely just promises (Foxall, 1984; Grönroos, 1998; Levitt, 1981; Lockyer, 1986; Wyckham, Fitzroy et al, 1975) • The idea that services are ephemeral and insubstantial because they are "immaterial" goods is a persistent and pernicious fallacy. Although they are not themselves physical objects, services may well consist of changes in the physical condition of goods or persons which are, in effect, permanent (Hill, 1977) • The empirical findings show the services are only relatively more intangible than goods (Iacobucci, 1992) • Intangibility and its implications is not an issue with frequent repeat purchases of services (e.g. fast moving consumer services) (Middleton, 1983)

Simultaneous production and consumption (inseparability)	
• Good are generally produced first, and then sold; services are usually sold first, then produced and consumed simultaneously (Berry, 1980; Middleton, 1983; Rushton and Carson, 1989; Sasser, 1976; Zeithaml, Parasuraman et al, 1985) • The consumption of a service cannot be detached from its production in the way that the acquisition of a good by a consumer in an exchange transaction may take place some time after the good is produced (Hill, 1977)	• The presence of the customer during the process also happens in manufacturing (Lockyer, 1986) • Some financial service products (e.g. bonds) are created way before being sold (Onkvisit and Shaw, 1991) • Creation at the seller-buyer interface (inseparability) does not appear to make services unique in marketing terms. Indirect distribution channels for services are also possible (Wyckham, Fitzroy et al, 1975) • Inseparability follow from the process nature of services (Grönroos, 1998)

There are many more characteristics cited in the literature as distinctive of services; for many of them is also possible to find counter-examples that question the validity of the argument:

- Determining costs for pricing purposes is more difficult for services (Lovelock, 1981; Thomas, 1978)
- The inability of a service of being transported, therefore forcing the consumer to be brought to the service delivery system or the system to the consumer (Sasser, 1976)
- Services possess more credence qualities and experience qualities than search qualities, as compared to goods (Iacobucci, 1992; Zeithaml, 1981)
- Services are more difficult to evaluate, and more risk is perceived from the purchase of services (Bowen and Ford, 2002; Hartman and Lindgren, 1993; Jackson, Neidell and Lunsford, 1995; Murray and Schlacter, 1990; Zeithaml, 1981)
- Services process require the participation of the customer (Bowen, Siehl et al, 1989; Hill, 1999)
- Services are more labour intensive (Bowen, Siehl et al, 1989)

3.3.6 EMPIRICAL STUDIES

LACK OF EMPIRICAL RESEARCH

One quarter of the papers (11 out of 45) are supported on empirical research. The most recurrent type of studies is based on surveys to either consumers or managers,

asking their perceptions about different dimensions of a comprehensive set of goods and services. The majority of the studies have been done in the USA. Interestingly, 3 studies utilize an experimental design to fulfil their objectives. Qualitative research is mostly anecdotal, with case studies providing examples to enrich the papers. A succinct summary of these empirical studies and their details is provided in the table below.

Table 14: Empirical studies on characteristics of services

Weinberger and Brown, 1977		
Location	USA	Experimental study on the impact of information about goods and services on the likelihood of purchasing them. Individuals' intentions of purchase are more influenced by external information on the quality of services than of goods, both for favourable and for unfavourable ratings or recommendations.
Context	Consumer perspective	
Sample	240 women	
Collection	survey, printed booklet	
Analysis	analysis of variance	
Lovelock, Langeard, Bateson, and Eiglier, 1981		
Location	USA	Empirical exploration of managers' perceptions about the interaction of marketing, operations, and personnel function in services organizations. Organizational impacts of the differences between services and goods organizations. The consumption of the service as it is produced implies a direct contact between marketing, production (operations) and personnel management. Services field managers (in 3 banks and 1 quick service restaurant) perceived themselves as being involved in the three functional areas.
Context	3 banks and 1 chain of quick service restaurants	
Sample	32 interviews, 162 mail surveys	
Collection	semi-structured interviews and mail survey	
Analysis	Not explained	
Zeithaml, Parasuraman and Berry, 1985		
Location	USA, Dun & Bradstreet directory	Empirical test on the perception of service managers about the problems implied in academic literature by the classic four characteristics of services, and about the use of the strategies to cope with them. Service managers did not identify the problems cited in the literature - as result of the four characteristics of services - as relevant to their practice, except for the problem of fluctuations in demand. The literature seems to reflect better on the practices and strategies implemented by services managers rather than on the identification of the relevant problems. Important differences exist among service firms, not just between service firms and goods firms. Reviews authors citing the four characteristics and their implications in terms of marketing.
Context	cross sectors	
Sample	323 (32% RR)	
Collection	mail survey	
Analysis	chi square, one way anova	
Parasuraman and Varadarajan, 1988		
Location	USA	Empirical study to ascertain the differences in manager's

Context	cross sectors	proactive strategic thinking between goods and service businesses with respect to (1) the marketing mix, and (2) other functional areas, as perceived by senior managers, and regarding future level of emphasis of their firms. Only three out of sixteen strategic mix options were significantly different: offering a wide variety of products, establishing a distinctive corporate/product image, and personal selling formulation and implementation (in these options services managers said they were going to place more emphasis than goods managers in the future). Five out sixteen functional strategies were different for services: investing in process research and development capabilities, focusing on employee motivation and job satisfaction, attracting and retaining competent personal, focusing on long term profits, and assuring a competitive return to shareholders (last two at p=0.1)
Sample	35 goods and 39 service managers (7% RR)	
Collection	mail survey	
Analysis	analysis of variance	

Murray and Schlacter, 1990

Location	USA	Experimental study on the differences between services and goods on consumers' perceived risk and variability. Consumers perceive greater overall risk before purchasing services than purchasing goods. Some specific types of risk are also perceived as greater for services than for goods: social, convenience, physical, psychological, and product variability. Two types of risk did not show significant differences: financial and performance. Introduces a technique for operationalization of the service construct, considering the relative proportions that a particular product may have on each dimension (intangibility, nonstandardization, inseparability, and simultaneity), and in the perceived dominance of each dimension relative to all other dimensions involved in defining products.
Context	cross-industry	
Sample	145 consumers	
Collection	survey	
Analysis	analysis of variance	

Iacobucci, 1992

Location	USA	Empirical test of some basic tenets or truisms held by the service marketing discipline regarding the differences between goods and services, from the customer's perceptions perspective. A selection of goods and services are judged by multiple samples of respondents on several criteria. Several preconceive notions (i.e., assumptions) of properties of services are fairly accurate, but that other assumptions do not hold up as well under scrutiny. Services were shown to be perceived as being (1) comprised of more credence and experience qualities than search qualities; (2) slightly more complex than most goods; (3) only relatively more intangible than goods; and (4) less standard (or more heterogeneous) as purchases. The relationships among these concepts require more complete theoretical explanation. The data also indicate that some goods resemble services on several criteria, which suggests that the continuum of "goods to services" per se may not be as useful as other, more theoretically interesting dimensions.
Context	Multisectorial	
Sample	300, MBA students	
Collection	Survey.	
Analysis	Univariate correlation, linear regression, correlation, factor analysis	

Hartman and Lindgren, 1993

Location	USA	Empirical study to capture the dimensions by which consumers differentiate services and goods. The participating subjects simplified the four a priori dimensions (intangibility, perishability, heterogeneity and inseparability) to three evaluative dimensions: the opportunity to customize a purchase, the ease of pre-purchase evaluation, and the wait required to make a purchase. Goods were distinguished from services only on the ease of evaluation dimension. The results show that while consumers perceive significant differences between goods and services, they use evaluative dimensions that are somewhat different from those proposed by the services marketing literature. The study concludes that services marketing strategies which are consumer-driven will be more effective than strategies based on commonly accepted conceptual dimensions of services.
Context	cross-industry	
Sample	N/A	
Collection	survey	
Analysis	factor analysis	

Johnston, 1993

Location	UK	Discusses the creation of a service offer and the change in the mix of goods and services that may take place in its development. Creation of service offer as a mix of services and products. There may be a mismatch between what the organization thinks it provides and what the customer buys.
Context	Brewery	
Sample	-	
Collection	Case study	
Analysis	as example	

Jackson, Neidell and Lunsford, 1995

Location	USA mid-size western city	Empirical study to explore the perception of industrial buyers about the differences between purchasing goods and purchasing services. Industrial purchasers perceive some differences between services and goods: in the difficulty for evaluating quality, in the degree of collaboration between parties, and in the available variety. Other classic differences (such as heterogeneity, risk, variability in quality, price as indicator of quality, difficulty for developing specs) were not supported.
Context	cross-sectional	
Sample	86 (36% RR), purchasing managers, NAPM local chapter	
Collection	mail survey	
Analysis	factor analysis	

Venkatraman and Dholakia, 1997

Location	USA	Experimental study to explore the difference in which consumers search for information about comparable (competing) goods and services. No differences in information search strategies for purchasing services and goods. Not in the amount of search (potentially due to the dominance of experience qualities against search qualities), not in the source of search (personal vs. non personal), and not in the search strategy (within-source search strategy was preferred for both)
Context	telecoms: memory phone vs. speed calling and answering machine vs. call answering	
Sample	115 female staff of a USA university	
Collection	software simulation "search monitor"	
Analysis	Analysis of variance	

Johnson and Nilsson, 2003

Location	USA	Empirical study using ACSI data to explore the relative importance placed by customers on reliability and customization in goods and services. Overall customization is more important for goods. Reliability is equally important in all categories (except for pure goods, in which is systematically lower).
Context	cross sectors (consumer goods and services)	
Sample	188 firms, 30 industries, 5 years	
Collection	ACSI database	
Analysis	linear regression and analysis of variance	

OPERATIONAL PROBLEMS

The lack of conceptual definitions of services has led empirical research to face some operational problems. Since many of the studies' aim is to prove that services and goods are different indeed, their problem is how to operationalize the stimuli and the possible answers. Most of the studies consist of presenting the respondents with a combined list of products, and asking them to assess some dimensions of their "goodness" or "serviceness". It can be argued that selecting that list of products along a continuum criterion, nothing more is done than confirming that such continuum exists. Nevertheless, some authors have managed to contribute methodologically, as can be appreciated in Table 14 above.

RESULTS

There is a widely recognized lack of empirical research to support the validity of the dichotomy goods/services and their associated characteristics, also supported by this review. Most of the arguments are intuitively appealing, but almost no data is provided to defend them. In some cases the empirical evidence almost contradicts the expected results; the strength of the conceptual arguments, however, has not been diminished. The case of the differences between goods and services has been developed mostly in a conceptual level (Hartman and Lindgren, 1993; Iacobucci, 1992; Murray and Schlacter, 1990; Zeithaml, Parasuraman et al, 1985).

3.4 THEMATIC ANALYSIS: CLASSIFICATION OF SERVICES

The following analysis presents the themes and patterns that have been identified in the set of included papers correspondent to the classifications of services. The section starts with a short introduction on classifications and terminology. The overall characteristics of the reviewed papers are presented, including details from the empirical studies. A detailed analysis of different characteristics of classifications is followed by a specific analysis of the service dimensions used to define each classification. A final discussion reviews the relevant debates and issues.

3.4.1 CLASSIFICATIONS, TYPOLOGIES, AND TAXONOMIES

> 'Classification is arguably one of the most central and generic of all our conceptual exercises. It is the foundation not only for conceptualization, language, and speech, but also for mathematics, statistics, and data analysis in general. Without classification, there could be no advanced conceptualization, reasoning, language, data analysis or, for that matter, social science research. In its simplest form, classification is merely defined as the ordering of entities into groups or classes on the basis of their similarity. Statistically speaking, we generally seek to minimize within group variance and maximize between group variance' (Bailey, 1994: 1)

Classifications are meant to bring mental order to the objects under consideration. A classification should involve a short number of simple attributes or constructs representing and facilitating the understanding of more complex phenomena (Cook, Goh and Chung, 1999; Mechanic (1962) cited in Mills and Margulies, 1980; Wemmerlöv, 1990).

Two other terms are usually used to describe classification: typologies and taxonomies. The terminology proposed by Bailey (2001) has been adopted in this study. Classification is the generic process and output of grouping by similarity. A typology is conceptual; the types represent concepts, which may or may not be illustrated with examples. Taxonomies describe classifications of empirical entities, from which conceptual meaning is sought; they are usually – but not necessarily - hierarchical and evolutionary.

3.4.2 OVERALL CHARACTERISTICS OF REVIEWED PAPERS

Most of the included papers (35 out of 45) either put forward or refine a classification. The remaining papers discuss, compare, test, or review classifications. A summary of all papers is included as Appendix G.

All typologies have been conceptually derived, except for a single empirically obtained taxonomy (Bowen, 1990). This taxonomy is based on customer perceptions on 9 service dimensions selected from the literature, and resulted in three clusters: "high contact, customized, personal service" (e.g. full service restaurant); "moderate contact, semi customized, non personal service" (e.g. developing photographic film); and "moderate contact, standardized service" (e.g. fast food).

Only a handful of the typologies (theoretical classifications) provide some kind of empirical evidence as a support to their theoretical claims (Collier and Meyer, 1998; Silvestro, Fitzgerald et al, 1992; Stell and Donoho, 1996). The rest of the classifications rely on examples to illustrate the ideal type distilled on the type category. Table 15 below presents a list of the empirical studies.

The comparison, review, and testing of classifications has not been very extensive either:

- Collier and Meyer (2000) establish a theoretical and empirical comparison restricted to what they call "service positioning matrices". These are typologies in which a superior performance is assumed if the service entity follows a certain pathway (e.g. the diagonal), and a direction of causation is implied by the positioning matrix from one axis to the other.
- Cook, Goh, et al (1999) extensively review 39 studies on service classifications published in the period 1964-1996.
- Davis, Guiltinan, et al (1979) empirically compare two types of typologies, one based on consumer behaviour characteristics, and another based on product and process characteristics. The comparison is focused on the information search and in the marketing media allocation decisions.
- Huete and Roth (1988) empirically test a previously proposed typology.
- Verma (2000) conducts an empirical assessment of the predictive accuracy of a previously proposed typology

It has been argued that for a classification on services to be effective and unambiguous, it must be formulated at a low level of aggregation; the classifications of services are rarely so (Wemmerlöv, 1990). Classifications in services have also received criticism because of general statements made from naïve taxonomies; there should be a compromise between the specificity of the statement and the class of objects about which the statement is true (Wyckham, Fitzroy et al, 1975).

Table 15: Empirical studies on classifications of services: details and findings

Bowen, 1990		
Location Context Sample Collection Analysis	USA - South cross sectors 442 (45% RR) mail survey analysis of variance, cluster analysis	Empirical taxonomy of services based on customer perceptions. Develops a new taxonomy based on a cluster analysis of consumer perceptions. Uses 9 attributes selected from the literature.
Collier and Meyer, 2000		
Location Context Sample Collection Analysis	USA cross-sectors 65 survey, MBA students expert opinion, panel consensus, correlation analysis	Analytical and empirical comparison of three service positioning matrices. A survey among 65 MBA students is used to test axis unidimensionality and correlation between the two axes
Davis, Guiltinan and Jones, 1979		
Location Context Sample Collection Analysis	USA - midsized households cross sector 290 (RR 39%) mail survey analysis of variance	Empirical comparison of typologies based on consumer behaviour characteristics (a la Copeland) - convenience, shopping, and specialty vs. typologies based on product characteristics (a la Aspinwall and later Judd) - price, frequency of purchase, personal or impersonal delivery, and rented/owned/non-goods.
Stell and Donoho, 1996		
Location Context Sample Collection Analysis	USA cross sectors 168 college students survey analysis of variance	Empirical test of an existing typology (Murphy and Enis, 1986): convenience, preference, shopping, specialty
Verma and Boyer, 2000		
Location Context	USA - western large metropolitan area Fast food, automobile repair, retail sales, legal services	Empirical assessment and test of the predictive accuracy of the Service Process Matrix (Schmenner, 1986)

Sample	273 managers in 70 industries in the 4 sectors (97% RR)	
Collection	hand delivered survey	
Analysis	factor analysis, analysis of variance, discriminant analysis	

3.4.3 CHARACTERISTICS OF CLASSIFICATIONS

In this section the main characteristics of the surveyed classifications are discussed: purpose, scope, level of analysis, knowledge domain, and underlying theory.

PURPOSE

The generic purpose of most reviewed classifications is to provide a conceptual framework to improve the understanding, strategic positioning, design, marketing, and management of service organizations. In many cases, a clear orientation is set by the author, towards either a functional approach, mainly marketing or operations management, or a more holistic approach on services organizations.

The researcher was faced with the challenge of discriminating between the objectives and characteristics of each classification as stated by their authors, and the objectives and characteristics that became apparent by taking an overlooking viewpoint for the analysis. This problem was particularly tough on determining the descriptive or normative character of typologies. A criterion was finally set relying on the structural design of the typology.

Most of the classifications are descriptive (80%), even though many provide precise management implications, quasi prescriptions, for each type or cell. These typologies typically take the form of a two-by-two or three-by-three matrix, or a simple enumeration of types or groups. The characteristics of each group are thoroughly described, and organizational or managerial insights are usually provided.

A reduced number of classifications (20%) is also descriptive, but have also a normative intention. These typologies classically create a conceptual space based on two descriptive dimensions (two axis), and suggest a locus of best fit / best performance in a specific area of that space, usually the diagonal. Some theoretical argument or empirical evidence is needed to support the claim that a particular factor – a product, a process, an organization – should respond to a particular position. The

"service positioning matrix" as mentioned by Collier et al (2000) is a normative classification.

Not all typologies in which a diagonal is drawn are normative. Some authors of descriptive classifications (see for example Schmenner, 1986; Schmenner, 2003) have observed a trend towards a position in their matrices, and therefore *suggest* that it may be a desirable position, but without a prescriptive emphasis.

SCOPE

Almost three quarters of the surveyed classifications deal exclusively with services. Less than a quarter are broad enough as to encompass both goods and services. Three classifications for goods and manufacturing have been included, because of their significance in the field.

In Table 16 below, a summary of the reviewed classifications is presented, with the following characteristics:

- Scope (S/G): goods (G), services (S), services and goods (S+G)
- Descriptive or Normative (D/N): descriptive (D), normative (N), descriptive with suggested diagonal (DN)
- Dimensions used to build the classification and types or labels by which the classified object is identified. The original designation by the author has been kept to maintain the integrity of the comparison. More details can be found in Appendix G.

Table 16: Classifications of services - scope, purpose, dimensions, and types

CLASSIFICATION	S/G	D/N	DIMENSIONS / TYPES
Ahtola, 1985	S	D	• Ownership is transferred during the exchange • Provider agent: personal services / non human
Bell, 1981	S+G	D	• Tangibility ("productness") • Extent of customer involvement ("serviceness") operationalized as standardization-customization TYPES • (industrialized, differentiated, customized) x (product, bundle, service)
Bowen and Bowers, 1986	S	D	• Degree of customer contact • Intangibility

CLASSIFICATION	S/G	D/N	DIMENSIONS / TYPES
Bowen and Jones, 1986	S	D	• Goal incongruence • Performance ambiguity TYPES • Impersonal market • Relational market • Impersonal hierarchy • Relational hierarchy
Bowen, 1990	S	D	• Cluster analysis TYPES • "high contact, customized, personal service" • "moderate contact, semi customized, non personal service" • "moderate contact, standardized service"
Buzacott, 2000	S	N	• Structure of the service system (job design): specialized, parallel, and serial jobs, bottom up and top down diagnosis • Service offering (complexity and customization)
Chase and Tansik, 1983	S	D	• Degree of customer contact (percentage of time the customer must be in system relative to total time) TYPES • Pure services • Mixed services • Quasi manufacturing services
Chase, 1978	S+G	D	• Degree of customer contact (percentage of time the customer must be in system relative to total time) TYPES • Pure services • Mixed services • Quasi manufacturing services
Collier and Meyer, 1998	S	N	• Customer wants in terms of freedom and decision making power to select a service encounter activity sequence (repeatability of the service encounter activity sequence) • Service design (Number of pathways and management control) TYPES • Customer routed • Co-routed • Provider routed
Copeland, 1923	G	D	• Consumer shopping effort TYPES • Convenience goods • Shopping goods • Specialty goods

CLASSIFICATION	S/G	D/N	DIMENSIONS / TYPES
Davis, 1999	S	D	• Nature of the task: routinized / knowledge • Service delivery type: integrated / decoupled TYPES • Service factory • Service shop • Service store • Service complex
Enis and Roering, 1980	S+G	D	• Consumer shopping effort (product differentiation) • Perceived risk (market differentiation) TYPES • Convenience goods • Shopping goods • Specialty goods • Preference goods
Hayes and Wheelwright, 1979	G	N	• Process life cycle • Product life cycle TYPES • Job shop • Disconnected line flow (batch) • Assembly line • Continuous flow
Haynes, 1990	S	DN	• Nature of the interface: mechanistic / organic • Complexity of technology TYPES • Product • Project • Professional • Personal
Haywood-Farmer, 1988	S	D	• Degree of service customization • Degree of labour intensity • Degree of contact and interaction
Hill, 1977	S	D	• Nature of processed object: goods / persons • Effect of the service: permanent / transitory • Type of effect: permanent or transitory services • Type of effect: reversible and irreversible services
Hill, 1999	S+G	D	• Nature of transacted products TYPES • Tangible goods • Intangible goods • Services

CLASSIFICATION	S/G	D/N	DIMENSIONS / TYPES
Holbrook and Howard, 1977	G	D	• Consumer's physical effort (shopping) • Consumer's mental effort (brand insistence) TYPES • Convenience goods • Shopping goods • Specialty goods • Preference goods
Huete, 1987	S	N	• Potential standardization of the service content (service complexity, customer knowledge) • Production efficiency of the delivery channels (delivery options)
Johnston and Morris, 1985	S	D	• Organization: product-oriented / process-oriented • Standardization / customization
Kellog and Nie, 1995	S	N	• Service package structure (degree of customization) • Service process structure (degree of customer influence) TYPES • Expert service • Service shop • Service factory
Larsson and Bowen, 1989	S	D	• Diversity of demand • Customer disposition to participate TYPES • Sequential customized service design • Reciprocal service design • Pooled service design • Sequential standardised service design

CLASSIFICATION	S/G	D/N	DIMENSIONS / TYPES
Lovelock, 1983	S	D	Five 2x2 matrices: • Destinatary of the service (person's mind and person's assets) and • Nature of the service act (tangible/intangible). • Type of relationship between service organization and customers (membership or no formal relationship) and • Nature of service delivery (continuous delivery of service, discrete transactions). • Extent to which service characteristics are customized (high, low) and • Extent to which customer contact personnel exercise judgement in meeting individual customer needs. • Extent of demand fluctuations over time (wide, narrow) and • Extent to which supply is constrained (peak demand can usually be met without a major delay, peak demand regularly exceeds capacity). • Availability of service outlets (single site, multiple sites) and • Nature of the interaction between customer and service organization.
Maister and Lovelock, 1982	S	D	• Extent of client-contact (low/high) • Extent of customization (low/high) TYPES • Service factory • Professional service • Mass service • Job shop
Mersha, 1990	S	D	• Degree of customer contact (corrected as the percentage of active contact of the customer and the system relative to the total time to serve him) TYPES • Pure services • Mixed services • Quasi manufacturing services
Mills and Margulies, 1980	S	D	• Interface between the service employee and the customer at the level of the organization's workflow TYPES • Maintenance-interactive organizations • Task-interactive organizations • Personal-interactive organizations

CLASSIFICATION	S/G	D/N	DIMENSIONS / TYPES
Morris and Johnston, 1987	S+G	D	• Inputs being processed TYPES • Customer processing operations • Information processing operations • Materials processing operations
Murphy and Enis, 1986	S+G	D	• Customer shopping effort • Customer perceived risk TYPES • Convenience products • Shopping products • Specialty products • Preference products (Products as goods, services, and ideas)
Schmenner, 1986	S	DN	• Labour intensity (or capital intensity) • Degree of interaction with customers TYPES • Service factory • Service shop • Mass services • Professional services
Schmenner, 2003	S	DN	• Relative throughput time • Degree of variation service factory TYPES • Service shop • Mass services • Professional services
Shostack, 1987	S	D	• Complexity of service processes • Divergence of service processes (variability)
Silvestro, Fitzgerald, Johnston and	S	N	• Combination characteristics of the service processes: people intensiveness, contact time, customization, discretion, front/back office type, product/process orientation • Number of customer transactions per service unit per day TYPES • Professional services • Service shop • Mass services
Tinnila and Vepsalainen, 1995	S	N	• Type of delivery channel • Service customization TYPES • Adaptive process • Focused process • Flexible integrated process • Fast routine process

CLASSIFICATION	S/G	D/N	DIMENSIONS / TYPES
Wemmerlöv, 1990	S	D	• Customer contact • Degree of routinization of the tasks • Objects processed

LEVEL OF ANALYSIS AND KNOWLEDGE DOMAIN

Each paper was categorized regarding the knowledge domain to which the concepts and theories used are grounded. The categories used were marketing, operations management, general management and organizational theory, and economics.

For every classification the level of analysis was assessed, considering the level at which the result of the classification – the types – had effect. Typologies were found to categorize products, processes, and organizations.

Table 17 below shows the assessed level of analysis and the knowledge domain for each classification. The visual analysis demonstrates that a correlation between both dimensions exists. Most of the classifications at the product level are grounded in the marketing discipline, whereas the classifications at the process level are based on operations management concepts.

The finding is justified because of the relatively independent assessment of both dimensions during the analysis, and is supported by similar findings in a previous review of the literature (Cook, Goh et al, 1999).

Table 17: Classifications of services - Level of analysis and knowledge domain

The symbols indicate the knowledge domain as follows:

▲ Marketing

● Operations Management

■ General Management, Organizational Theory, or Economics

CLASSIFICATION	PRODUCT	PROCESS	ORGANIZATION
Ahtola, 1985	▲		
Bell, 1981	▲		
Bell, 1986	▲		
Bowen and Bowers, 1986			■
Bowen and Jones, 1986		■	
Bowen, 1990			▲
Buzacott, 2000		●	

CLASSIFICATION	PRODUCT	PROCESS	ORGANIZATION
Chase and Tansik, 1983		●	
Chase, 1978		●	
Collier and Meyer, 1998		●	
Copeland, 1923	▲		
Davis, 1999			●
Enis and Roering, 1980	▲		
Hayes and Wheelwright, 1979		●	
Haynes, 1990		●	
Haywood-Farmer, 1988			●
Hill, 1977	■		
Hill, 1999	■		
Holbrook and Howard, 1977	▲		
Huete, 1987		●	
Johnston and Morris, 1985			●
Kellog and Nie, 1995		●	
Larsson and Bowen, 1989		■	
Lovelock, 1983		●	
Maister and Lovelock, 1982			■
Mersha, 1990		●	
Mills and Margulies, 1980		■	
Morris and Johnston, 1987		●	
Murphy and Enis, 1986	▲		
Schmenner, 1986			●
Schmenner, 2003			●
Shostack, 1987			●
Silvestro et al, 1992		●	
Stell and Donoho, 1996	▲		
Tinnila and Vepsalainen, 1995		●	
Wemmerlöv, 1990		●	

3.4.4 SERVICE DIMENSIONS

In an exhaustive survey of service typologies, Cook et al. (1999) identify several dimensions used by scholars to build their classifications, and suggest that they are either marketing-oriented or operations-oriented, as shown in the table below.

Table 18: Marketing and Operations oriented service dimensions (Cook, Goh et al, 1999)

Marketing-oriented service dimensions	Operations-oriented service dimensions
• Tangibility • Differentiation • Object of transformation • Type of customer • Commitment	• Customer contact • Capital intensity • Customer involvement • Employee/provider discretion • Production process

Cook's (1999) analysis fits with his observation about marketing scholars developing classifications mostly on product characteristics and operations management scholars doing similarly on process characteristics. This result was confirmed by the present study.

The present study identified 42 different dimensions used by classifications. But instead of adopting that functional division, an inductive analysis was performed on the dimensions, attempting to identify some kind of commonalities between them.[4] The result was that all 42 dimensions were organized under four groups. Each group represent the perspective – or the voice – of a different factor: the customer, the service system, the interface or relationship between customer and provider, and the service (or product) itself. The table below lists all perspectives and dimensions.

Table 19: Service dimensions organized under four perspectives

Customer
• Consumer buyer effort
• Consumer perceived risk
• Customer influence
• Customer disposition to participate
• Customer involvement

[4] The inductive analysis was conducted using a software for qualitative analysis; the details are explained in the Methodology chapter of this document.

Service System

- Routine or rigid process / non-routine or fluid process
- Relative throughput time
- Volume of customer transactions
- Continuous or discrete transactions
- Nature of supply
- Personal agent / Non-human agent
- Process life cycle
- Technology
- Complexity of processes
- Discretion of service employee
- Degree of variation allowed
- Number of pathways in service system
- Demand fluctuations
- Front-office / back-office
- Organizational workflow
- Product or process oriented
- Labour intensity
- Production efficiency of delivery channel
- Delivery channel
- Service delivery integration
- Service system structure

Interface or Relationship between customer and provider

- Goal incongruence
- Customer contact
- Performance ambiguity
- Membership or occasional relationship
- Interface
- Relationship facilities – customer

Service (product) itself

- Fulfilment of customer wants and needs
- Type or purpose of output
- Reversible and irreversible
- Tangibility / Intangibility
- nature of product being transacted
- Transfer of ownership
- Product life cycle
- Customization / Standardization
- Permanent or temporary effects

PERSPECTIVES REPRESENTED BY THE SERVICE DIMENSIONS

This categorization of dimensions helps synthesizing the perspectives of the dimensions used by each service typology, i.e. a classification echoes a perspective according to the dimensions that define it. The perspectives of a classification tell which factors are being taken into account for its construction.

The knowledge domain – the area of knowledge in which the paper is grounded - is also represented in the table. A correlation similar to the level of analysis – knowledge domain one seems to be present. Classifications (dimensions) reflecting a customer perspective seem to be grounded mostly in marketing, whereas classifications (dimensions) reflecting a process or service system perspective are predominantly based on operations management concepts.

Table 20: Perspective of the dimensions used in each classification

The symbols indicate the knowledge domain as follows:

- ▲ Marketing
- ● Operations Management
- ■ General Management, Organizational Theory, or Economics

CLASSIFICATION	CUSTOMER	PRODUCT	SYSTEM	INTERFACE
Ahtola, 1985		▲	▲	
Bell, 1981	▲	▲		
Bell, 1986	▲	▲		
Bowen and Bowers, 1986		■		■
Bowen and Jones, 1986				■
Bowen, 1990	▲			▲
Buzacott, 2000		●	●	
Chase and Tansik, 1983				●
Chase, 1978				●
Collier and Meyer, 1998		●	●	
Copeland, 1923	▲			
Davis, 1999			●	
Enis and Roering, 1980	▲			
Hayes and Wheelwright, 1979		●	●	
Haynes, 1990			●	●
Haywood-Farmer, 1988		●	●	●
Hill, 1977		■		
Hill, 1999		■		

CLASSIFICATION	CUSTOMER	PRODUCT	SYSTEM	INTERFACE
Holbrook and Howard, 1977	▲			
Huete, 1987		●	●	
Johnston and Morris, 1985		●	●	
Kellog and Nie, 1995	●	●		
Larsson and Bowen, 1989	■		■	
Lovelock, 1983		●	●	●
Maister and Lovelock, 1982		■		■
Mersha, 1990				●
Mills and Margulies, 1980			■	
Morris and Johnston, 1987		●		
Murphy and Enis, 1986	▲			
Schmenner, 1986		●	●	●
Schmenner, 2003			●	
Shostack, 1987			●	
Silvestro et al, 1992		●	●	●
Stell and Donoho, 1996	▲			
Tinnila and Vepsalainen, 1995		●	●	
Wemmerlöv, 1990			●	●

3.4.5 DISCUSSION

ON THE VARIETY AND DISPERSION OF TYPOLOGIES

The number and variety of typologies is noteworthy, as is the number and variety of dimensions and criteria to classify service products, service processes, and service organizations. Sensible questions to ask at this point of the analysis are whether this diversity has any explanation, and what are the implications.

An examination of the list of dimensions and types by which typologies are defined (Table 16 on page 59 and Table 19 on page 67) points up a number of observations:

(a) Many classifications appear to be producing similar contributions in terms of the objects being classified. Some even use similar category names (e.g. service shop, professional services); others appear to be using parallel dimensions with a slightly different arrangement.

(b) There are a lot of dimensions that seem to be highly inter-related. A classification usually uses one or two dimensions as the drivers of the typology, and employs some other dimensions to describe the types. In turn, these dimensions are possibly being used as drivers of other classifications, which use some other to describe its categories. The result is that, considering the set of classifications, many dimensions have been used indistinctly by different classifications as both the clustering criteria and as descriptors.

Two explanations are proposed to understand these observations. One alludes to the theories that inform the classifications and provide the rationale for the choice of dimensions and type-tags. The second is related to the extent to which the chosen dimensions are contingent on the nature of the service or on managerial choices. Both ideas and a possible implication are further developed in the following sections.

UNDERLYING THEORIES

Some of the marketing-oriented typologies make use of consumer behaviour theories as an input (Copeland, 1923; Enis and Roering, 1980; Holbrook and Howard, 1977; Murphy and Enis, 1986).

The few classifications that use economics-oriented theories are based on general economic principles of production (Hill, 1977; Hill, 1999) and on transaction costs theory (Bowen and Jones, 1986).

A small number of classifications utilize organizational theories as the grounds for their studies; for example Bowen and Bowers (1986) refer to environmental uncertainty, and Larsson and Bowen (1989) attempt to integrate the explanatory powers of contingency theory with more recent frameworks of the services management literature.

The rest of the classification efforts, more than two thirds of the total, draws on different elements of the marketing and operations management fields of knowledge, or on what some authors call the service management field. But in most cases, the identification of the theoretical premises upon which the arguments and typologies have been developed is unclear.

It would not be true to assert that no theoretical foundations have been used to build those typologies. Many of them relate to either well established or emerging concepts in their fields. For example, the concept of focused factory (Tinnila and Vepsalainen, 1995; van Dierdonck and Brandt, 1988), the theory of swift, even flows (Schmenner,

2003), or the customer contact model (Bowen and Bowers, 1986; Chase, 1981; Chase and Tansik, 1983; Haywood-Farmer, 1988; Wemmerlöv, 1990). But in any case, these tend to be conceptualizations within a functional perspective, and sometimes fail to integrate the contributions of more fundamental management theories.

This suggestion does not diminish the value of the classifications both in the academic and managerial domains; however, it may cause the choice of dimensions to appear arbitrary rather than theory-driven. 'A classification is no better than the dimensions or variables on which it is based' (Bailey, 1994: 2); hence, that subjective character gets transferred to the classification itself. This phenomenon was somehow noticed beforehand: 'To some extent typologies are most useful to those who are analyzing and studying organizations in terms of the basic dimension(s) of their classification system' (Mills and Margulies, 1980: 255).

CONTINGENCY VS. MANAGERIAL CHOICES

The second explanation to the observed characteristics of the classifications under review is related to the choice of dimensions. The problem was also pointed out in the literature:

> 'Another limitation of most service organization typologies is that they are developed as definitional classifications of alternative designs that are outside of a contingency framework. That is, the characteristics of the interface are themselves the characteristics used to type organizations - the interface characteristics are not treated as contingencies faced by the organization which, in turn, suggest a separate set of design characteristics which then become the basis for labelling alternative types of service organizations.' (Larsson and Bowen, 1989: 255)

Then two types of dimensions can be used to design classifications, contingent dimensions and design characteristics. Contingent dimensions are those that are relatively independent (for classification purposes) from the object being classified (service product, process, or organization). An example is the goal incongruence and performance ambiguity used by Bowen and Jones (1986). Dimensions that describe design characteristics are precisely that, and they are ultimately a consequence of managerial choices. A typical example is provided by the "popular" degree of service customization, degree of labour intensity, and degree of contact and interaction (Haywood-Farmer, 1988; Schmenner, 1986). The value of any particular object under classification in any of the scales depends mostly upon design choices, and not upon

its intrinsic characteristics. For example, it is easy to visualize different restaurants in which these dimensions take extreme values.

A typology based on contingent choices essentially reads: "These objects (products, processes, organizations), independently of managerial choices, can be classified as..." A typology based on managerial choices essentially reads: "The result of these managerial choices on these objects (products, processes, organizations) can be classified as..."

Again, there is no claim about the latter being less valuable. But naturally, there will be as many different dimensions, and hence classifications, as managerial choices available.

4 CONCLUSIONS

This study has reviewed the literature on the distinguishing characteristics of services and on the classification of services, in both a comprehensive and systematic manner. Four objectives had been stated for this review:

(a) To provide the researcher with a thorough understanding of the theoretical arguments and the empirical limitations of the existing knowledge in the topic

(b) To contribute to the academic literature in the field of services management by providing a methodologically rigorous review and synthesis of the extant knowledge in the field

(c) To identify related research opportunities properly supported by the review process

(d) To add to the development of a review methodology which has only recently started to be used for management research

An assessment and overall conclusions for each objective are discussed in the following sections. The first section recaps the thematic content of the review and suggests further research to be undertaken, covering objectives (a), (b) and (c). The second section summarizes the methodological facets of this study and offers an assessment, covering objective (d).

4.1 ON CONTENT

4.1.1 CHARACTERISTICS OF SERVICES

The review has explored the characteristics of services and by extension, the arguments for and against the logic of a "goods vs. services" dichotomy. The arguments by which the implications of these characteristics have influenced, to a lesser extent, the management of goods-producing organizations and services-delivering organizations have also been reviewed. Most of the discussion has been around the service product and the service processes.

Different theoretical perspectives from which to participate in that debate were outlined. Some authors strongly defend the uniqueness of services and therefore justify unique services functional specializations; others make a similarly strong case against the differences; and still others ignore the debate on the grounds of its futility.

An extensive account of the arguments used to sustain each position was made, including a thorough comparison of the same four dimensions equally used by both groups of academic works.

The debate on the distinctive characteristics of services has been put forward mostly from an academic perspective. Considering the earliest arguments held by academics, it is possible to understand their original purpose. In a managerial environment dominated by manufacturing perspectives, and with the rapid development that the marketing of consumer goods had at that time, some of them had to make an significant effort to make the case that some differences existed, and therefore different techniques and tools were needed. Since then, some scholars were quicker than others in recognizing that the marketing of services, and later the services operations and delivery, was no more than another category of generic products to market, or to produce and deliver, with their own special characteristics and specifications. Soon those ideas had to be put into practice, and the search for differences between goods and services turned to a search for similarities. It seems that lately the relevant discussion is whether the distinction is important at all, either for customers or for organizations. This evolutionary account is not completely accurate in terms of dates – e.g. some references on the irrelevancy of the debate have been published very early - but it is believed that captures a reasonable explanation of the topic's background.

RESEARCH OPPORTUNITIES[5]

- Even though the debate on the characteristics of services has matured significantly, there is a widely recognized lack of empirical support to the theoretical premises.
- Rather than the differences between goods and services, the extent to which the whole distinction is meaningful for both customers and organizations has remained unexplored.
- It has been reported that empirical research on the characteristics of services has tended to be concentrated in a few industries, whereas conceptualizations tend to be across sectors.

[5] The author of this dissertation intends to undertake further doctoral research, which will be informed by this review, but will not be strictly focused on the characteristics or the classifications of services.

- It has been argued that bureaucratic classifications impact the collective perceptions about what is called a good or a service; the extent to which a self-defined organization as a good-producing or a service-producing organization affects its structure and management techniques.

4.1.2 CLASSIFICATIONS OF SERVICES

The review has explored most classifications developed to understand services from marketing, operations management, and service management perspectives. The purposes and main characteristics of the typologies were examined. Typologies refer to different objects or levels of analysis, and are informed by various areas of knowledge.

The dimensions by which products, processes, and organizations are classified were thoroughly analyzed, and were used to group classifications according to their perspective. The implicit nature of the dimension and its implications was discussed.

Some researchers have proposed their classification as an attempt to establish a single universal typology by which to explain most of the management challenges related to services. In their claim, they use a widely cited typology for manufacturing operations, the product-process matrix. These researchers incur in two wrong assumptions. First, they take for granted the "success" of that manufacturing typology, when in fact subsequent research has demonstrated its limitations. Secondly, they assume that such universal typology is achievable. This review has shown the variety of perspectives, purposes, and dimensions by which it is possible to approach an organized understanding of services. It has also elaborated on the limitations of many of them. And most importantly, it suggest an alternative view to the pursue of an ideal classification. The aggregation and synthesis of typologies as done in this review has the same effect as the universal typology: to foster critical thought on the dimensions that are relevant to classify services, dependent upon the purpose of classification, whilst being aware of their limitations.

The success of a particular classification is often measured or assessed by the frequency by which it gets cited in subsequent publications. And given the available evidence, success seems to be more related to the opportunity of publication and to the soundness of the terms utilized, i.e. to their "marketing power", rather than to the conceptual robustness and empirical validity.

RESEARCH OPPORTUNITIES

- Most typologies have almost no empirical support and yet they are popular references in academic papers; empirical validation would be welcome. A methodological challenge is the operationalization of dimensions in measurable scales.
- Theoretical and empirical comparisons on the degree to which different typologies effectively discriminate between types of organizations are needed, considering different purposes and larger number of typologies.
- Many typologies were developed as tools for managers to position, design, and manage their organizations better; no research has been done on manager's perceptions about the usefulness of these classifications, or about their actual use in managerial environments.
- It has been argued that many typologies have arrived to the same results but using different dimensions and/or different type-labels; a theoretical analysis of the fit types or classes across classifications could help determining their intrinsic correlation.

4.2 ON METHODOLOGY

The conclusions on methodology are organized into three sections: the results of having used a systematic approach are discussed, major learning points are summarized, and an overall assessment about the systematic review methodology is offered.

A SYSTEMATIC LITERATURE REVIEW

The application of a systematic process for a literature review fulfilled the researcher's expectations satisfactorily, and the resulting study is appraised to have overcome most of the criticisms usually attributed to literature reviews. All phases of the project - search, appraisal, selection, data extraction, analysis, and synthesis – were undertaken according to explicit criteria and procedures. Having followed this methodology provides transparency to the process, allowing the reader to assess the study results with a more informed perspective. The bias that the researcher unavoidably introduces in the review has been kept under a reasonable control.

Even so, the review is not free from having some limitations; as expected, every stage introduced its own. In order to make the keyword search operational, a number of restrictive decisions were taken. The search was conducted within two databases and the search strings were modified by restrictive clauses, decisions that may have introduced a bias; however, the low impact of the keyword search in the total number of papers reduces its impact. The low inclusion rate of books – for the reasons opportunely explained – may have also caused the review to have missed some contributions. The most serious limitation in terms of study selection was probably caused by some of the thematic exclusion criteria, namely the exclusion of papers in the economics or organizational theory fields. In this case, the feasibility of the review determined the need of this exclusion, even though some papers were included anyway, because of an explicit relation with the topics under review. The depth of the analysis and synthesis was constrained by the researcher's ability to detect patterns and to relate concepts. The descriptive tables on the considered studies and having attempted to maintain the original terminology used by the authors whenever possible are expected to have attenuated any shortcoming.

Overall, it seems unlikely that these limitations had changed the direction of the study results; the most likely effect would have been a different degree of richness in the conclusions.

LEARNING POINTS

Most of the learning points have been already suggested when the modifications to the protocol were reported. Therefore, only a selection of the major learning points is presented here, two of them mainly conceptual and two mainly operational.

The first and probably most important learning point is the need for a focused and accurate review question. As commented before, the focus of this research was narrowed by four or five times from its original scope for it to be undertaken in the time available. A complete review question should state the detailed questions that the review attempts to answer, a precise definition of the field scope in which the review will be located, and a clear idea of the type of academic work that is sought.

As in most management research, undertaking a pilot study is highly valuable. A literature review is by no means a linear process; a well conducted pilot can provide with the necessary feedback to enhance the process without putting the actual study under risk.

The third learning point is about planning of the analysis and synthesis phases. The researcher may become tempted of leaving the development of an analysis and synthesis strategy for "later", in the hope that by getting familiarized with the data will eventually produce an appropriate framework. Being familiarized with the data does help, but a lot of work can be saved, especially regarding the data extraction, if the researcher plans in advance the types of tables and comparisons he has in mind.

The final major learning point is return to project management basics, and it is about not underestimating the time resources needed to undertake the review. Enhancing a literature review with transparency and traceability has its costs; the systematic search, selection and documentation are particularly time consuming.

IMPROVING THE METHODOLOGY

The systematic review methodology has only recently started to be used in management research, hence it is appropriate to discuss some of its limitations and potential opportunities for improvement.

Scholars who have proposed the transfer of this methodology from the medical sciences to the social sciences have extensively studied the similarities and differences between both fields in terms of research (Tranfield and Denyer, 2003). The similarities have encouraged the transfer; however, the differences have not yet been practically incorporated into the methodology.

It is proposed that a partial answer to this challenge is about the fit of the methodology with the review project. The characteristics of the project need to be taken into account when designing the methodology; various characteristics of the review project should affect the methodology design. For example, the level of abstraction at which the review is proposed. A review of grand theories in a long studied field may focus on a strong analytical framework to study seminal works, probably limited to a short number of books. A review of empirical studies using a particular type of methodologies or limited to a certain context probably needs to focus on a thorough keyword search in academic journals, and provide a solid methods for synthesizing.

For the same reason, the teaching of the methodology should stress the fundamental principles to be followed rather than the operational details.

The review was not undertaken following a linear process. Successive iterations at all stages were needed, some of them to overcome design deficiencies, but some others because of the nature of the process.

Whenever a review produces a set of heterogeneous articles (e.g. theoretical and empirical papers), the analysis and synthesis phases must consider alternatives for comparing like with like. The same problem is faced by the quality assessment; papers that were intentionally aimed at different audiences cannot be fairly measured using the same scales.

Finally, a couple of concluding remarks are made on the characteristics of systematic reviews. Making all criteria and decisions explicit in a protocol gives the review transparency and traceability, but not replicability nor objectivity. As mentioned before, the subjective influence of the researcher is unavoidable. What can be expected at most is to have it stated explicitly. The second observation is about the extent to which a review can claim to be comprehensive or complete; needless to say that no matter how systematic a search may be conducted, no reviewer can assure to have found absolutely all studies within the intended scope. But what can be done is to use a balanced combination of different sources and search tactics that ensures an extensive coverage. For example, overcoming keyword search potential deficiencies with cross-references searches or panel recommendations.

Overall, the systematic review methodology constitutes a valuable contribution. Nevertheless, the researcher must be aware that adopting this approach may be necessary, but is definitely not enough to produce good quality management research. In terms of quality management - a topic related to the researcher's interest - the systematic review approach is a simile of a quality assurance programme; one does not guarantee achieving good quality research and the other does not guarantee achieving customer satisfaction; but both may become precious help in that attempt.

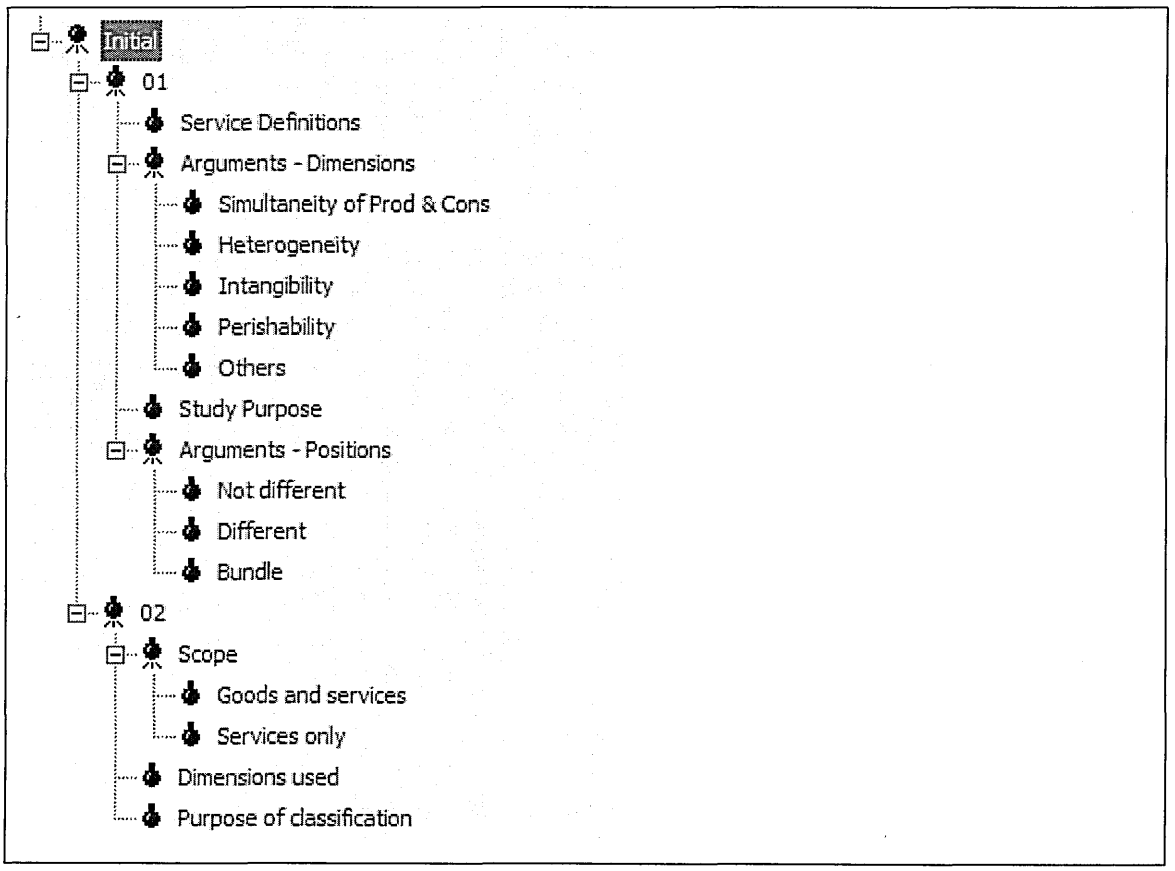
APPENDICES

A. DATA EXTRACTION FORM

CITATION INFORMATION	• Author, Year of publication, Title • Source title and conventional identification data (volume, issue, page numbers, publisher, place of publication, etc.)
STUDY SCOPE	• Sub-field of study: subject or academic domain within the overall scope of the review • Keywords: provided by the journal and/or identified by researcher • Short abstract (20 - 40 words) • Abstract • Key findings
TYPE OF PAPER (former Empirical or Theoretical)	• (T) Theoretical: Definitional and conceptual discussion • (M) Managerial: Non-empirical managerial discussion (with examples) • (E) Empirical: Empirical study (may include theory and managerial implications)
RESEARCH SPECIFICS	• Empirical or theoretical • Location of study • Context or industry • Study characteristics: brief description of research methodology type, method of data collection and analysis • Sample size
INCLUSION	• Reason for inclusion (or for exclusion in excluded studies)
QUALITY ASSESSMENT	• Theory • Literature • Methodology • Contribution • Generalizability
STORAGE	• Location of physical and/or electronic document in personal file

B. INITIAL ANALYTICAL CODING FRAMEWORK

Figure 8: Initial analytical coding structure - NVivo



C. FINAL ANALYTICAL CODING FRAMEWORK

Figure 9: Final coding framework - Characteristics of services

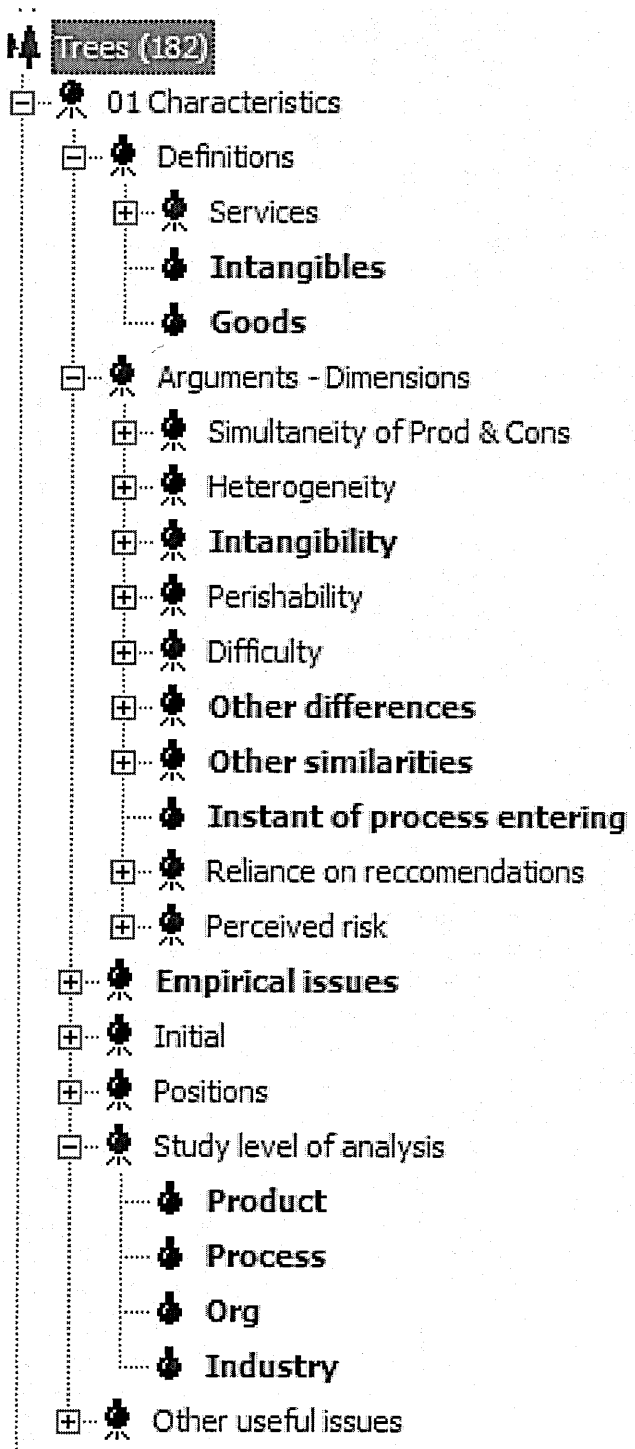
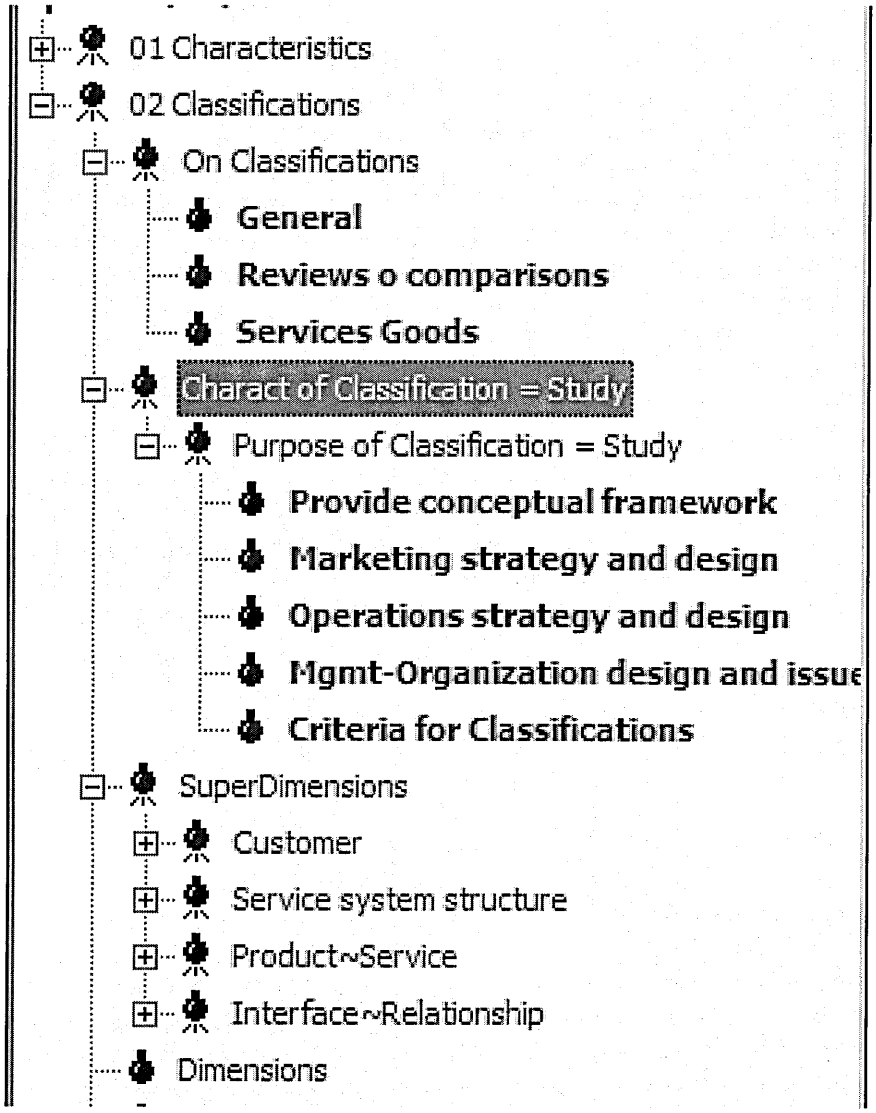


Figure 10: Final coding framework - Classifications of services



D. JOURNALS SOURCE OF INCLUDED ARTICLES

JOURNAL NAME	COUNT OF PAPERS
International Journal of Operations & Production Management	9
Journal of Marketing	7
Harvard Business Review	6
Academy of Management Review	4
International Journal of Service Industry Management	4
Journal of Services Marketing	4
Journal of the Academy of Marketing Science	4
European Journal of Marketing	3
The Service Industries Journal	3
Industrial Marketing Management	2
Journal of Operations Management	2
Journal of Retailing	2
Sloan Management Review	2
Business (Atlanta)	1
Business Horizons	1
Canadian Journal of Economics	1
International Journal of Production Economics	1
The Journal for Quality and Participation	1
The Journal of Business & Industrial Marketing	1
Journal of Business Strategies	1
Journal of Consumer Marketing	1
Journal of Law and Economics	1
Journal of Management	1
Journal of Marketing Theory and Practice	1
Journal Of Professional Services Marketing	1
The Journal of Service Marketing	1
Management Science	1
Operations Research	1
Production and Operations Management	1
Quality Management Journal	1
Quarterly Review of Marketing	1
Research in Marketing	1
Review of income and wealth	1

E. OVERALL SEARCH AND SELECTION RESULTS

The following tables display the overall results – number of studies – for the search and selection stages, for both review topics individually and overall.

The first title column indicates the sources by which the studies where originally identified:

SS	Scoping study
KS	Keyword search
CR	Cross references
RP	Panel recommendation
SB	Selective browsing

The other columns indicate the number of studies in each stage:

FOUND	Total number of studies found (relevant)
INCL	Total number of studies included
N10	Number of studies included (full inclusion)
N20	Number of studies included (partial contribution)
X	Number of studies excluded from the review
N%	Contribution of included studies per source (as % of total number of included studies)
N/FND	Percentage of included studies in relation to found studies, for each source

Table 21: Overall search and selection results (both review topics)

TOT	FOUND	INCL	N10	N20	X	N%	N/FND
SOURCE	**197**	**86**	**60**	**26**	**111**	**100%**	44%
SS	46	39	28	11	7	45%	85%
KS	117	25	16	9	92	29%	21%
CR	33	21	15	6	12	24%	64%
RP	0	0	0	0	0	0%	
SB	1	1	1	0	0	1%	

Table 22: Characteristics of services - Search and selection results

1 VS	FOUND	INCL	N10	N20	X	N%	N/FND
SOURCE	**67**	**45**	**32**	**13**	**22**	**100%**	67%
SS	17	17	13	4	0	38%	100%
KS	35	17	11	6	18	38%	49%
CR	15	11	8	3	4	24%	73%
RP	0	0	0	0	0	0%	
SB	0	0	0	0	0	0%	

Table 23: Classifications of services - Search and selection results

2 CLASS	FOUND	INCL	N10	N20	X	N%	N/FND
SOURCE	**135**	**45**	**31**	**14**	**90**	**100%**	33%
SS	29	22	15	7	7	49%	76%
KS	84	10	7	3	74	22%	12%
CR	21	12	8	4	9	27%	57%
RP	0	0	0	0	0	0%	
SB	1	1	1	0	0	2%	

F. CHARACTERISTICS OF SERVICES: INCLUDED STUDIES

1. Ahtola, O.T. (1985), 'The Conceptual Meaning of Marketing Services', in Bloch, T.M., Upah, G.D. and Zeithaml, V.A. (editors), *Services Marketing in a Changing Environment*, AMA, Chicago, pp. 91-93.

2. Berry, L.L. (1980), 'Services Marketing Is Different', *Business (Atlanta)*, Vol. 30, No. 3, May-June, pp. 24-29.

3. Berry, L.L. (1986), 'Big Ideas in Services Marketing', *Journal of Consumer Marketing*, Vol. 3, No. 2, Spring, pp. 47-51.

4. Bowen, D.E., Siehl, C. and Schneider, B. (1989), 'A Framework for Analyzing Customer Service in Manufacturing', *Academy of Management Review*, Vol. 14, No. 1, pp. 75-95.

5. Bowen, J. and Ford, R.C. (2002), 'Managing Service Organizations: Does Having a 'Thing' Make a Difference?', *Journal of Management*, Vol. 28, No. 3, pp. 447-469.

6. Darby, M.R. and Karni, E. (1973), 'Free Competition and the Optimal Amount of Fraud', *Journal of Law and Economics*, Vol. 16, No. 1, pp. 67-86.

7. Dholakia, R.R. and Venkatraman, M. (1993), 'Marketing Services That Compete With Goods', *The Journal of Services Marketing*, Vol. 7, No. 2, pp. 16-23.

8. Enis, B.M. and Roering, K.J. (1981), 'Services Marketing: Different Products, Similar Strategy', in Donnelly, J.H. and George, W.R. (editors), *Marketing of Services. Proceeding Series*, AMA, pp. 1-4.

9. Flipo, J.-P. (1988), 'On The Intangibility Of Services', *The Service Industries Journal*, Vol. 8, No. 3, July, pp. 286-298.

10. Foxall, G. (1984), 'Marketing *Is* Service Marketing', *The Service Industries Journal*, Vol. 4, No. 3, pp. 1-6.

11. Grönroos, C. (1998), 'Marketing Services: the Case of a Missing Product', *The Journal of Business & Industrial Marketing*, Vol. 13, No. 4/5, pp. 322.

12. Gummesson, E. (1995), 'Truth and Myths in Service Quality', *The Journal for Quality and Participation*, Vol. 18, No. 6, Oct/Nov, pp. 18.

13. Hartman, D.E. and Lindgren, J.H. Jr. (1993), 'Consumer Evaluations of Goods and Services: Implications for Services Marketing', *The Journal of Services Marketing*, Vol. 7, No. 2, pp. 4.

14. Hill, P. (1999), 'Tangibles, Intangibles and Services: a New Taxonomy for the Classification of Output', *Canadian Journal of Economics*, Vol. 32, No. 2, April, pp. 246-266.

15. Hill, T.P. (1977), 'On Goods and Services', *Review of Income and Wealth*, Vol. 23, No. 4, December, pp. 315-338.

16. Iacobucci, D. (1992), 'An Empirical Examination of Some Basic Tenets in Services: Goods-Services Continua', in Swartz, T.A., Bowen, D.E. and Brown, S.W. (editors), *Advances in Services Marketing and Management*, JAI Press, Greenwich, Connecticut, pp. 23-52.

17. Iacobucci, D. (1996), 'Services: What Do We Know and Where Shall We Go?', in Swartz, T.A. and Brown, S.W. (editors), *Advances in Services Management and Marketing*, JAI Press, Greenwich, CT,

18. Jackson, R.W. and Cooper, P.D. (1988), 'Unique Aspects of Marketing Industrial Services', *Industrial Marketing Management*, Vol. 17, No. 2, pp. 111-119.

19. Jackson, R.W., Neidell, L.A. and Lunsford, D.A. (1995), 'An Empirical Investigation of the Differences in Goods and Services As Perceived by Organizational Buyers', *Industrial Marketing Management*, Vol. 24, No. 2, March, pp. 99.

20. Johns, N. (1999), 'What Is This Thing Called Service?', *European Journal of Marketing*, Vol. 33, No. 9/10, pp. 958-973.

21. Johnson, M.D. and Nilsson, L. (2003), 'The Importance of Reliability and Customization From Goods to Services', *Quality Management Journal*, Vol. 10, No. 1, pp. 8-19.

22. Johnston, R. (1993), 'Products and Services - A Question of Visibility', *The Service Industries Journal*, Vol. 13, No. 3, July, pp. 125-136.

23. Judd, R.C. (1964), 'The Case for Redefining Services', *Journal of Marketing*, Vol. 28, No. 1, January, pp. 58-59.

24. Judd, R.C. (1968), 'Similarities or Differences in Product and Service Retailing', *Journal of Retailing*, Vol. 43, No. 4, winter, pp. 1-10.

25. Langford, B.E. and Cosenza, R.M. (1998), 'What Is Service/Good Analysis?', *Journal of Marketing Theory and Practice*, Vol. 6, No. 1, Winter, pp. 16.

26. Levitt, T. (1981), 'Marketing Intangible Products and Product Intangibles', *Harvard Business Review*, May-June, pp. 94-101.

27. Lockyer, K. (1986), 'Service - A Polemic and a Proposal', *International Journal of Operations & Production Management*, Vol. 6, No. 3, pp. 5-9.

28. Lovelock, C.H. (1981), 'Why Marketing Management Needs to Be Different for Services', in Donnelly, J.H. and George, W.R. (editors), *Marketing of Services*, American Management Association, Chicago, pp. 5-9.

29. Lovelock, C.H., Langeard, E., Bateson, J.E.G. and Eiglier, P. (1981), 'Some Organizational Problems Facing Marketing in the Service Sector', in Donnelly, J.H. and George, W.R. (editors), *Marketing of Services*, American Management Association, Chicago, pp. 168-171.

30. Middleton, V.T.C. (1983), 'Product Marketing - Goods and Services Compared', *Quarterly Review of Marketing*, Vol. 8, No. 4, Summer, pp. 1-10.

31. Murray, K.B. and Schlacter, J.L. (1990), 'The Impact of Services Versus Goods on

Consumers' Assessment of Perceived Risk and Variability', *Journal of the Academy of Marketing Science*, Vol. 18, No. 1, Winter, pp. 51-66.

32. Onkvisit, S. and Shaw, J.J. (1991), 'Is Services Marketing "Really" Different?', *Journal Of Professional Services Marketing*, Vol. 7, No. 2, pp. 3.

33. Parasuraman, A. and Varadarajan, P. (1988), 'Future Strategic Emphasis in Service Versus Goods Businesses', *The Journal of Service Marketing*, Vol. 2, No. 4, Fall, pp. 57-66.

34. Rathmell, J.M. (1966), 'What Is Meant by Services?', *Journal of Marketing* , Vol. 30, October, pp. 32-36.

35. Rushton, A.M. and Carson, D.J. (1989), 'The Marketing of Services: Managing the Intangibles', *European Journal Of Marketing*, Vol. 19, No. 3, pp. 19-40.

36. Sasser, W.E.Jr. (1976), 'Match Supply and Demand in Service Industries', *Harvard Business Review*, November-December, pp. 132-138.

37. Shostack, G.L. (1977), 'Breaking Free From Product Marketing', *Journal of Marketing*, Vol. 41, No. 2, April, pp. 73-80.

38. Thomas, D.R.E. (1978), 'Strategy Is Different In Service Businesses', *Harvard Business Review*, July-August, pp. 158-164.

39. Uhl, K.P. and Upah, G.D. (1983), 'The Marketing of Services: Why and How Is It Different?', *Research in Marketing*, Vol. 6, pp. 231-257.

40. Venkatraman, M. and Dholakia, R.R. (1997), 'Searching for Information in Marketspace: Does the Form - Product or Service - Matter?', *Journal of Services Marketing*, Vol. 11, No. 4/5, pp. 303-317.

41. Weinberger, M.G. and Brown, S.W. (1977), 'A Difference in Informational Influences: Services Vs Goods', *Journal of the Academy of Marketing Science*, Vol. 5, No. 4, Fall, pp. 389-393.

42. Williams, M.R. and Mowen, J.C. (1990), 'The Goods Vs Services Marketing Dichotomy: Fact or Fiction?', in Parasuraman, A. et al (editors), *American Marketing Association Educators' Proceedings*, AMA, Chicago, IL, pp. 355-360.

43. Wyckham, R.G., Fitzroy, P.T. and Mandry, G.D. (1975), 'Marketing of Services: an Evaluation of the Theory', *European Journal of Marketing*, Vol. 9, No. 1, pp. 59-68.

44. Zeithaml, V.A. (1981), 'How Consumer Evaluation Processes Differ Between Goods and Services', in Donnelly, J.H. and George, W.R. (editors), *Marketing of Services*, American Management Association, Chicago, pp. 186-190.

45. Zeithaml, V.A., Parasuraman, A. and Berry, L.L. (1985), 'Problems and Strategies in Services Marketing', *Journal of Marketing*, Vol. 49, Spring, pp. 33-46.

Table 24: Descriptive table of included studies - Characteristics of services

The following table briefly describes the included papers.

The second column (T) identifies the type of study: theoretical (T), empirical (E), and managerial (M). This last type was developed to characterize papers whose intended audience is mainly practitioners, and therefore the reporting of underpinning theory and empirical research is surrogated by managerial implications.

The third column (KD) indicates the knowledge domain in which the paper establishes the main theoretical grounds. The used values are: (MKTG) marketing, (SM) service management, (OPE) operations management, (GM/ORG) general management and/or organizational theory, and (ECON) economics.

The fourth column briefly describes the purpose and the findings of the studies.

PAPER	T	KD	SHORT DESCRIPTION & KEY FINDINGS
Ahtola, 1985	T	MKTG	Argues that a conceptual definition of services is lacking Suggests a theoretical perspective for understanding services using the concept of agent providing the service and the extent to which ownership is transferred during the exchange.
Berry, 1980	M	MKTG	Outlines three distinctive characteristics of services, and their impact on service marketing Services tend to be more intangible than tangible: they are a performance, they cannot be owned. The production and consumption are simultaneous: the how becomes as important as the right place and the right time. And to the extent to which are people based, they tend to be less standardized and heterogeneous.
Berry, 1986	M	MKTG	Practitioner oriented suggestion of seven ideas or best practices for marketing as applied to services businesses. Builds on the difference between selling things (goods) and selling performances (services) to propose seven ideas for services marketing: (1) distinguish the marketing department from the marketing function, (2) leverage the freedom factor (customization), (3) market to employees, (4) market to existing customers, (5) be great at problem resolution, (6) think high tech and high touch, be a power brander

PAPER	T	KD	SHORT DESCRIPTION & KEY FINDINGS
Bowen and Ford, 2002	T	SM	A review of the differences in managerial strategies, practices, and systems of either goods or services producing organizations The review of the literature stresses differences between the management of organizations producing tangible goods and those producing intangible services, all derived form intangibility: differences in service organization assessment, differences in service production strategy, and differences in the service production process,
Bowen, Siehl and Schneider, 1989	T	GM / ORG	Discusses the differences and similarities between goods and services and the organizations that provide them, and suggests the application of a service orientation in manufacturing organizations, as a complement to the manufacturing orientation that has been proposed to services. Five characteristics in which services and goods differ along a continuum: (1) intangible vs. tangible output, (2) customized, non-standardized, heterogeneous vs. standardized output, (3) customer participation vs. technical core buffered from the customer, (4) simultaneity of production and consumption vs. inventory of goods consumed at a later point in time, and (5) labour intensive vs. capital intensive.
Darby and Karni, 1973	T	ECON	Explores the reasons for the temptation to fraud performed by firms selling high credence qualities goods, so as to induce purchases which would not be made if the consumer possessed full information about the qualities of his purchase There are credence qualities of goods which are difficult (costly) to evaluate; as a result, the "fraud" - selling credence qualities and not providing them is a likely output
Dholakia and Venkatraman, 1993	T	MKTG	Discusses marketing practices related to mixed sets of choices (services that compete with goods) The choice sets may be goods dominant, service dominant, or mixed. The inherent differences between services and goods have an influence on the consumer's choice. Suggests that the characteristics of services make it more easy/likely to consumers to prefer the goods alternatives (more tangible satisfaction with the production/consumption process, ownership, evaluation). Services have a higher change of dominating a choice when the benefits they offer are not easily duplicated in a tangible form

PAPER	T	KD	SHORT DESCRIPTION & KEY FINDINGS
Enis and Roering, 1980	T	MKTG	Develops an argument against the dichotomy product-services, and against the uniqueness of services marketing The good/service dichotomy is flawed because there is heterogeneity within classes and homogeneity between classes. There are many cases in which a tangible product can be substituted by an intangible one. Therefore, the dichotomy is not useful for formulating marketing strategies. Instead, the noun "product" should be considered a bundle of goods, services, and ideas. Suggest a model for analyzing the bundle, made of concentric circles: the core product concept, the product differentiation, whether through tangibles or intangibles, marketing mix differentiation, and the potential product as perceived by the consumer. Classifies products according to a dual set of dimensions, from both consumer and marketing perspectives that yields four categories: shopping, convenience, specialty, and preference.
Flipo, 1988	T	MKTG	A theoretical discussion of the meaning of intangibility in relation to the differences between the marketing of services and the marketing of goods Defines intangibility and its effect on the marketing of services and goods. Services are intangible by nature. The impact of tangible and intangible factors on buyer's perceptions is what determines the purity of a service or a good. Intangibility does not always means vagueness nor weakness.
Foxall, 1984	T/M	MKTG	Editorial on the perspectives regarding the differences in the marketing of goods and services The classic four differences between goods and services are not actually distinguishing services from goods; at most, they are additional dimensions along which services (and goods) are differentiated by a matter of degree. Argues for "services" being considered the generic concept and explains the advantages against using "product" as the generic.

PAPER	T	KD	SHORT DESCRIPTION & KEY FINDINGS
Grönroos, 1998	T/M	MKTG	Discusses differences between services and goods based on a open/closed process perspective. Intangibility and heterogeneity are not specific for services, and inseparability and impossibility of stocking follow from the process nature of services. What the customer consumes in a service context is, therefore, fundamentally different from what is the focus of consumption in the context of physical goods. Goods are produced in a closed process, without participation of the customer; services are produced in an open process, in which the consumer is an integral part. To increase the understanding of service processes as solutions to customers' problems and as objects of marketing, proposes that the perceived service quality concept can provide a way to replace the missing product construct with a conceptual framework for planning a customer-oriented process.
Gummesson, 1995	T	MKTG	Presents 5 myths developed by the service quality management discipline: the alleged differences of services and goods, that the quality is free, the variability of service quality, the love factor, and the peanut syndrome The difference is that the customer of a service enters the process before the service is produced or the delivery completed (as opposed to goods when it enters the process only after the good is ready for delivery). Therefore the type and degree of controllability over the process and the output that can be exercised by the provider is different lower, nor more difficult.
Hartman and Lindgren, 1993	E	MKTG	Empirical study to capture the dimensions by which consumers differentiate services and goods The participating subjects simplified the four a priori dimensions (intangibility, perishability, heterogeneity and inseparability) to three evaluative dimensions: the opportunity to customize a purchase, the ease of pre-purchase evaluation, and the wait required to make a purchase. Goods were distinguished from services only on the ease of evaluation dimension. The results show that while consumers perceive significant differences between goods and services, they use evaluative dimensions that are somewhat different from those proposed by the services marketing literature. The study concludes that services marketing strategies which are consumer-driven will be more effective than strategies based on commonly accepted conceptual dimensions of services.

PAPER	T	KD	SHORT DESCRIPTION & KEY FINDINGS
Hill, 1977	T	ECON	Theoretical discussion of the nature of the production and consumption of services as compared with the production and consumption of goods, from an economic perspective, but with strong implications for managerial disciplines (operations and marketing) A service is a change in the condition of an economic unit which results from the activity of another economic unit. Being a change over time, its dimensions are quite different from those of a good considered as a material object, so that goods and services belong in different logical categories. The ownership of a good can be transferred from one economic unit to another in an exchange transaction, whereas no such exchange is possible for a service. A service is produced by one economic unit for another, but it is not exchanged between them. But it is anyway transacted. Models of pure exchange economies are quite irrelevant to services. The idea that services are ephemeral and insubstantial because they are immaterial goods is a persistent and pernicious fallacy. Although they are not themselves physical objects, services may well consist of changes in the physical condition of goods or persons which are, in effect, permanent. Distinguishes services affecting goods and services affecting people.
Hill, 1999	T	ECON	Theoretical proposition of a new taxonomy for economic activity into tangible goods, intangible goods, and services. Discusses the origins of usual misclassifications and misconceptualizations about services and intangibles Builds on a previous paper (Hill, 1977). Services involve relationships between producers and consumers. There cannot be a producer without a consumer. The essential characteristics of a good are that it is an entity over which ownership rights may be established and from which its owner(s) derives some economic benefit. The dictionary definition of an 'entity' is : "a thing that has a real existence; a thing's existence as opposed to its qualities or relations". A service must be provided to another economic unit. The classic characteristics attributed as distinguishing of services are erroneous arguments. Most goods are material objects. However, other kinds of entities exist which have all the economic characteristics of goods. These consist of intangible entities originally produced as outputs by persons, or enterprises, engaged in creative or innovative activities of a literary, scientific, engineering, artistic or entertainment nature.

PAPER	T	KD	SHORT DESCRIPTION & KEY FINDINGS
Iacobucci, 1992	E	MKTG	Empirical test of some basic tenets or truisms held by the service marketing discipline regarding the differences between goods and services, from the customer's perceptions perspective. Several preconceive notions (i.e., assumptions) of properties of services are fairly accurate, but that other assumptions do not hold up as well under scrutiny. Services were shown to be perceived as being (1) comprised of more credence and experience qualities than search qualities; (2) slightly more complex than most goods; (3) only relatively more intangible than goods; and (4) less standard (or more heterogeneous) as purchases. The relationships among these concepts require more complete theoretical explanation. The data also indicate that some goods resemble services on several criteria, which suggests that the continuum of goods to services per se may not be as useful as other, more theoretically interesting dimensions.
Iacobucci, 1996	T	MKTG	An extensive and thorough literature review of 865 articles in services marketing 1986-1998, presented along the SHIP dimensions (simultaneously of consumption and production, heterogeneity, intangibility, and perishability) , and the 7P's of marketing Services are simultaneously produced and consumed, encouraging their study as processes with tools such as flow charting and dramaturgy. Service experiences are heterogeneous, partly due to the people involved. Services are perceived to be intangible, which has implications for consumer's evaluation of quality and their satisfaction.
Jackson and Cooper, 1988	T	MKTG	Discusses differences between consumer and industrial marketing and between product and service industrial marketing, reviewing the classic differences between goods and services Proposes an industrial-consumer matrix: industrial goods, industrial services, consumer goods, consumer services. Industrial marketing is different and unique because the culture or mindset in the organization is different from that on consumer products firms. To the classic SHIP characteristics (simultaneity, heterogeneity, intangibility, and perishability), they suggest to add specialization, and technology.

PAPER	T	KD	SHORT DESCRIPTION & KEY FINDINGS
Jackson, Neidell and Lunsford, 1995	E	MKTG	Empirical study to explore the perception of industrial buyers about the differences between purchasing goods and purchasing services Industrial purchasers perceive some differences between services and goods: in the difficulty for evaluating quality, in the degree of collaboration between parties, and in the available variety. Other classic differences (such as heterogeneity, risk, variability in quality, price as indicator of quality, difficulty for developing specs) were not supported.
Johns, 1999	T	MKTG	Extensive literature review of the use of the term "service" Provider and customer perceive and conceptualize different service meanings, and it is inappropriate to equate them directly. Different service industries are so variable in nature that it is advised to lay down parameters in each situation and give examples wherever possible.
Johnson and Nilsson, 2003	E	SM	Empirical study using ACSI data to explore the relative importance placed by customers on reliability and customization in goods and services Overall customization is more important for goods. Reliability is equally important in all categories (except for pure goods, in which is systematically lower).
Johnston, 1993	E/T	OPE / SM	Discusses the creation of a service offer and the change in the mix of goods and services that may take place in its development. Creation of service offer as a mix of services and products. There may be a mismatch between what the organization thinks it provides and what the customer buys.
Judd, 1964	T	MKTG	Short reflection on a new services definition and basic classification. One of the firsts references to intangibility. Redefines marketing services, as all market transactions other than the transfer of ownership of tangible commodities. Classifies services into rented goods services, owned goods services, and non-goods services.

PAPER	T	KD	SHORT DESCRIPTION & KEY FINDINGS
Judd, 1968	T	MKTG	Theoretical analysis of the differences between product and service retailing. Balanced set of similarities and differences between products and services retailing, considering three aspects: product/service development, sales effort, and pricing. The extent of differences between product and service retailing are greater than can be dismissed as incidental, but the extent of similarities is also substantial.
Langford and Cosenza, 1998	T	MKTG	Proposes a methodology for developing and marketing services leveraging on the goods-like aspects. Services/Goods analysis is a proposed decomposition of a product service into its components, and analysing it against the four classic dimensions that differentiate goods and services. The argument is that there is no need to develop new marketing theories and models for all the "goods-like" components, which can be surprisingly more than expected. The four classic characteristics distinguishing services should not be attached to the service as a whole, but to each element.
Levitt, 1981	M	MKTG	Suggests substituting the dichotomy goods-services for the tangibles-intangibles Distinguishing between companies according to whether they market services or goods has only limited utility. A more useful distinction is about marketing tangibles and intangibles. Suggests that intangibility has impact in both tangible and intangible products. Even tangible, testable, feelable, smellable products are, before they're bought, largely just promises.
Lockyer, 1986	T	GM	A critique on the commonly held differences between services and goods, and a proposal to utilize the "service industry" name for non-financial profit-seeking organizations only The essential distinction of a service industry concerns whether the transformation process is part of a financial profit-seeking or a non-financial profit-seeking enterprise. A service industry is one whose main purpose is the generation of social profit. The debate on the difference between production and services should be abandoned in favour of learning how frequently and easily operations management techniques can be interchanged between the 2 kinds of organizations.

PAPER	T	KD	SHORT DESCRIPTION & KEY FINDINGS
Lovelock, 1981	M	MKTG	Theoretical discussion about the generic differences between goods and services, and the contextual differences in their marketing There are generic (likely to narrow over time) and conceptual (likely to remain) differences between goods and services marketing. Five generic differences can be identified that separate goods from services marketing. These involve the nature of the product itself, how that product is created, the marketer's ability (or inability) to stockpile the product, the nature of the distribution channels for the product, and the relative ease of determining costs for pricing purposes. The contextual differences between goods and services marketing are currently quite significant in many service businesses but they will become progressively less pronounced as service marketing evolves and moves up the learning curve.
Lovelock, Langeard, Bateson, and Eiglier, 1981	E	MKTG	Empirical exploration of managers' perceptions about the interaction of marketing, operations, and personnel function in services organizations. Organizational impacts of the differences between services and goods organizations The consumption of the service as it is produced implies a direct contact between marketing, production (operations) and personnel management. Services field managers (in 3 banks and 1 quick service restaurant) perceived themselves as being involved in the three functional areas.
Middleton, 1983	T	MKTG	Theoretical critique of the goods vs. service debate. Based on the "fast moving consumer services", rejects the four classic characteristics of services as distinctive, claiming that they are very service-specific. Proposes a framework to consider generic mass-produced products (goods and services). Suggest using the convenience/shopping/specialty classification to understand all broadened product.

PAPER	T	KD	SHORT DESCRIPTION & KEY FINDINGS
Murray and Schlacter, 1990	E	MKTG	Experimental study on the differences between services and goods on consumers' perceived risk and variability. Consumers perceive greater overall risk before purchasing services than purchasing goods. Some specific types of risk are also perceived as greater for services than for goods: social, convenience, physical, psychological, and product variability. Two types of risk did not show significant differences: financial and performance. Introduces a technique for operationalization of the service construct, considering the relative proportions that a particular product may have on each dimension (intangibility, non-standardization, inseparability, and simultaneity), and in the perceived dominance of each dimension relative to all other dimensions involved in defining products.
Onkvisit and Shaw, 1991	M	MKTG	Theoretical discussion on erroneous assumptions regarding differences between goods and services, and their implications on the marketing mix Services marketing is different, but only to a certain extent. The marketing characteristics of products and services are a matter of degree. Questions the basic arguments used to point out the differences, giving counter-examples. Explains how the elements of the marketing mix that have been useful for product marketing are equally applicable for services marketing.
Parasuraman and Varadarajan, 1988	E	MKTG	Empirical study to ascertain the differences in manager's proactive strategic thinking between goods and service businesses with respect to (1) the marketing mix, and (2) other functional areas, as perceived by senior managers, and regarding future level of emphasis of their firms. Only three out of sixteen strategic mix options were significantly different: offering a wide variety of products, establishing a distinctive corporate/product image, and personal selling formulation and implementation (in these options services managers said they were going to place more emphasis than goods managers in the future). Five out sixteen functional strategies were different for services: investing in process research and development capabilities, focusing on employee motivation and job satisfaction, attracting and retaining competent personal, focusing on long term profits, and assuring a competitive return to shareholders (last two at p=0.1)

PAPER	T	KD	SHORT DESCRIPTION & KEY FINDINGS
Rathmell, 1966	T	MKTG	Theoretical discussions on the characteristics of services and its impact on services marketing practices There are very few pure products and pure services. Most goods require supporting services in order to be useful; most services require supporting goods in order to be useful. Pure goods and pure services are extremes in a continuum. Outlines some characteristics of the marketing of services.
Rushton and Carson, 1989	T	MKTG	Review of the literature on intangibility of the services, and an interview-based study on marketing implications The three schools of thought regarding the differences between goods and services can be accommodated depending on the level of generalization on a conceptual framework (general marketing concepts, goods marketing and of services marketing, industry specific marketing, situation specific marketing). Reviews the four most frequently cited distinguishing characteristics of services, and focuses on the effects of intangibility of products on marketing elements: product, price, promotion, planning and control.
Sasser, 1976	M	OPE	Reviews some distinctive characteristics of services and their implications in terms of capacity management The main distinctive characteristics of services are: perishability, producer-consumer interaction, non-transportability, and intangibility. Strategies for managing capacity include two major strategies - chase or level, and a set of additional techniques for altering demand and/or controlling supply
Shostack, 1977	T	MKTG	Proposes a "molecular model" for appropriately describing tangible and intangible elements of total market entities. Neither the product or service terms adequately describe the true nature of market entities. The language of marketing is all derived from the manufacture of physical goods, and therefore is unable of coping with the true nature of services. Even the theoretical discussions about intangibility are assuming a product perspective (the "intangible product"). A framework is proposed to identify the tangible and intangible elements that combine to produce a total market entity. The model core combines discrete elements in molecular-like wholes. Surrounding that core, elements of marketing positioning, like price and distribution. The dominance of either set of elements will provide a dominant characteristic to the bundle - thus suggesting a scale of market entities ranging from tangible dominant to intangible dominant.

PAPER	T	KD	SHORT DESCRIPTION & KEY FINDINGS
Thomas, 1978	M	GM	Discusses how pure service businesses are different from product-oriented businesses and why they require different strategic thinking. A pure service business is one in which the service is the primary entity that is sold. The distinction is important because everyone in every type of business sells some elements of service. In pure service businesses any transfer of a physical or concrete product is incidental to the service. Discusses six aspects of strategy which present differences between product and service-businesses: describing services, building barriers, cutting costs, pricing, development, and acquisitions. Presents a classification of services depending on equipment and people based, and by the degree of labour qualification
Uhl and Upah, 1983	T	MKTG	Discusses four key differences between products and services and sets propositions concerning the marketing implications of these differences, as well as the rationale for services marketing as a separate area. The distinguishing characteristics are: intangibility, ability to be stored, ability to be transported, and ability to be mass-marketed. Recognize that the differences are in degree, not in kind, but are more stressed in services-dominated market offerings.
Venkatraman and Dholakia, 1997	E	MKTG	Experimental study to explore the difference in which consumers search for information about comparable (competing) goods and services No differences in information search strategies for purchasing services and goods. Not in the amount of search (potentially due to the dominance of experience qualities against search qualities), not in the source of search (personal vs. non personal), and not in the search strategy (within-source search strategy was preferred for both)
Weinberger and Brown, 1977	E	MKTG	Experimental study on the impact of information about goods and services on the likelihood of purchasing them Individuals' intentions of purchase are more influenced by external information on the quality of services than of goods, both for favourable and for unfavourable ratings or recommendations.

PAPER	T	KD	SHORT DESCRIPTION & KEY FINDINGS
Williams and Mowen, 1990	T	MKTG	Examines three assumptions concerning services: the post-industrial emergence of services, the commonly accepted service characteristics, and the specificity of service marketing problems This paper questions the building a new system of concepts and theories from scratch, and if the differences between the marketing of services and of goods really justifies so. An ANOVA analogy demonstrates that services marketing is no more different from goods marketing than industrial marketing is relative to consumer marketing.
Wyckham, Fitzroy and Mandry, 1975	T	MKTG	Theoretical attack on simple product/service classifications and on the uniqueness of services marketing based on a set of characteristics. Proposes criteria for setting a new more complex taxonomy for offers and for marketing strategies. Simple taxonomies or dichotomies (products/services) are unlikely to be of much value in marketing, as the within group variance may be too large. In terms of marketing, services are not different from products. None of the "classic" characteristics of services provide a marketing uniqueness.
Zeithaml, 1981	T	MKTG	Suggests that quality evaluation for services is different (more difficult) than for goods. Search, experience, and credence qualities represent a continuum that corresponds with difficulty to evaluate. Because of three distinguishing characteristics (intangibility, non standardization, and inseparability of production and consumption), services tend to fall in the credence qualities extreme, and therefore, are more difficult to evaluate than most goods. Develops a set of theoretical propositions regarding specific aspect of the quality evaluation of services: types of information search, evaluation criteria (use of price), smaller evoked set of alternatives, slower adoption of innovations, greater perceived risk, more brand loyalty, and partial self-attribution of dissatisfaction.

PAPER	T	KD	SHORT DESCRIPTION & KEY FINDINGS
Zeithaml, Parasuraman and Berry, 1985	E	MKTG	Empirical test on the perception of service managers about the problems implied in academic literature by the classic four characteristics of services, and about the use of the strategies to cope with them. Service managers did not identify the problems cited in the literature - as result of the four characteristics of services - as relevant to their practice, except for the problem of fluctuations in demand. The literature seems to reflect better on the practices and strategies implemented by services managers rather than on the identification of the relevant problems. Important differences exist among service firms, not just between service firms and goods firms. Reviews authors citing the four characteristics and their implications in terms of marketing.

G. CLASSIFICATIONS OF SERVICES: INCLUDED STUDIES

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Table 25: Descriptive table of included studies - Classifications of services

The following table briefly describes the included papers.

The second column (T) identifies the type of study: (T) theoretical, (E) empirical, and (M) managerial. This last type was developed to characterize papers whose intended audience is mainly practitioners, and therefore the reporting of underpinning theory and empirical research is surrogated by managerial implications.

The third column (KD) indicates the knowledge domain in which the paper establishes the main theoretical grounds. The used values are: (MKTG) marketing, (SM) service management, (OPE) operations management, (ORG) general management and/or organizational theory, and (ECON) economics.

The fourth column briefly describes the purpose and the findings of the studies.

PAPER	T	KD	SHORT DESCRIPTION & KEY FINDINGS
Ahtola, 1985	T	MKTG	Argues that a conceptual definition of services is lacking. Suggests a theoretical perspective for understanding services using the concept of agent providing the service and the extent to which ownership is transferred during the exchange. A subsequent classification depends upon the transfer of ownership or not, and the "humanity" of the agent providing the service.
Bell, 1981	T	MKTG	The applicability of the traditional theories of goods classifications to the service sector is discussed. A broadened goods and services classification is presented, using tangibility (productness) and extent of customer involvement (serviceness) in a 3x3 matrix scheme. Customer involvement dimension: low, differentiated zone, high. It corresponds with a standardization-customization scale.
Bell, 1986	T	MKTG	Similar to Bell (1981) Similar to Bell (1981), with more emphasis on marketing positioning and bundling/unbundling strategies

PAPER	T	KD	SHORT DESCRIPTION & KEY FINDINGS
Bowen and Bowers, 1986	T	ORG	A contingency approach, based on environmental uncertainty, is proposed to classify and understand service organizations The classification uses two sources of environmental uncertainty, customer contact and intangibility. Discusses the fit of organic and mechanistic organizations with regard with this classification.
Bowen and Jones, 1986	T	ORG	Develop a typology for service organizations based on transaction cost analysis, to define the rationale for the inclusion or exclusion of the customer in the service processes. The goal incongruence dimension describes the extent to which either party is motivated to promote its interests at the expense of the other (and avoid cooperative behaviour). The transaction costs theory indicates that the choice of organizing transactions externally (relying on the market) or internally (relying on hierarchies), will follow the lower transaction costs. The performance ambiguity dimension describes the extent to which the dimensions of an exchange are such that is difficult for either party to evaluate the performance of the other. The combination yields four types, Impersonal market (Goal incongruence, low performance ambiguity), Relational market (Low performance ambiguity, goal congruence), Impersonal hierarchy (Goal incongruence, high performance ambiguity), and Relational hierarchy (Goal congruence, high performance ambiguity).
Bowen, 1990	E	MKTG	Empirical taxonomy of services based on customer perceptions Develops a new taxonomy based on a cluster analysis of consumer perceptions. Uses 9 attributes selected from the literature. Finds 3 clusters of services: Group 1 - "high contact, customized, personal service": full service restaurant, full service hotel, examination by doctor, hospital stay; Group 2 "moderate contact, semi customized, non personal service": developing photographic film; Group 3 "moderate contact, standardized service": cafeteria, fast food, budget hotel, movie in theatre, theme park

PAPER	T	KD	SHORT DESCRIPTION & KEY FINDINGS
Buzacott, 2000	T	OPE	Present a descriptive and prescriptive taxonomy for services. The basis is a consideration of how different structures are able to cope with variability and disturbances. One dimension is the structure of the service system in terms of job design: specialized, parallel, and serial jobs, bottom up and top down diagnosis. The other dimension is the nature of the service offering, in terms of complexity and customization. A diagonal suggest the best fit. The different service structures are theoretically analyzed in terms of their ability to cope with an uncertain demand, and measured with the queue performance.
Chase and Tansik, 1983	T	OPE	Proposes a normative model for the design of service organizations, based on the customer contact model Builds on a classification based on the degree of customer contact, which distinguishes pure services, mixed services, and quasi manufacturing services. Develops a series of propositions regarding the preferable design of each type of organization.
Chase, 1978	M	OPE	Uses the customer contact concept to delineate a classification to design different aspects of service systems operations. The extent of customer contact determines the degree of interaction between provider and customer. Customer contact refers to the physical presence of the customer in the system. Extent of contact may be roughly defined as the percentage of time the customer must be in the system relative to the total time it takes to serve him. The greater the extent of contact, the greater the degree of interaction. The classification is based on a single scale from high contact to low contact, producing four types: pure services, mixed services, quasi-manufacturing, and manufacturing.
Chase, 1981	T	OPE	Application of the customer contact model to services. Builds on the customer contact classification to develop propositions regarding potential efficiency. This approach holds that a service system's potential operating efficiency is a function of the degree to which the customer is in direct contact with the service facility relative to total service creation time for that customer.

PAPER	T	KD	SHORT DESCRIPTION & KEY FINDINGS
Collier and Meyer, 1998	T/E	OPE	Theoretically develop a new service positioning matrix using customer wants in terms of freedom and service design in terms of pathways and management control. Empirically test the matrix. A positioning matrix are those in which (1) a superior performance is assumed if the service entity follows a certain pathway (e.g. the diagonal), and (2) a direction of causation is implied by the positioning matrix such as from the product life cycle to the process cycle. Fulfilment of customer wants and needs: high (to low) degree of freedom and decision making power to select a service encounter activity sequence. It is collinear with the degree of repeatability of the service encounter activity sequence. Number of pathways built into the service system design by management: from many customer pathways and low degree of control, to limited number of pathways and high degree of control. Collinear with management degree of control.
Collier and Meyer, 2000	E	OPE	Analytical and empirical comparison of three service positioning matrices. A service positioning matrix is a two dimensional tool with its axes defined in such way that knowing how a particular service is defined on a particular axis may guide the user to the appropriate location in the other axis. The appropriate location is provided by a "superior performance" match that is represented usually in the diagonal. Theoretically compares their clarity of construct definition, the conceptual independence of the axes, and the clarity in specifying the direction of causation. A survey among 65 MBA students is used to test axis unidimensionality and correlation between the two axes
Cook, Goh and Chung, 1999	T	OPE	Review of 39 studies on classifications from 1964 - 1996. Empirically based taxonomies would be desirable (?) and outlines a suggested course of action for achieving that. Note that most typologies only examine the end product / end service, and raise the question regarding the possibility of classifying service organizations according to distinguishing organizational features. Organizes classifications according to different criteria: marketing oriented vs. operations oriented dimensions, organizational ownership (for profit, non profit, public), object of classification (process, product)

PAPER	T	KD	SHORT DESCRIPTION & KEY FINDINGS
Copeland, 1923	T/M	MKTG	First modern classification for goods, based on consumer buyer behaviour. Convenience goods are those customarily purchased at easily accessible stores. Shopping goods are those for which the consumer desires to compare prices, quality, and style at the time of purchase. Specialty goods are those which have some particular attraction for the consumer, other than prices, which induces him to put forth special effort to visit the store in which they are sold and to make the purchase without shopping.
Davis, 1999	T/M	OPE	Discusses a 2x2 typology based on the nature of the task and on the service delivery type. Nature of the task - routine/knowledge, and on the service delivery type - integrated/decoupled, produce four types: Service factory: routine processes tightly integrated in delivery, such as fast-food restaurants, car rental firms; service stores: routine services decoupled or disintegrated in delivery, such as department stores, hotels, airlines; service shops: non-routine knowledge or craft work closely integrated in delivery, such as auto repair, personal services, small professional and consulting services; service complexes: non routine knowledge work that is decoupled in delivery, such as hospitals, large consulting firms, investment banking. Analyses the core competences of each type in terms of the five dimensions pointed by the ServQual studies: reliability, assurance, tangibles, empathy, responsiveness
Davis, Guiltinan and Jones, 1979	E	MKTG	Empirical comparison of typologies based on consumer behaviour characteristics (a la Copeland) - convenience, shopping, and specialty vs. typologies based on product characteristics (a la Aspinwall and later Judd) - price, frequency of purchase, personal or impersonal delivery, and rented/owned/non-goods. Managerial classifications based on service characteristics are of more use than the search construct in delineating consumers' beliefs concerning the helpfulness of various controllable information sources. This finding is of importance because it suggests that knowledge of basic service characteristics may lead to the more effective development of service marketing strategy in terms of media allocation decisions.

PAPER	T	KD	SHORT DESCRIPTION & KEY FINDINGS
Enis and Roering, 1981	T	MKTG	Suggests a classification for generic products (goods and services) as bundles of tangible and intangibles, into four categories, combining both the provider and the customer perspectives Extends Holbrook's classification on goods (convenience, shopping, specialty, and preference) to goods and services. Maps a consumer perspective taxonomy into a marketing strategy taxonomy, overlapping them into the same 2x2 matrix. The consumer perspective is characterized by the expected shopping effort and the perceived risk; the provider perspective by product differentiation (in the core product and in the product offering) and market differentiation(in the augmented product)
Hayes and Wheelwright, 1979	T	OPE	Proposes a matrix for understanding the choice of manufacturing production processes (process life cycle) depending upon the stage of product life cycle The combination seems to indicate a diagonal as the typical or recommended adequacy decisions. The positions off-diagonal seem to be either not economical or not practical; however, a company may seek a position off the diagonal to build some competitive advantage. The diagonal position suggests a narrow position in which to focus operations strategy to increase the chances of success. Different diagonal positions derive into different management problems.
Haynes, 1990	T	OPE	Presents a service transaction typology based on the nature of the interface and the complexity of technology Builds on previous classifications (Schmenner, 1983; Shostack, 1987). The interface can be mechanistic (hierarchical control and communication, precise definition of functional process, and generally, rule-governed operations) or organic (considers interactions with others, delivery of information and advice rather than decisions, and the ability to adjust the functional process at time of delivery to compensate for known limitations by personal intervention). The technology can be simple and complex, and encompasses cost, sophistication, and information content of the technical core aspect of the service being delivered. The combinations are labelled product, project, professional, and personal, in an attempt to label the service transaction instead of the service process. Transaction review allows for equal attention to be given to the three components of services: marketing, human behaviour, and operations, within the framework of interaction and technology characteristics

PAPER	T	KD	SHORT DESCRIPTION & KEY FINDINGS
Haywood-Farmer, 1988	T	OPE	Discusses a model for service quality, based on three elements: professional judgement, people's behaviour, and physical process Builds on previous classifications and suggest a tri-dimensional cube combining the degree of service customization, the degree of labour intensity, and the degree of contact and interaction.
Hill, 1977	T	ECON	Theoretical discussion of the nature of the production and consumption of services as compared with the production and consumption of goods, from an economic perspective, but with strong implications for managerial disciplines (operations and marketing) A service is a change in the condition of an economic unit which results from the activity of another economic unit. Being a change over time, its dimensions are quite different from those of a good considered as a material object, so that goods and services belong in different logical categories. The ownership of a good can be transferred from one economic unit to another in an exchange transaction, whereas no such exchange is possible for a service. A service is produced by one economic unit for another, but it is not exchanged between them. But it is anyway transacted. Models of pure exchange economies are quite irrelevant to services. The idea that services are ephemeral and insubstantial because they are "immaterial" goods is a persistent and pernicious fallacy. Although they are not themselves physical objects, services may well consist of changes in the physical condition of goods or persons which are, in effect, permanent. Distinguishes services affecting goods and services affecting people//Based on conception of services as changes in the condition of an economic unit which results from the activity of another economic unit, develops a series of classifications: services affecting goods or affecting persons, permanent or transitory services, and reversible and irreversible services.

PAPER	T	KD	SHORT DESCRIPTION & KEY FINDINGS
Hill, 1999	T	ECON	Theoretical proposition of a new taxonomy for economic activity into tangible goods, intangible goods, and services. Discusses the origins of usual misclassifications and misconceptualizations about services and intangibles Builds on a previous paper (Hill, 1977). Services involve relationships between producers and consumers. There cannot be a producer without a consumer. The essential characteristics of a good are that it is an entity over which ownership rights may be established and from which its owner(s) derives some economic benefit. The dictionary definition of an 'entity' is : "a thing that has a real existence; a thing's existence as opposed to its qualities or relations". A service must be provided to another economic unit. The classic characteristics attributed as distinguishing of services are erroneously argumented. Most goods are material objects. However, other kinds of entities exist which have all the economic characteristics of goods. These consist of intangible entities originally produced as outputs by persons, or enterprises, engaged in creative or innovative activities of a literary, scientific, engineering, artistic or entertainment nature.
Holbrook and Howard, 1977	T	MKTG	A review of research on frequently purchased consumer nondurable goods and services. Suggest a revised classification of goods, based on consumer's physical effort (shopping) and mental effort (brand insistence) A 2x2 matrix result of combining low and high levels of physical shopping effort and mental effort. Convenience goods are those for which consumers do not spend much effort. Shopping goods are those for which consumers are willing to spend physical effort, but do not have brand preference. Preference goods are those with high brand preference, but little physical effort is expected. Specialty goods are those with merit high both physical and mental effort from the consumer.
Huete and Roth, 1988	E	OPE	Similar to Huete (1987)

PAPER	T	KD	SHORT DESCRIPTION & KEY FINDINGS
Huete, 1987	T	OPE	Presents a matrix to match the design of the front-office portion of a service unit with the service content and customer characteristics The matrix is based on the product-process and on the customer contact model. Two dimensions: (1) the potential standardization of the service content, ranging from low to high, which is directly related to the customer knowledge about the service encounter, and inversely related to the service complexity; and (2) the production efficiency of the delivery channels, which is related to the degree of human customer contact and the use of technology, with discrete steps ranging from professional face-to-face to remote self-service technology. A service business unit, a product/service line, or the de-bounded elements of a single service can be characterized as occupying a particular region in this matrix, as determined by its service content characteristics and its delivery option.
Johnston and Morris, 1985	T	OPE	Analysis of managerial problems faced by service industries. The dimensions of the 2x2 matrix are the degree to which a service organization is product-oriented or process-oriented, and the standardization/customization position. Provide insights on each type regarding common management problems, focusing on operational control aspects. Discusses the existence of a mismatch between the customer's and the organization's perceptions about the actual type of organization.
Kellog and Nie, 1995	T	OPE	Proposes a 2x2 typology using the service package structure defined as degree of customization, and the service process structure, defined as degree of customer influence. The Service process dimension, or "How" services are created, it's operationalized as customer influence, and discretized in: expert service: high customer influence, service shop: medium customer influence, and service factory: low customer influence. The Service package dimension, or "What" is created, it's operationalized as the degree of customization: unique or full customization; selective, considerable customization, restricted, limited customization, and generic, little or no customization. Argue for a positioning fit in the diagonal, and develops propositions for each position on management issues: technology choices, capacity management, facility layout criteria, positioning strategy.

PAPER	T	KD	SHORT DESCRIPTION & KEY FINDINGS
Larsson and Bowen, 1989	T	ORG	Develops a typology of service design interdependencies, from a contingency theory perspective Critique many service organization typologies in that they are developed as definitional classifications of alternative designs that are outside of a contingency framework. As an alternative, suggest a classification of the service organization-customer interface. Two contingent sources of uncertainty: diversity of demand, and customer disposition to participate. These external factors can be matched with other two interdependence patterns, selected by the organization: division of work into back-office work, front-office work, and customer work, and the design of customized vs. standardized interdependencies. Finally, a second match is suggested between those four types, and a portfolio of coordination mechanisms.
Lovelock, 1983	T/M	OPE	Proposition of five classification schemes for services, based on five sets of questions. Implications for marketing and operations The five classifications are presented in 2x2 matrices based on: (1) the destinatary of the service (person's mind and person's assets) and the nature of the service act (tangible/intangible); (2) the type of relationship between service organization and customers (membership or no formal relationship), and nature of service delivery (continuous delivery of service, discrete transactions); (3) the extent to which service characteristics are customized (high, low) and the extent to which customer contact personnel exercise judgement in meeting individual customer needs; (4) the extent of demand fluctuations over time (wide, narrow) and the extent to which supply is constrained (peak demand can usually be met without a major delay, peak demand regularly exceeds capacity); and (5) the availability of service outlets (single site, multiple sites) and the nature of the interaction between customer and service organization: customer goes to the service organization, service organization comes to customer, customer and service organization transact at arms' length (mail or electronic communication)

PAPER	T	KD	SHORT DESCRIPTION & KEY FINDINGS
Maister and Lovelock, 1982	T/M	ORG	A theoretical discussion on types of facilitator services - industries that are in the business of facilitating market transactions. Classifies facilitator services in a 2x2 matrix wit extent of client-contact (low/high) and extent of customization (low/high). The resulting quadrants are "factory" (low/low), "professional service" (high/high), "mass service" (low customization and high contact), and "job shop" (high customization and low contact).
Mersha, 1990	T	OPE	Revises the customer contact model to overcome some of the criticisms The revised degree of customer contact differentiates active and passive contact between the customer and the service provider. Typically, active customer contact leads to customization. Passive contact typically implies the customer being in the provider facility, but is amenable to more standardization.
Mills and Margulies, 1980	T	ORG	Develops a typology of service organizations based on the interface between the service employee and the customer at the level of the organization's workflow Organizational workflow is the production and distribution of output. Three types are distinguished. Maintenance-interactive: cosmetic, continuous interaction between employee and customer/client in which the focal point is building trust or confidence in an attempt by the organization to sustain the relationship for an indefinite period. Task-interactive: relatively concentrated interaction between employee and client/customer in which the focus is on the varied techniques possible in problem solving. The focus is on the tasks to be performed. Personal-interactive: personal nature of the problem brought to the employee decision unit by the client. The interaction focuses on the improvement of the client direct intrinsic and intimate well being (legal, medical, counselling)
Morris and Johnston, 1987	T	OPE	Discusses the differences between services and manufacturing, and classifies all operations in terms of the inputs that are processed Both manufacturing and services combine customer processing operations, information processing operations, and material processing operations. Analyses the characteristics of product and process aspects in terms of their tangible and intangible dimensions.

PAPER	T	KD	SHORT DESCRIPTION & KEY FINDINGS
Murphy and Enis, 1986	T	MKTG	Suggests a unified taxonomy for products (goods, services, and ideas). Extensive review of literature on product (especially goods) classifications. Extensive argument supporting the effort and risk dimensions. A unified typology for products as goods, services, and ideas, into convenience, preference, shopping, and specialty, using customer effort and perceived risk as classifying dimensions. Compared to related classifications, suggest a slight difference in the allocation of types to values of the dimensions, producing an offset 2x2 matrix.
Schmenner, 1986	T	OPE	Classifies service businesses according to their labour intensity and the degree of interaction and customization. The combination of dimensions yields a 2x2 matrix: service factory, service shop, mass services, and professional services. Observes a trend on firms to position themselves closer to the diagonal (service factory - professional services), and a trend of moving up the diagonal (towards service factory)
Schmenner, 2003	T	OPE	Redefines Schmenner's 1986 service process matrix, and uses the theory of swift, even flow to explain the modifications. The theory of swift, even flow holds that the more swift and even the flow of materials (or information) through a process, the more productive is that process. Productivity for any process - labour, machine, materials, or total factor - rises with the speed by which materials (or information) flow through the process, and falls with increases in the variability associated with the flow, be that variability associated with demand on the process or with steps in the process itself. The longer the throughput time, the more likely waste of all types bogs down the swift flow of materials. Degree of interaction and customization translates to degree of variation. Degree of labour intensity transforms to relative throughput time, because the goal cannot be to lower the labour intensity, but to squeeze the waste out of the service processes. The measure of throughput time depends on the industry. This re-fashioning of axes, especially the y-axis, affects the classification of services companies within the matrix. The labels of the four types are the same. The managerial implications are the same.

PAPER	T	KD	SHORT DESCRIPTION & KEY FINDINGS
Shostack, 1987	T/M	OPE	Strategic positioning of services through the analysis of service processes. Analysis of service process regarding their complexity - the steps and sequences that constitute the process, and their divergence - the executional latitude or variability of those steps and sequences. Discusses the plausible strategic changes for each cell of the 2x2 matrix.
Silvestro, Fitzgerald, Johnston and Voss, 1992	E/T	OPE	Suggest a measure of volume activity in services as an integrating dimension for classifications The number of customer transactions per service unit per day serves as a key dimension for a service typology, as a simile to the product-process matrix for manufacturing. The vertical axis is a combination of descriptive characteristics of the service processes: people intensiveness, contact time, customization, discretion, front/back office type, product/process orientation. Three types are suggested as a best-fit diagonal: professional services, service shop, mass services. Test the viability of this measure with 11 case studies.
Stell and Donoho, 1996	E	MKTG	Empirical test of an existing typology (Murphy and Enis, 1986): convenience, preference, shopping, specialty The typology serves to categorize different services, although it gets slightly modified. It modifies the original dimensions and values of perceived risk and consumer buying effort. Modifies the characterization of the four types.
Tinnila and Vepsalainen, 1995	T	OPE	A normative model service process analysis is proposed using type of delivery channel and type of service in terms of customization. A diagonal match is suggested between degrees of service customization and types of delivery channel. Each match is characterized as a different type of process. The efficient match reflects a trade-off between production costs and transaction costs involved. The resulting processes are named adaptive process, focused process, flexible integrated process, fast routine process

PAPER	T	KD	SHORT DESCRIPTION & KEY FINDINGS
van Dierdonck and Brandt, 1988	T	OPE	Discusses the convenience of applying the focused factory concept in services Many classifications have been developed to position service delivery systems within the service concept. Many of the schemes, however, are too broad and too obvious to help. Suggest that instead of describing a typical delivery system within a particular industry, they should focus on how to distinguish companies within industries.
Verma and Boyer, 2000	E	OPE	Empirical assessment and test of the predictive accuracy of the Service Process Matrix (Schmenner, 1986) Partial support to the SPM, somehow better predictive power, still services fuzzier than manufacturing
Wemmerlöv, 1990	T	OPE	Proposes a multidimensional classification based on the customer contact, the degree of routinization of the tasks, and the objects processed Builds on a combination of the customer contact model, the technology-structure literature, and the introduction of variability by the object being processed. Proposes a multidimensional classification based on the customer contact (non-existent, indirect, direct), the degree of routinization of the tasks (rigid service processes, fluid service processes), and the objects processed (goods, information, people). Gives managerial implication in each combination
Wyckham, Fitzroy and Mandry, 1975	T	MKTG	Theoretical critique on simple product/service classifications and on the uniqueness of services marketing based on a set of characteristics. Proposes criteria for setting a new more complex taxonomy for offers and for marketing strategies. Simple taxonomies or dichotomies (products/services) are unlikely to be of much value in marketing, as the within group variance may be too large. In terms of marketing, services are not different from products. None of the "classic" characteristics of services provide a marketing uniqueness//Suggests that taxonomies of consumer and industrial offerings should be based on multidimensional product and services characteristics and market characteristics. Also suggest that a relationship should be mapped with marketing strategies taxonomies, in which each cluster of the offering taxonomy corresponds with a cluster of the marketing strategies taxonomy

PAPER	T	KD	SHORT DESCRIPTION & KEY FINDINGS
Zvegintzov, 1983	T	OPE	Theoretical/rhetorical discussion on the validity of classifying service industries One of the purposes of classifications is to transfer knowledge and successful practices from one industry to another, both within the same type, although this approach may not be welcome among practitioners. Describes five types of services: quasi-production, agency, temporary use, advisors, and church.

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