Toward a deeper understanding of service marketing: The past, the present, and the future

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ARTICLE INFO

ABSTRACT

The authors investigate the intellectual pillars of service marketing and its evolution through key subareas during 1992–2009 using a citation-based approach. They derive insights for the most promising research directions. The results reveal the dynamic influences of different research topics on service marketing. In a graphical representation, the authors further show that the main topics have changed their research orientations over time. For example, the literature on online service & technology infusion reveals an increasingly operational and customer-focused orientation. A citation-based measure of the significance of research opportunities and a comparison with the topics found in recent literature reviews indicate that research on managing business-to-business services & service infusion, complaint handling & service recovery, and enhancing and managing the service value chain are promising topics. These results assist academics and practitioners by revealing what we know about service research and what we need to know in the future.

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Introduction

The increasing importance of services for the growth and prosperity of most of the world's economies appears prominently in the course of daily business. By providing services, firms can raise revenues and market share, even in turbulent, competitive environments (Fang, Palmatier, & Steenkamp, 2008). Therefore, manufacturing companies increasingly seek to attain a sustainable competitive advantage through service offerings (Reinartz & Ulaga, 2008). As the relevance of services continues to grow, research in service marketing becomes increasingly critical (Ostrom et al., 2010).

Service marketing emerged as a distinct subfield of the marketing discipline in the late 1970s (Brown, Fisk, & Bitner, 1994; Shostack, 1977). However, its importance for the entire marketing field has become apparent in the ongoing discussion about service-dominant logic (Vargo & Lusch, 2004). This discussion places the service discipline on the marketing agenda and reveals the intellectual bonds between service academics and the marketing field. This ongoing discussion of a new logic for marketing makes it ever more important to gain deeper insights into the structure of the service research field, especially for

academics who are not experienced with the insights that service marketing provides and the benefits from its key topics for the field of marketing. Thus, we assert that a comprehensive analysis of the current state of service literature is worthwhile for both academia and practitioners who need to understand the intellectual pillars of service marketing and the progression of the field.

Some researchers have offered comprehensive literature reviews of the service discipline (e.g., Brown et al., 1994; Fisk, Brown, & Bitner, 1993; Grove, Fisk, & John, 2003; Rust & Chung, 2006). These studies have mainly determined the state of service marketing according to ratings by experts or the authors themselves (e.g., Fisk et al., 1993; Grove et al., 2003). Whereas some quantitative studies note the identity of service marketing journals (Svensson, Slåtten, & Tronvoll, 2008) or topics researched in specific journals (Furrer & Sollberger, 2007; Pilkington & Chai, 2008), little research has delved into the intellectual basis and evolution of service research or determined research agendas using quantitative measures such as citation databases. Citation data can offer objective insights and unveil research topics currently undetected by expert evaluations; its use has been recommended as a complement to literature reviews (Tellis, Chandy, & Ackerman, 1999). We provide a quantitative view of the current state of the discipline and a glimpse into the future, based on citation data. Furthermore, we compare our findings to the topics recommended in recent articles and academic conferences to show where our findings are similar and where our data reveal distinct results.

Our quantitative approach relies on citation data from top-tier service and marketing journals over the timeframe 1992–2009. The

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use of citations is worthwhile because citations provide "frozen footprints in the landscape of scholarly achievement; footprints which bear witness to the passage of ideas" (Cronin, 1981, p. 16) that indicate knowledge exchanges among scholars. Citations also reflect developments in a field over time and offer insights into emerging research topics by exhibiting trends in citation patterns (Judge, Cable, Colbert, & Rynes, 2007). We consider several research questions in this realm: What are the most influential works and topics in service marketing? How has the service field evolved over time? What will be the next important topics in service marketing?

This article provides several key contributions from service marketing, methodological, and practitioner perspectives. Researchers and practitioners may gain an overview of existing concepts and insights from service marketing, which may be helpful in light of the explosion of publication outlets that makes it increasingly difficult to keep track of important new insights. Moreover, practitioners can glean key insights regarding important areas for their daily business. To summarize our overview, we provide a graphical representation of the evolution of service marketing that illustrates the intellectual exchange of ideas. This compressed view of the field can help scholars and practitioners who are new to this area to grasp its evolution more easily.

From a methodological perspective, we adopt a longitudinal orientation based on Poisson log-multiplicative models (Pieters, Baumgartner, Vermunt, & Bijmolt, 1999), which enables us to consider the time heterogeneity of the influence of articles and their interrelationships simultaneously. Unlike previous studies that have discussed different periods independently, we link the time periods through a procrustes analysis to draw a dynamic picture of the field and derive research trends. In addition, we employ a measure of upcoming articles and promising research fields that uses citation data to predict potentially influential work. This new measure offers deeper insights into the question of what will be next in the research field.

Literature review

Prior studies have used various approaches to determine the structure and evolution of a research field. The most prominent approaches are comprehensive literature reviews (e.g., Chase & Apte, 2007; Fisk et al., 1993; Heineke & Davis, 2007; Rust & Chung, 2006), insights based on ratings by experts from academia or management (e.g., Grove et al., 2003; Ostrom et al., 2010), and database analyses of citations or journals (Furrer & Sollberger, 2007; Pilkington & Chai, 2008; Svensson et al., 2008).

Although expert ratings and comprehensive literature reviews provide insights and are good sources for identifying future research directions, they suffer some shortcomings. First, they are often limited to a small group of academics or practitioners discussing the future of the research field (Podsakoff, MacKenzie, Bachrach, & Podsakoff, 2005). These few, albeit experienced, academics or practitioners comment on the entire research field, which likely limits the representativeness of the results. Second, experts' ratings might be biased toward their own area of interest and expertise (Nerur, Rasheed, & Natarajan, 2008). Third, expert ratings can be biased by the strategic responses of the participants (Baumgartner & Pieters, 2003), such that participation in a study increases the possibility that the expert will promote a particular research direction (Podsakoff et al., 2005).

Citation-based approaches can complement some of these shortcomings of expert ratings or comprehensive literature reviews. First, these approaches offer reliable results, in the sense that there is no interrater bias or strategic response behavior by study participants (Baumgartner & Pieters, 2003). Second, because the data can be retrieved from existing databases, citation data are more readily available than survey evaluations. Thus, citation-based approaches can trace recent developments of a research topic and enable the

researcher to draw large sample sizes from a broad spectrum of research, which can decrease random error in the results (Podsakoff et al., 2005). Third, citations offer the possibility to apply quantitative analyses. In explorative studies, citation analyses might uncover relationships among articles, show the evolution of a research field, or demonstrate the convergence of established research topics (Nerur et al., 2008). In a confirmatory context, they can also test and verify propositions derived from theory or expert ratings (e.g., Stremersch, Verniers, & Verhoef, 2007). Fourth, citation patterns can be tracked over time, which enables researchers to conduct trend analyses and thereby derive insights into future directions (e.g., Ramos-Rodríguez & Ruíz-Navarro, 2004). In this sense, citation analyses can structure a research field on the basis of objective, reliable data, such that these analyses may detect undiscovered trends through quantitative analysis.

Although citation analyses are well-established, reliable measures of academic influence (Tellis et al., 1999), they are not substitutes for literature reviews or expert surveys. As White and McCain (1998) emphasize, citation analyses could never substitute for extensive reading and elaborate content analyses. Rather, they complement and validate literature reviews based on expert judgments or other qualitative approaches (Nerur et al., 2008). Our approach, therefore, offers an alternative view of the service discipline, and we compare our results with topics outlined in prior studies accordingly (see Table 5).

Method

To address our research questions, we incorporate different components to identify the most influential works and topics, to show the evolution of the research field over time, and to identify the next important research topics in service marketing.

Model description

To analyze the structure and evolution of a research field, we turn to a model proposed by Pieters et al. (1999). In their inferential statistical approach, the authors use a row-column association model to estimate the influence of different journals over time. This model, initially proposed by Goodman (1985, 1987), is a special form of Poisson log-linear models that enables an analysis of cross-classified data and determines associations among variables by means of a multiplicative term (which makes it a log-multiplicative model). Moreover, the model can handle a substantial fraction of zero counts— a relatively common scenario in analyses of cocitations (Agresti, 2002). However, unlike Pieters and Baumgartner (2002) and Pieters et al. (1999), we are interested in evolution at the individual article level. Moreover, with principal component analysis (PCA), we detect research topics based on article citation patterns and derive their dynamics by combining the results of the PCA and the log-multiplicative model. Unlike previous studies, we also combine the different time periods with a procrustes analysis to reveal the evolution of the research field in a graphical representation. Finally, we provide a measure based on a growth rate estimation of influence and uniqueness that indicates each topic's future research potential.

To analyze the cocitation structures of a research field, we base our analysis on the citation–cocitation matrix of cited articles. Two references are cocited if they both appear in the same article (White & McCain, 1998). Thus, a cocitation pattern indicates an intellectual bond between researchers or research topics as well as the influence of a single article on a broader research field. The citation–cocitation matrix represents the frequency of citations and pairs of cited papers such that every row and column represents one cited article. Thus, the off-diagonal elements reveal how often article i appears cited together with article j (i.e., cocitation), and the diagonal elements indicate the citations of the article itself. In this context, the citation–cocitation

matrix is inherently symmetric (i.e., if article i is cocited with article j, article j is also cocited with article i), and we can build a citation–cocitation matrix separately for every considered time period t.

A citation–cocitation matrix can be seen as a cross-classified table of count data, where the observed response variable y_{ijt} represents the cocitation counts in the citation–cocitation matrix; indicator i denotes the cited row article ($i = 1, …, n$) and indicator j denotes the cited column article ($j = 1, …, n$) at time period t ($t = 1, …, T$). The count data can be analyzed by means of a Poisson log-multiplicative model, which is expressed as a generalized linear model (GLM; for more details on the GLM, see Agresti, 2002). In the GLM, a model is specified by a systematic component (i.e., the relationship between the explanatory variables and the expected value of the response variable $E(y_{ijt})$ transformed by a monotonic link function) and a random component (i.e., a probability distribution of the response variable from the exponential family). Thus, for the random component of a Poisson log-multiplicative model, the response variable follows a Poisson-distribution with the parameter μ_{ijt}, where μ_{ijt} represents the expected value of the response variable (i.e., $y_{ijt} \sim Pois\,(\mu_{ijt})$, meaning that $y_{ijt} = E(y_{ijt}) + \varepsilon_{ijt} = \mu_{ijt} + \varepsilon_{ijt}$, where ε_{ijt} denotes the random residual with expected value of 0). The systematic component with the link function (here, $\log(x)$) of our model is illustrated in Eq. (1) (Clogg & Eliason, 1987; Goodman, 1987, 1991; Pieters et al., 1999). The model parameters are obtained by maximum likelihood (ML) estimation, which can be calculated by an algorithm implemented in the software package LEM (Vermunt, 1997).

$$\log\left(\mu_{ijt} / z_{ijt}\right) = a + u_{it} + u_{jt} + d_{ijt} + \sum_{m=1}^{M} \xi_{it}^m \psi_t^m \xi_{jt}^m \qquad (1)$$

$$\forall i, j, t : z_{ijt} = \begin{cases} 0 & y_{ijt} = structural\ 0 \\ 1 & otherwise \end{cases}.$$

Hereafter, we explain the different model parameters. In Eq. (1), variable z_{ijt} is a given structural weighting factor that considers structural zeros and will be explained later. The parameters a, u_{it}, and d_{ijt} are log-linear parameters that are estimated in the model based on the observed cocitation counts. The term a is the constant element of the model, whereas u_{it} accounts for the effect of the row article i and u_{jt} indicates the influence of the column article j on the expected frequency of cocitations of two articles during time period t. The elements of the vector $u_{\cdot t}$ measure the strength of the article's influence on the citation pattern of the entire matrix. We refer to this effect as the influence factor u_{it} of article i. An article has greater influence if it is cited often and widely together with articles from all areas of a research field.

The parameter d_{ijt} controls for the effects of the diagonal elements of the citation–cocitation matrix during t (i.e., $d_{ijt} = 0$ for $i \neq j$) and thus indicates the uniqueness of an article within the research field (d_{it}, hereafter). Uniqueness signifies that the individual citations of an article are relatively high in comparison with its cocitation with other articles in the field. Thus, articles with high uniqueness are cited with a relative lack of connection to the rest of a research field. This citation pattern appears "atypical" or unique (Hoffman & Holbrook, 1993).

Finally, the log-multiplicative term $\sum_{m=1}^{M} \xi_{it}^m \psi_t^m \xi_{jt}^m$ represents the associations between the row and column articles of the matrix in an M-dimensional space ($m = 1, …, M$) (Becker & Clogg, 1989; Goodman, 1987, 1991) consisting of the article score vector ($\xi_{\cdot t}^m$) and the intrinsic level of article associations (ψ_t^m) in dimension m within the time period t. Because the citation–cocitation matrix is symmetric, we do not distinguish between the row or column score vector, and we obtain only one score vector ($\xi_{\cdot t}^m$). In the following sections, we refer to ξ_{it}^m as the article score of article i. The article scores (ξ_{it}^m) can illustrate articles' associations in an M-dimensional graphical representation. Thus, the multiplicative term of the log-multiplicative

model enables us to track groups of articles over time in a joint, low-dimensional space.

In the context of a longitudinal cocitation analysis, it is possible that in some time periods, specific cocitation pairs cannot be observed if one of the articles was not already published. Consider an example: Heskett, Jones, Loveman, Sasser, and Schlesinger (1994) and Kamakura, Mittal, De Rosa, and Mazzon (2002) both published influential articles that pertain to the service profit chain and are often cocited. However, during 1994–2001, it was impossible to observe any cocitation of these two articles because the latter source had not yet been published. Such observations of zero counts are labeled structural zeros because they are impossible by definition (Agresti, 2002). For the specification of the GLM, this implies that in this case, the observed frequency of zero is not random (i.e., $y_{ijt} = \mu_{ijt} + \varepsilon_{ijt}$; $\forall i$, j, t:$\varepsilon_{ijt} = 0$ for $y_{ijt} =$ structural zero). In the model specification, we consider structural zeros by introducing a structural weighting factor z_{ijt}, which equals 0 if either article i or j was not published during time period t and 1 otherwise (see Eq. (1)). This ensures that estimated frequencies of structural zeros are actually zero and that Eq. (1) is only fitted for valid cases of cocitation pairs for which the structural weighting factor is 1. This issue of structural zeros has already been considered in log-multiplicative models in the literature (e.g., Becker, 1990; Clogg & Eliason, 1987; Pieters et al., 1999; Vermunt, 1997).

In general, our analysis of citation data is based on three parts: the identification of article influence and uniqueness, the detection of research topics and their article associations, and the positioning of articles in a literature space.

Identification of article influence and uniqueness

We estimate article influence and uniqueness with a log-linear model based on the citation–cocitation matrices that include the influence factors u_{it} and uniqueness factors d_{it} for the different periods. To ensure that we have identified the parameter estimates and that the effect sizes are comparable across different time periods, we express the estimates as deviations from the average effect for each time period (Vermunt, 1997). We determine the average influence of an article ($\bar{u}_i$) on the basis of the mean of its influence parameter estimates since its appearance.

Detection of research topics and their article associations

We identify the most prominent research topics in service marketing by applying a PCA to the citation data. With the PCA, we detect components that can explain most of the variation of the analyzed variables (here, citations of particular articles). The PCA has some advantages over traditional cluster analytic methods (White & McCain, 1998); for example, it provides quantitative measures (i.e., component loadings) of how well an article represents a specific research topic. Furthermore, the PCA does not require that an article be assigned to a research topic exclusively; it is possible for an article to be associated with two or more research topics, which would signify that an article has more than one focus, as indicated by high cross-loadings (e.g., Dabholkar and Bagozzi, 2002 deal with both technological infusion and customer coproduction). We use the PCA to identify research topics and the component loadings of the PCA to weight the article's influence on a research topic.

To detect the research topics and reveal their evolution over time, we need a categorization that is consistent over the entire time frame. Therefore, we use the citation–cocitation matrix of the entire time frame as a database to enable us to detect research topics by means of a PCA. A common problem associated with applying PCA to a correlation matrix of citation data is that widely cited articles dominate the citation–cocitation matrix C. To address this problem, the Salton transformation expresses any cocitation in relationship to all citations of the two incorporated articles (i.e., $S = diag(C)^{-1/2} \times C \times diag(C)^{-1/2}$, where

$diag(C)$ stands for a diagonal matrix with the diagonal elements of C as entries; see also Glänzel & Czerwon, 1996). Ahlgren, Jarneving, and Rousseau (2003) showed that using standard correlation matrices in citation analyses is inferior to using a Salton transformation to handle inequalities between citation frequencies and a substantial fraction of zero counts in a cocitation matrix.

We apply the PCA to the transformed citation–cocitation matrix S. We do not expect different research topics to be independent, so we use a Promax rotation with the results of the PCA (Baumgartner & Pieters, 2003). To derive the influence of a research topic on the research field, we consider the mean influence of all service articles associated with that research topic (i.e., absolute component loading of at least .30). Then, to consider the different contributions of the articles to a research topic, we weight the mean by the proportional share of the component loadings of these articles. Articles more strongly associated with a research topic thus more powerfully determine the research topic's influence.

Positioning articles in a literature space

We estimate the log-linear model with the log-multiplicative term $\sum_{m=1}^{M} \xi_{it}^m \psi_t^m \xi_{jt}^m$ to determine the graphical representation of the evolution of service marketing. We identify the number of dimensions M of the graphical representation according to the Bayesian information criterion for log-multiplicative models ($BIC = L^2 - df \log n$) (Vermunt, 1997).[2] Because the score estimations ξ_{it}^m of the log-multiplicative model are rotation invariant for the individual period, they cannot be plotted directly in a joint graphical representation to exhibit the trends of the research field. Hence, we employ a procrustes analysis and adjust the estimations for each time period according to the previous period (Baumgartner & Pieters, 2003). We use the transformed score estimations ξ_{it}^m of the multiplicative term as the coordinates of an article in the M-dimensional space. Because the log-multiplicative term is estimated simultaneously with the article influence and uniqueness, the results for article positioning in the graphical representation are not confounded with the article's influence or uniqueness. This is an advantage over other methods such as MDS. The multiplicative term of the log-multiplicative model enables us to track article associations over time in a joint, low-dimensional space. To illustrate the evolution of the research topics within the M-dimensional space, we calculate the centroid position of all articles associated with that topic (i.e., absolute component loading of at least .30) weighted by the proportional share of the component loadings from the PCA. We then use the centroid developments to illustrate the movements of research topics in the literature space.

Identification of emerging topics in service research

We are interested in identifying emerging topics in service research. Therefore, we consider the temporal variations of an article's uniqueness and influence as important indicators, according to the following rationale: new research topics need time to be adopted by the research field. Thus, an article that introduces a new topic should be cited in a limited group of articles first, implying high uniqueness. If this article is cited in just a few other articles, its influence is limited. Thus, for the periods immediately after publication, we expect high uniqueness and low influence factors. When the topic of an article becomes more popular (i.e., receives more attention in the scientific community), that article should be increasingly cited, so its influence factor should increase. If the topic is emergent, it also might be adapted to various research themes, which implies decreasing uniqueness. In summary, we expect two general developments for

an emerging article: increasing influence and decreasing uniqueness. This rationale implies that uniqueness or influence alone cannot identify promising future trends. Their interplay provides insights into possible upcoming articles and thus future trends. These contrary developments of uniqueness and influence should enable us to identify articles that represent prospective research topics.

For the prospect factor, we develop a measure that describes this contrary development mathematically. To capture the citation pattern, we use the product between the growth rate of the influence (δu_i) and uniqueness (δd_i) factors. Because this product would be a negative value for emergent articles, we multiply it by a scaling factor, which ensures that the prospect factor is positive for articles whose influence is growing. If the influence of an article is decreasing, it indicates reverse development of an emergent article such that the article no longer is widely cocited in the scientific community. In this case, the prospect factor should be zero. The same scaling factor could be expressed by means of the article's uniqueness. Thus, we define the prospect factor of an article as follows (see Eq. (2)):

$$prosp_i = -\frac{1}{2}\left(\frac{\delta u_i}{|\delta u_i|} + 1\right) \cdot \delta d_i \cdot \delta u_i \tag{2}$$

The prospect factor must be greater than or equal to 0. In this equation, the first component is the mentioned scaling factor, and the last two components reflect the growth rate of an article's influence and uniqueness. Thus, higher prospect factor scores signify that the specific article will have increasing importance in the near future. We estimate the growth rates using the slope estimation of the univariate regression model (i.e., regressed on time) through a weighted least square (WLS) approach, which can consider variation in the estimates (e.g., heteroscedasticity) (Wooldridge, 2008). Specifically, we weight by the reciprocal of the variance of the log-linear model estimates for every time period: $w_t = \left(\frac{1}{n}\sum_{i=1}^{n} (u_{it} - \overline{u_t})^2\right)^{-1}$.

Discussion of the cocitation approach

Our approach offers some advantages over prior descriptive citation analyses. First, we can test the citation structure simultaneously over time, which means that our model explicitly integrates time dependency and can identify temporal trends, unlike traditional citation approaches that estimate the research structure for every time period independently (Pilkington & Chai, 2008). From these trends, we can derive a measure for each article that indicates its research potential. Second, we estimate the general influence of articles and their interrelations simultaneously, and then we use these results to generate a graphical representation of the associations among articles that illustrates the relationships of research topics in a small-dimensional space. Third, our method relies on an inferential statistical approach such that we can test its adequacy and determine the most appropriate model specification according to global fit measures. Fourth, we test for the article's general influence on the entire research field; an article we identify as highly influential must have a significant effect on all other publications in the discipline. Therefore, the article's influence cannot be biased by citations in citation circles. Fifth, our analysis is at a disaggregated data level, which means that we do not exclude any information about the citation, as might happen with a data aggregation at an author level (i.e., author citation analysis) or a journal level (e.g., journal ranking). In this way, we differentiate the works of well-published authors in various research subfields, and we detect articles that link different subfields and build bridges across research areas. Sixth, we do not exclude articles for methodological reasons. Many previous cocitation approaches have included only articles that exist for the entire observed time frame (e.g., White & McCain, 1998), whereas we incorporate all articles that appeared at any point during the considered period. In the following sections, we describe the data

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[2] Unlike in the PCA, we consider parameters for every time period in the log-multiplicative model. With these additional parameters, we expect fewer dimensions to describe the article associations compared with the number of PCA components.
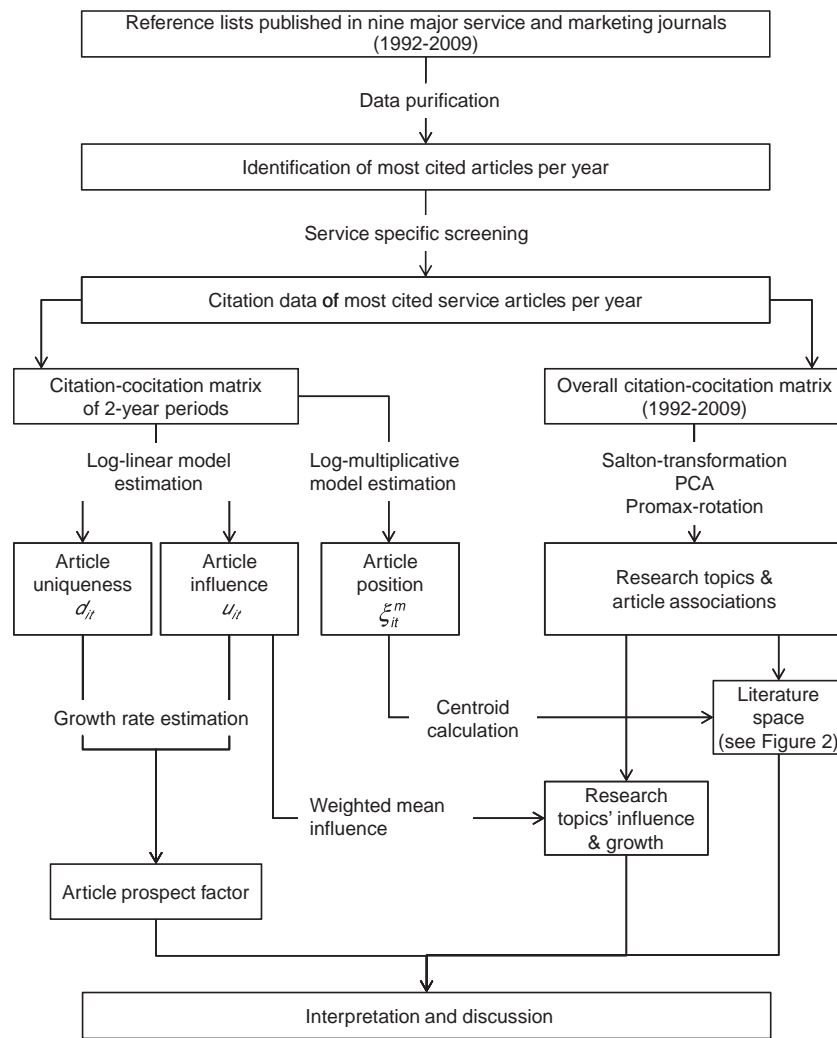
Fig. 1. Overview of analysis.

collection and preparation process for our study and outline the different analyses we executed, as illustrated in Fig. 1.

Sample and data basis

We compiled reference lists for all articles published in top peer-reviewed marketing journals (*International Journal of Research in Marketing*, *Journal of Consumer Research*, *Journal of Marketing*, *Journal of Marketing Research*, *Journal of the Academy of Marketing Science*, and *Marketing Science*) and the service-specific journals with the highest Social Science Citation Index (SSCI) rankings (*Journal of Service Research*, *Journal of Retailing*, and *Journal of Service Management* [formerly *International Journal of Service Industry Management*]) during 1992–2009. These nine journals are the most visible outlets for service research and provide important platforms for knowledge exchange in the service community. However, the publication outlets of the cited articles we considered in our analysis were not restricted to these nine journals; they might contain working papers, book chapters, articles in lower-ranked journals, or journals from distinct research fields.

We mainly retrieved citation data from the SSCI database, as is common in citation studies (Baumgartner & Pieters, 2003; Pieters et al., 1999; Tellis et al., 1999). However, if SSCI data were not available, we collected reference lists manually. In comparison with other available citation databases (e.g., Google Scholar), SSCI reveals where the article was cited, and double entries of the same citation are rare (Cooper, 1998). The final sample, obtained from 5418 articles, thus comprises 258,186

citations. The number of citations grew continuously over the observed time frame, from 8782 in 1992 to 23,424 in 2009.

Although the majority of the SSCI data are accurate, text strings of a cited article can vary due to inconsistent coding or false cites (e.g., misspelled names, omitted middle names, wrong publication years, and differences in journal abbreviations). To purify the citation data, we employed a script programmed using the Matlab software package. Citations are represented by a text string of the name of the first author, year of publication, journal name, volume, and pages in the SSCI database. For example, we found eight variations of the name "Parasuraman" and 17 ways to abbreviate "*Journal of Marketing Research*." Purification steps are often neglected in citation studies based on SSCI data, but they are critical to avoid an underestimation of frequently cited articles (Pilkington & Chai, 2008; Ramos-Rodríguez & Ruíz-Navarro, 2004).

The purification process reduced the sample to 93,123 cited references from a large variety of 25,623 publication outlets (e.g., peer-reviewed journals, conference proceedings, books, working papers).[3] The

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[3] We note the possibility of a time lag if papers influence a scientific research field before they are officially published. For example, researchers commonly present their projects in internal colloquiums or send manuscripts out for friendly reviews before submitting their work for publication. The influence of prepublished manuscripts can be considered partially in citation analyses by incorporating the citation counts of working papers and conference proceedings. Online versions of accepted papers, in our experience, are unproblematic for our analysis because we check for different citation versions of the same paper (i.e., online and print versions) and aggregate these citation counts.

most cited outlets were *Journal of Marketing Research* (3046 citations), *Journal of Marketing* (2601), *Journal of Consumer Research* (2416), *Journal of Personality and Social Psychology* (2251), *Advances in Consumer Research* (1593), *Marketing Science* (1491), *Harvard Business Review* (1355), *Management Science* (1283), *Journal of Retailing* (1229), and *Journal of the Academy of Marketing Science* (963).

To ensure that these articles had significant impacts on the research community, we required that an article be cited between 1992 and 2009 at least two times per year on average to be considered in the final cocitation analysis (e.g., Ramos-Rodríguez & Ruíz-Navarro, 2004). We identified 1135 articles cited at least two times per year and in a large variety of outlets.

Next, we identified service-related manuscripts by reviewing these 1135 articles and classifying them, independently, as service- or non-service-related papers. The decision was based on the publication outlet, title, keywords, and abstract. If an article contained "service" in its title or keywords, it automatically was classified as service related. Every publication in a service-related journal was also, by definition, classified as service related. Furthermore, we coded an article as service related if its topic pertained to service marketing (i.e., explicitly mentioned in the abstract) or a service industry or if the sample contained service-related data. After the first round, in which we coded the articles independently, we found only 13 discrepant classifications (i.e., intercoder reliability = 98.8%). We reexamined these questionable cases and reached consensus through discussion. Therefore, the reliability of the procedure was both high and similar to the approaches used in former citation studies (e.g., Bettencourt & Houston, 2001; Stremersch et al., 2007; Tellis et al., 1999). Overall, we identified 168 service-specific articles that had been cited at least two times per year on average in our sample.

For the log-multiplicative model, we created a citation–cocitation matrix for every year (i.e., 18 matrices) to analyze the citation patterns of these service-specific articles over time. To reduce strong variation effects in the citation data, we applied a moving average (i.e., unweighted moving average over 3 years) to the longitudinal data associated with every citation pair. Next, we aggregated the citation–cocitation matrix for every two consecutive years, resulting in nine different matrices; these matrices represent the database for our analysis. This aggregation is necessary to reduce the model's complexity and avoid instability in the citation patterns due to short-term fluctuations.

Present state of service research

Influential articles in service marketing

To estimate the log-multiplicative model, we used the LEM software package with a maximum likelihood estimator and a random starting point for the solving algorithm (Vermunt, 1997). Following our proposed methodology, we estimated the log-linear model (see Method section) to determine the influence and uniqueness of articles within the service marketing field ($L^2 = 74{,}143$; $df = 250{,}991$). In Table 1, we list the most influential works, ranked by the mean influence factor.

More than 20 years after their first SERVQUAL article appeared, Parasuraman, Zeithaml, and Berry's (1988) study remains one of the most influential works in service marketing. Other publications about service quality also exert significant influence in the discipline. Parasuraman, Zeithaml, and Berry (1985), Zeithaml, Berry, and Parasuraman (1996), and Cronin and Taylor (1992) offer the main contributions between 1992 and 2009. In a similar vein, many influential articles pertain to the evaluation of service encounters (e.g., Bitner, 1990; Boulding, Kalra, Staelin, & Zeithaml, 1993; Smith, Bolton, & Wagner, 1999; Zeithaml, 1988). Beyond these related topics, we find that work on the outcomes of bad service experiences is highly influential (Bitner, Booms, & Tetreault, 1990; Tax, Brown, & Chandrashekaran, 1998).

Reichheld and Sasser (1990), Heskett, Sasser, and Schlesinger (1997), and Anderson and Mittal (2000) exemplify research dedicated to the analysis of the service profit chain and the link between internal marketing and management decisions and market performance. For example, Rust, Zahorik, and Keiningham (1995), in proposing a link between marketing decisions and profitability, provide the basis for a distinct research topic related to the financial performance of marketing decisions.

We do not find many works that refer to the definition of services or early discussions of the goods/services distinction among the list of the 40 most influential articles (e.g., Shostack, 1977). The only entry into the "Top 40" is a seminal article by Lovelock (1983) that refers to the characteristics of services. Yet service marketing no longer deals primarily with the definition and conceptualization of the term "service," in a clear break from its early history. Vargo and Lusch's (2004) introduction of a new dominant logic for marketing is worth noting in this context. It initiated an important discussion about the future of service research and therefore should continue to gain momentum in the service discipline.

Finally, articles by Meuter, Bitner, Ostrom, and Brown (2005) and Schneider, Ehrhart, Mayer, Saltz, and Niles-Jolly (2005) confirm that to be influential in a discipline, it is not necessary for an article to be published early. These two articles have exerted significant influence in a short time and signify topics of enormous importance for the discipline (i.e., self-service technologies, the link between internal and external marketing).

In Table 1, we illustrate the mean influence of the last two periods of the observed period. In this way, we are able to unveil a glimpse of the current state of the discipline. The results show that articles on service quality remain the most important contributions. However, we also uncover a shift in articles' importance. Bitner's (1990) reference to servicescape research is, for instance, of decreasing influence, whereas Keaveney's (1995) analysis of customer switching behavior gains momentum in service research. Whether these examples are reflected by the dynamics within the most prominent service research topics is further analyzed in the section 'The most prominent research topics'.

The most prominent research topics

To identify the main research topics for the past 18 years, we created an overall citation–cocitation matrix C of the entire time frame, 1992–2009, and applied a Salton transformation to this matrix, followed by PCA and Promax rotation (see Method section). In determining the best interpretation and labeling of the components, we decided to use a 20-component structure (explained variance = 53.6%). We labeled the components according to the main subjects of the articles, which provided the highest component loadings and low cross-loadings. Again, we performed independent labeling tasks and then discussed any differences. The labels reflect our careful reading of the abstracts and articles' introduction sections. However, one research topic could not be clearly labeled, and the topics of some components led to very similar research topics (e.g., articles referring to SERVQUAL or alternative measures of service quality). Thus, in three cases we decided to pool research topics (i.e., service quality, customer contact employees, and complaint handling & service recovery). In total, we identified 16 distinct research topics, which we detail in Table 2 along with a brief description of each topic and its key findings.

The topics in Table 2 indicate the great diversification of service marketing. We detect several topics of special importance for the service field (e.g., customer coproduction, servicescapes, technology infusion) as well as topics with significant links to the entire marketing discipline (e.g., customer switching, customer management, relationship

Table 1
Most influential service-related publications, 1992–2009.

No.	Article	Mean influence ($\overline{u}_i$)	Mean influence of the last two periods	No.	Article	Mean influence ($\overline{u}_i$)	Mean influence of the last two periods
(1)	Parasuraman et al. (1988)	1.59	1.56	(21)	Rust et al. (1995)	.67	.98
(2)	Zeithaml et al. (1996)	1.55	1.90	(22)	Zeithaml (2000)	.65	.90
(3)	Parasuraman et al. (1985)	1.43	1.34	(23)	Crosby, Evans, and Cowles (1990)	.64	.73
(4)	Cronin and Taylor (1992)	1.25	1.06	(24)	Meuter et al. (2005)	.63	.53
(5)	Bolton (1998)	1.22	1.52	(25)	Verhoef, Franses, and Hoekstra (2002)	.59	.58
(6)	Bitner (1990)	1.19	.66	(26)	Jones, Mothersbaugh, and Beatty (2000)	.59	.65
(7)	Boulding et al. (1993)	1.13	1.30	(27)	Hartline and Ferrell (1996)	.58	.57
(8)	Bolton and Lemon (1999)	1.03	1.16	(28)	Heskett et al. (1997)	.57	.32
(9)	Reichheld & Sasser (1990)	.96	1.14	(29)	Anderson and Mittal (2000)	.56	.85
(10)	Bitner et al. (1990)	.95	1.33	(30)	Sirdeshmukh, Singh, and Sabol (2002)	.55	.79
(11)	Tax et al. (1998)	.90	1.01	(31)	Bolton, Kannan, and Bramlett (2000)	.53	.83
(12)	Vargo and Lusch (2004)	.88	1.04	(32)	Heskett, Jones, Loveman, Sasser & Schlesinger (1994)	.53	.83
(13)	Meuter, Ostrom, Roundtree, and Bitner (2000)	.87	1.14	(33)	Bolton and Drew (1991a)	.51	.50
(14)	Gwinner et al. (1998)	.83	1.26	(34)	Bolton et al. (2004)	.50	.69
(15)	Bolton and Drew (1991b)	.79	.51	(35)	Mittal, Ross, and Baldasare (1998)	.50	.70
(16)	Zeithaml (1988)	.77	.95	(36)	Kamakura et al. (2002)	.49	.86
(17)	Parasuraman, Zeithaml, and Berry (1994)	.76	.19	(37)	Lovelock (1983)	.45	.64
(18)	Schneider et al. (2005)	.76	.56	(38)	Rust and Oliver (1994)	.44	.48
(19)	Keaveney (1995)	.74	1.07	(39)	Bitner et al. (2000)	.43	.41
(20)	Smith et al. (1999)	.73	.94	(40)	Carman (1990)	.42	−.10

marketing). To depict the evolution of these research topics, we calculate the weighted mean influence of all articles that loaded on the corresponding component (see Method section). In Table 3, we show the weighted mean influence factors of the research topics. Over the whole observation period, the topics with the greatest influence in service marketing are service quality ($\overline{u}_i = .49$), service evaluation ($\overline{u}_i = .42$), customer management ($\overline{u}_i = .20$), and the service profit chain ($\overline{u}_i = .13$).

The result pertaining to service quality is not surprising. This area unifies articles that build on the basic concepts of service marketing, so these articles are cited widely. However, we consider the results for the service profit chain and customer management area notable; they appear increasingly important in the service research field, perhaps in response to the discussion of returns on service management decisions. In Table 3, we also note some topics with below-average influence (i.e., $\overline{u}_i \langle 0$, most of which are comparatively new, such as technology infusion ($\overline{u}_i = -.56$), the service-dominant logic ($\overline{u}_i = -.40$), or online service ($\overline{u}_i = -.31$). These topics simply may not have had sufficient time to become influential in the service discipline.

To reveal the development of the service discipline over the 18-year period, we also estimate the growth rate of the influence factors based on a WLS regression (see Method section; we weight the model by the reciprocal of the variance of the log-linear model estimates for each time period). The results offer a glimpse into the future of service marketing. The research topics with the highest growth rates are technology infusion ($\delta u_i = .44$), online service ($\delta u_i = .44$), financial performance ($\delta u_i = .27$), and commitment & loyalty ($\delta u_i = .27$). We also identify some topics suffering slightly decreasing influence, namely, the nucleus of service marketing ($\delta u_i = -.07$), service quality ($\delta u_i = -.04$), and servicescapes ($\delta u_i = -.02$).

At first glance, our results imply that that the preoccupation with, for example, service quality will not be as fruitful in the future. Yet the likely future influence of service quality might be driven by online service, a topic that includes e-quality aspects. Thus, in line with other researchers who posit that service quality measurement is suffering from weakened influence (Furrer & Sollberger, 2007), we acknowledge that some focus may shift from the derivation of new measures for assessing service quality toward the investigation of service

quality in various contexts (e.g., Parasuraman, Zeithaml, & Malhotra, 2005; Wolfinbarger & Gilly, 2003).

Finally, we identify a shift in the importance of research that builds on the cornerstones of service research, namely, the nucleus of service marketing ($\delta u_i = -.07$) and service-dominant logic ($\delta u_i = .19$). In early service research, analyses of these characteristics helped establish the discipline. Today, however, service researchers stress the similarities of tangible products and intangible service offerings (Lusch, Vargo, & O'Brien, 2007). It is no longer as important to stress the characteristics of service marketing; rather, modern research highlights the similarities between products and services in an effort to build a new and common basis for research in marketing.

Evolution of service marketing

To illustrate the structure of service marketing and its development in a multidimensional space, we estimate the log-linear model including the log-multiplicative term. The model with the lowest BIC, and therefore the best fit for the underlying citation pattern, is two-dimensional (BIC^{2D}: −2,746,705; BIC^{3D}: −2,736,522; BIC^{4D}: −2,725,020). The score estimations have been adjusted by means of a procrustes analysis, and centroid positions for the research topics have been calculated for every time period (see Method section).

In Fig. 2, we depict the position of the centroid of each research topic for every point in time. The graphical representation thus reveals the evolution of and interrelationships among topics. To decrease the complexity of the graphical representation, we show the same literature space in four different sections and plot only selected research topics in one section. The position of each article is represented by its dimension score (ξ_{it}^m), and the constellation of all service articles in the literature space serves to label the axes. Articles related to strategic marketing and management topics generally score lower on the vertical axis (e.g., Ambler et al., 2002; Anderson & Mittal, 2000; Mittal, Anderson, Sayrak, & Tadikamalla, 2005). In contrast, articles dealing with operational issues score higher on this axis (e.g., Bitner, 1992; Hui & Tse, 1996; Taylor, 1994). Therefore, we label the extremes of the vertical axis "strategic-oriented" and "operational-oriented" research focuses. Articles focused on the internal processes of the firm, such as measures of service performance (e.g., Babakus &

Table 2
Main research topics.

Topic	Description	Representative articles	Main findings
Commitment & loyalty	Assessments of the antecedents and outcomes of customer commitment and loyalty in service settings.	Gruen, Summers, and Acito (2000) Pritchard, Havitz, and Howard (1999)	— Customers make repatronage decisions on the basis of their prior repatronage intentions or behavior. — Constructs of customer satisfaction, commitment, and trust (i.e., relationship quality dimensions) influence customer loyalty, either directly or indirectly. — Reward programs increase competitive market prices. — Members of loyalty programs are generally less sensitive to losses in overall quality rating and overlook negative evaluations of the company. — Commitment that is based on shared values and identification shows a uniformly positive impact on customer loyalty. — Commitment mediates the effect of satisfaction on positive word of mouth. The influence of satisfaction on commitment becomes less positive at higher levels of commitment to the organization. — Commitment dimensions (i.e., affective and calculative) predict retention. Calculative commitment has a negative effect on customer churn rates.
Complaint handling & service recovery	The management of customer complaints and service recovery. Research accounts for customers or employees' responses to service failures.	Smith and Bolton (1998) Tax et al. (1998)	— Fit between service failure and recovery effort is important for customer satisfaction and evaluation. — Firms should encourage dissatisfied customers to complain, which provides important information about service improvements. — No clear results in the literature indicate whether a service recovery paradox exists (i.e., customers are more satisfied after receiving an excellent service recovery than those who never experience a service failure). The service recovery paradox diminishes after more than one service failure. — Justice concepts provide an effective theoretical framework for explaining satisfaction with complaint situations. — Negative customer emotions mediate the relation between service encounter dissatisfaction and behavioral responses.
Customer coproduction	Motivation of customers to coproduce services.	Bendapudi and Leone (2003) Meuter et al. (2005)	— Self-serving bias will be reduced when a customer has a choice to participate in service production. — Role clarity, motivation, and ability to use are key mediators between technological adoption and likelihood of trial of self-service technologies. — Perception of justice is important for consumer evaluations of participation. — Customer satisfaction with a firm differs depending on whether the customer participates in service production.
Customer contact employees	Theories and empirical assessments of frontline employees' empowerment, satisfaction, and motivation.	Hartline and Ferrell (1996) Donavan, Brown, and Mowen (2004)	— Main drivers of customer satisfaction in service encounters are employee responses to service delivery failures and customer needs and requests as well as unprompted and unsolicited employee actions. — Role ambiguity diminishes employees' ability to serve customers and decreases customers' perceived quality. — Employee empowerment yields positive and negative outcomes. Empowered employees gain confidence in their abilities but also greater frustration. Empowering employees with control over their tasks is more effective than providing supportive bosses. — With increasing burnout levels, frontline employees are able to maintain productivity levels, but their provided quality deteriorates.
Customer management	Theoretical and empirical assessments of the value of a customer for the firm and the management of customer lifetimes.	Bolton et al. (2004) Gupta et al. (2006)	— Brand equity and customer equity are essentially different perspectives of a marketing asset. — Customer acquisition and retention processes interrelate. — Customer lifetime value represents a fruitful starting point to fill the gap between marketing actions and shareholder value. — Social interaction between retained and potential customers affects firm profits. — Relationship age has no effect on customer referrals. Negative interaction between calculative commitment and relationship age is detected.
Customer switching	Analyses of customer switching behavior and barriers to customer switching.	Burnham, Frels, and Mahajan (2003) Jones et al. (2000)	— Switching costs largely explain the propensity to stay with a service provider and drive customer retention. — Literature identifies different forms of switching costs: procedural, financial, and relational. — Reasons for switching are price, inconvenience, core service failure, service encounters, response to service failure, competition, and ethical problems. — Different kinds of customers are defined by switching patterns: stayers, dissatisfied switchers, and satisfied switchers. Dissatisfied switchers are more likely to engage in active loyalty. Stayers show loyalty that is more passive. The differences decrease with increasing tenure with the service provider. — Competitive and noncompetitive service settings feature customer-switching behavior. In noncompetitive settings, customers find alternative ways to express frustration (which leads to switching).

			— Expected future use and anticipated regret influence the customer's decision to discontinue a service relationship. The influence of regret on consumers' decisions is stronger for ongoing services than for transaction-based services.
Financial performance	Research focusing on identifying the return on marketing strategies.	Rust, Moorman, and Dickson (2002) Mittal et al. (2005)	— Satisfaction relates positively to the share of business a customer conducts with a particular service provider. — Profit margin is positively influenced by the share of customer wallet and negatively influenced by costs incurred in the customer management effort to encourage this behavior. — Firms adopting primarily revenue expansion perform better than firms that try to emphasize cost reduction and even better than firms that try to emphasize both revenue expansion and cost reduction simultaneously. — Association between customer satisfaction and long-term financial performance is positive and stronger for firms that successfully focus on revenue expansion and cost reduction.
Nucleus of service research	Service characteristics and classifications, differentiation between goods and services, management of service encounters.	Lovelock (1983) Shostack (1977)	— Services are characterized by their intangibility, heterogeneity, inseparability, and perishability. — Price, quality, friendliness of service personnel, and customization are critical for the evaluation of services. — Personal sources of information are preferred over impersonal sources. — The Service Blueprint provides a meaningful mechanism through which services can be engineered.
Online service	Transfer of insights into the measurement of service quality to online contexts and comparisons of different service delivery channels.	Wolfinbarger and Gilly (2003) Parasuraman et al. (2005)	— The dimensions of electronic service quality (ESQ) are efficiency, ease of use, reliability/fulfillment, availability, privacy, and site design. — Judgments of ESQ relate most strongly to design factors and reliability. ESQ increases satisfaction and purchase behavior. — Customer perceptions of ESQ positively influence online channel use and service quality in the primary distribution channel. — Loyalty and ease of obtaining information are significantly higher for online channels than in offline environments.
Relationship marketing	Assessments of factors influencing relationship marketing in service settings.	Berry (1995) Gwinner et al. (1998)	— Relationship maintenance drivers include environmental, customer, and interaction variables. — Benefits of maintaining a relationship with a service provider include confidence, social, and special treatment benefits. — Confidence benefits are most important for consumers, followed by social benefits. — Positive individual characteristics (e.g., friendliness, perceptions of similarity) contribute to the formation of commercial friendships. — Rapport plays a major role in customer–employee relationships and leads to satisfaction, loyalty intentions, and positive word of mouth.
Service-dominant logic	Discussions of the service-dominant logic for marketing.	Lusch and Vargo (2006) Vargo and Lusch (2004)	— Operant resources are key to a competitive advantage. Firms need to become competitive and collaborative. — An important characteristic of services is the transfer of ownership. — Goods and services have a nested relationship, but services are the common denominator of exchange. — Emerging principles of services marketing will become mainstream principles of marketing in the future.
Service evaluation	Antecedents and consequences of customer evaluations of service delivery.	Zeithaml, Berry, and Parasuraman (1993) Bolton and Drew (1991a) Bitner (1990)	— High levels of customer satisfaction with the service result in higher usage levels. — Customer expectations need to be exceeded to gain higher satisfaction. — Customers evaluate an exchange as more satisfactory when payments are lower than expected. — Satisfaction is influenced asymmetrically by attribute-level performance and disconfirmation. Negative performance/disconfirmation has a greater impact than positive performance/disconfirmation.
Service profit chain	Analyses of the link between internal and external marketing activities as implemented in the service profit chain.	Anderson and Mittal (2000) Heskett et al. (1997)	— The service profit chain establishes relationships among internal service quality, employee satisfaction, retention, productivity, service value, customer satisfaction, loyalty, and firm profits. — Customers evaluate performance on the basis of relative rather than absolute performance changes. — Frontline workers and customers should be the center of management concerns to increase profits. — Unless firms are efficient on operational efficiency and customer retention, higher profitability gains are unlikely.
Service quality	Assessments of customer evaluations and perceptions of service quality. Marketing and management implications of a service quality strategy including SERVQUAL and alternative approaches.	Brady (2001) Parasuraman et al. (1988)	— Customers form service quality perceptions on the basis of their evaluations of three primary dimensions: outcome, interaction, and environmental quality. — SERVQUAL links the marketing perspective with the production perspective. — Disconfirmation explains a larger proportion of variance in service quality than performance. — Satisfaction seems to be a stronger determinant of purchase intention than service quality. — SERVQUAL dimensions are not completely generic and need to be customized to specific service settings. — Non-difference measures of service quality may outperform SERVQUAL on psychometric and statistical measures.

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Table 2 (*continued*)

Topic	Description	Representative articles	Main findings
			— Service quality is a hierarchical concept.
			— Service value is largely defined by perceptions of service quality.
Servicescapes	Theoretical considerations and empirical evaluations of (physical) service surroundings.	Bitner (1992) Taylor (1994)	— Servicescapes fulfill four major strategic goals: package, facilitator, socializer, and differentiator.
			— High pleasure experienced in a service environment leads to higher satisfaction.
			— The design of waiting times is crucial in service delivery. Providing waiting time duration information leads to a longer perceived wait and may not be appropriate to minimize customer dissatisfaction with extended waits.
			— Delays create anger and uncertainty in customers; with longer waits, anger and uncertainty increase.
			— Negative outcomes of high consumer density in service delivery can be minimized by providing more choices.
Technology infusion	Consumers' adoptions and evaluations of technology-based service encounters.	Dabholkar (1996) Meuter et al. (2000)	— Technology infusion can lead to beneficial service encounter outcomes but demands adequate employee recruitment and training.
			— Consumer technology readiness helps explain the use of technological service provisions.
			— E-satisfaction is influenced by convenience, product information, site design, and financial security.
			— It is dangerous to force customers to use self-service technologies (SST) without offering other viable options. Ease of use is an important determinant of perceived SST quality; speed of delivery and reliability show no significant effect.

Table 3
Influence evolution of research topics in service marketing.

Topic	Influence in time period t (u_{it})									Mean influence ($\bar{u}_i$)	Growth rate of influence (δu_i)[a]
	1992–1993	1994–1995	1996–1997	1998–1999	2000–2001	2002–2003	2004–2005	2006–2007	2008–2009		
Service quality	.33	.62	.90	.69	.57	.14	.35	.56	.27	.49	− .04
Service evaluation	−.05	.43	.60	.75	.73	.47	.42	.08	.31	.42	.01
Customer management							−.09	.56	.12	.20	.13
Service profit chain	−.06	−.74	.24	−.42	−.05	.26	.85	.41	.71	.13	.16
Relationship marketing	−.24	−.91	−.22	.11	.36	.37	.21	.32	.86	.10	.18
Complaint management & recovery	−.39	−.01	.34	−.32	.09	.30	−.05	.26	.29	.06	.09
Customer switching			−.23	−.53	−.74	.05	.28	.53	.69	.01	.23
Customer contact employees	−.39	−.15	.05	−.21	−.26	−.13	−.14	−.48	.13	−.18	.04
Nucleus of service research	.02	.11	−.44	−.28	−.05	−.54	−.40	−.35	−.37	−.25	−.07
Online service						−.89	−.43	−.25	.35	−.31	.44
Financial performance			−1.56	−.63	.02	−1.33	.35	.16	.40	−.37	.27
Customer coproduction	−.48	.16	−1.72	−.91	−.58	−.34	−.33	.15	.62	−.38	.16
Service-dominant logic							−.50	−.58	−.14	−.40	.19
Servicescapes	−.25	−.57	−.45	−.37	.02	−.05	−1.37	−.46	−.25	−.42	−.02
Commitment & loyalty			−1.45	−.89	−1.23	−.13	−.16	.01	.28	−.51	.27
Technology infusion			−2.67	−1.70	−.73	.31	.26	.26	.34	−.56	.44

[a] Growth rate based on the slope coefficient of a WLS regression.

Boller, 1992; Bolton, Lemon, & Verhoef, 2004), achieve high scores on the horizontal axis, whereas those with a customer focus, such as service recovery or customer relationship marketing, obtain relatively lower values (e.g., Bitner, 1995; Gwinner, Gremler, & Bitner, 1998; Kelley, 1993). The extremes of the x-axes refer to "firm focus" and "customer focus."

In addition to revealing the growth rate of the research stream's influence, this graphical representation enables us to identify changes in the orientation of the research topics' subject matter and the evolution of service marketing. Thus, Fig. 2 shows the same literature space for four different groups of research topics. Overall, we observe that many research topics started from a position close to the origin and then moved outward in different directions. The growing number of citations over time might affect these movements, but they also illustrate the ongoing diversification of the service research field. Moreover, Fig. 2 displays how the research topics' subject matter changes. Many research topics have changed their position, sometimes coming closer together (e.g., customer management with the service profit chain, relationship marketing with complaint handling & service recovery).

We reveal the core topics in service research in the upper left section of Fig. 2. Whereas service quality and service evaluation show only slight movements, the service-dominant logic (SDL) topic reveals an increasingly operational and customer-focused orientation. Moreover, the nucleus of service research is shifting in the same direction as SDL research. Thus, research into value cocreation appears to focus increasingly on approaches for implementing effective customer cocreation processes.

The upper right section of Fig. 2 contains topics that mainly shift toward more operational and firm orientations. This shift signifies that because technological encounters are a common part of service provision (Curran, Meuter, & Surprenant, 2003; Dabholkar & Bagozzi, 2002), the efficient and effective implementation of service technologies, rather than strategic technology concerns, has gained importance. The grouping of servicescapes, technology infusion, and customer coproduction might indicate the increasing relevance of technology for service provision (Bitner, Brown, & Meuter, 2000). Most service firms provide customers with alternatives to personal, face-to-face encounters during service consumption (Bitner et al., 2000), such as airlines' online, self-service, and mobile check-in options. This coordination of various processes has prompted service marketing researchers to analyze effective technology–servicescape

combinations and identify channels that can enable service consumption, including online services.

In the lower left section, customer switching, relationship marketing, commitment & loyalty, and complaint handling & service recovery appear to be moving in similar directions. To implement effective customer relationship management, firms must know how consumers will react to service failures and what keeps them from switching. These movements may signify a common basis for topics that previously have been analyzed in isolation. Ongoing work on relationship marketing might consider the importance of insights obtained from research on customer switching or complaint handling & service recovery to grasp how to create meaningful service relationships. Closer proximity between relationship marketing and complaint management & service recovery is an initial sign of this trend.

Finally, the lower right section of Fig. 2 refers to research topics such as financial performance or the service profit chain. The strong strategic focus in these topics signifies the prioritization of long-term firm decisions, not daily concerns. The strategic orientation may reflect the growing importance of returns on marketing decisions and demands for financially accountable measures of management decisions (Rust & Chung, 2006; Rust, Lemon, & Zeithaml, 2004). We also observe a shift of the service profit chain, customer contact employee, and customer management topics toward a firm focus, which implies a stronger internal perspective for those topics. The service profit chain and customer management topics also exhibit closer proximity in recent years, perhaps as a result of the more holistic consideration of the service profit chain in service literature. To gain a deeper understanding of service success, it is essential to analyze both internal and external marketing outcomes (Kamakura et al., 2002).

Emergent articles and research topics

To outline likely topics for future research, we have developed a prospect factor ($prosp_i$) that indicates articles with growing influence and decreasing uniqueness (see Method section). This citation pattern provides a strong indicator of topics with increasing potential to be influential in the discipline in the future.

We considered the last four periods of our sample to calculate the prospect factor (i.e., 8 years). There are several arguments for this restriction. First, we do not expect citations from earlier periods to include information that provides a useful indicator for recent
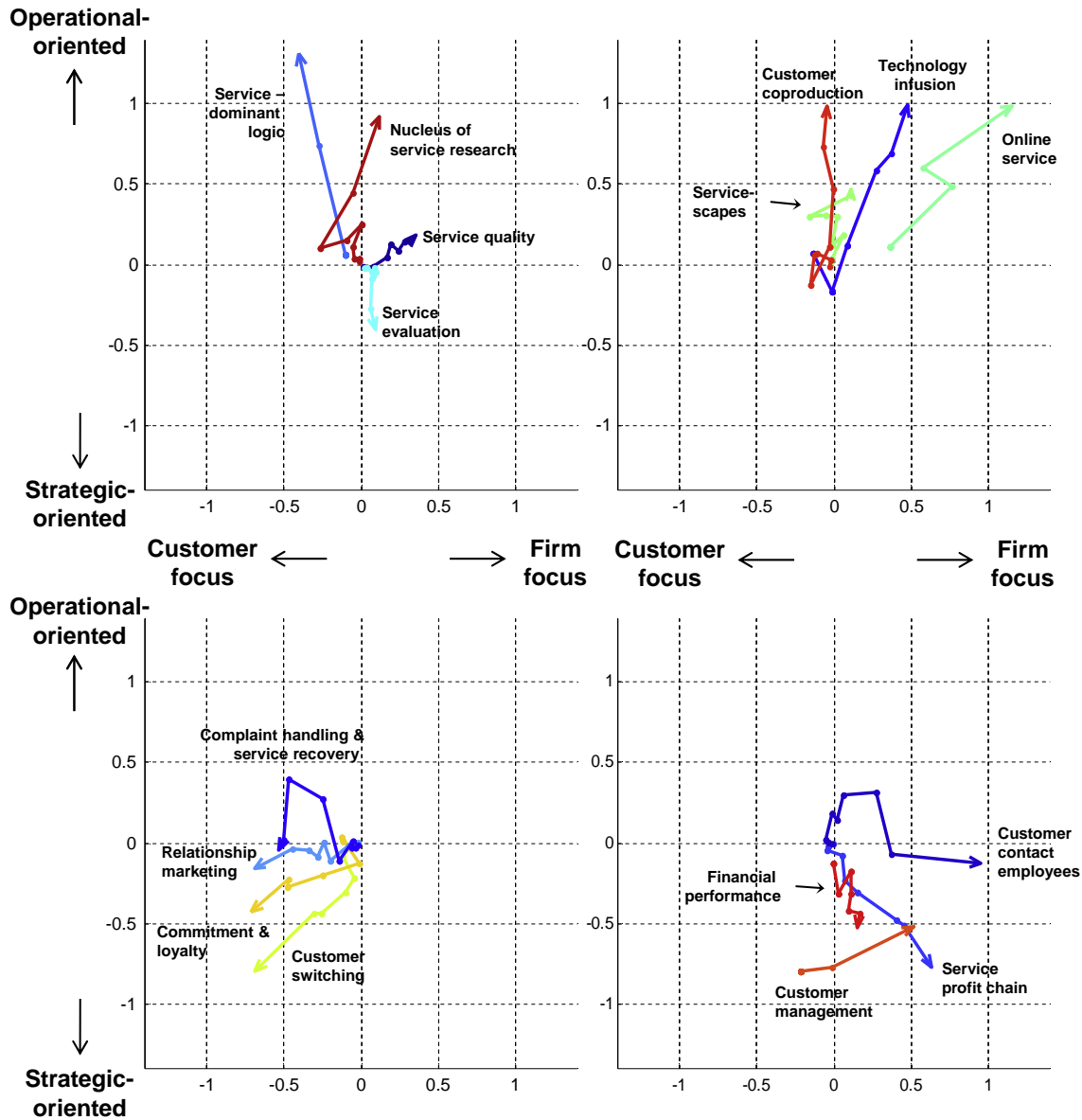
Note: Every dot represents the centroid position of a research topic for one time period. The centroids are linked by a line in their subsequent order. The arrow head represents the centroid of the last period. For instance, research topic "Service-dominant logic" exist over the last three time periods of the entire time frame. This is illustrated by two dots and the arrow head (see upper left section).

Fig. 2. The evolution of service marketing.

research trends. Second, during the most recent four periods, almost all identified articles have been published, which makes the comparison of their estimates much easier. Third, if the trend over the entire time frame is not linear (e.g., an article that had been growing but recently started to decline in influence), it can still be approximated locally by linear trends.

Before we discuss the results in Table 4, we present the outcomes of a cross-validation of the prospect factor. We split our sample into a calibration (2000–2007) and a prediction (2008–2009) period and then used the calibration sample to calculate the prospect factor for the four periods. A positive prospect factor indicates greater expected influence in the next period. In the next validation step, we identified all articles that received substantial positive prospect values (i.e., $prosp_i > .10$); in the calibration sample, 48 articles earned a prospect factor of at least .10 and thus should have growing influence in the future. Next, we calculated the growth rate between the last period of the calibration sample (i.e., 2006–2007) and the prediction period (i.e., 2008–2009). Of the articles classified as increasingly influential,

72.9% showed a positive influence growth rate, such that they have been predicted correctly.

The articles with the highest prospect factor and their main topics appear in Table 4. The main research focuses of these articles are interesting because they signify themes that are likely to have important influences in the near future. The two articles with the highest prospect factors are those by Neslin et al. (2006) and Gustafsson, Johnson, and Roos (2005). Hence, we conclude that customer management, customer retention, and churn will be of increasing interest to service marketing. The discussion of the new dominant logic is prominent in Table 4 (Lusch et al., 2007). Other key topics include complaint handling and service recovery (e.g., Homburg & Fürst, 2005; Maxham & Netemeyer, 2002, 2003), service infusion and business-to-business services (e.g., Homburg & Fürst, 2005; Lam, Shankar, Erramilli, & Murthy, 2004), technology infusion (e.g., Dabholkar & Bagozzi, 2002; Parasuraman et al., 2005; Shankar, Smith, & Rangaswamy, 2003), and coproduction (e.g., Bendapudi & Leone, 2003) as well as the financial performance of services (e.g., Kamakura et al., 2002).

Table 4
Articles with the highest prospect factors.

Source	Prospect factor ($prosp_i$)	Article topic
Neslin et al. (2006)	4.98	Multichannel customer management
Gustafsson et al. (2005)	3.19	Analysis of customer retention and churn rates
Lusch et al. (2007)	2.00	Service-dominant logic
Brown, Barry, Dacin, and Gunst (2005)	1.20	The role of commitment for positive word of mouth
Brady (2001)	.99	Hierarchical approaches or service quality
Maxham and Netemeyer (2002)	.65	Complaint handling and recovery
Homburg and Fürst (2005)	.57	Complaint handling in B2B
Lam et al. (2004)	.53	Customer value and satisfaction and loyalty link in B2B
Rust et al. (2002)	.51	Return on quality
Dabholkar and Bagozzi (2002)	.50	Attitudes toward self-service technologies
Maxham and Netemeyer (2003)	.48	Role of justice perceptions in complaint handling and recovery
Bendapudi and Leone (2003)	.45	Co-production of service
Shankar et al. (2003)	.39	Satisfaction and loyalty in online and offline services
Hennig-Thurau, Gwinner, and Gremler (2002)	.36	Relational benefits and relationship quality
Lemon et al. (2002)	.31	Dynamic customer relationship management
Kamakura et al. (2002)	.30	Service profit chain
Bolton et al. (2004)	.29	Customer asset management
Parasuraman et al. (2005)	.23	E-quality
Patterson and Smith (2003)	.23	Customer switching in different cultures
Zeithaml, Parasuraman, and Malhotra (2002)	.20	E-quality

The future of service marketing

Every service researcher is interested in one question: What will be the next important topics in service research? Our quantitative approach addresses this question and offers additional insights, which we derive from the results of the prospect factor estimations and the emergent research topics in Tables 3 and 4. To compare our results, we summarize the outcomes of recent literature reviews in service research (i.e., Ostrom et al., 2010; Rust & Chung, 2006) and topics that have appeared frequently in recent service research conferences (e.g., Third Thought Leadership Conference 2009, 2010 Frontiers in Service Conference, and 2010 AMA SERVSIG Conference) as comparisons.

In Table 5, the first column describes the future of research in service marketing according to our quantitative cocitation analysis. The other columns reveal the outcomes of recent literature reviews and the main topics in service conferences. From the literature reviews, we cite the research topics as they have been labeled in the specific article. To determine the most prominent conference topics,

we performed an extensive coding procedure that followed the suggestions of Gremler (2004) and Stremersch et al. (2007). Specifically, we used the abstracts and titles in the conference proceedings to describe every presentation with an initial set of keywords. In a second step, two coders independently grouped the presentations according to a broad set of 40 research topics commonly found in recent calls for papers for service conferences or in literature reviews. This step created 89.4% agreement, which suggests the high reliability of our categorization compared with other interrater reliabilities (Tellis et al., 1999). After discussion with a group of service researchers, we condensed the research topics to a final set of 20 subject areas. If an article could not be classified even after extensive discussion, we grouped it into an "other" category. Finally, we compared the 20 areas with our results.

Technology enables new forms of service delivery and customer interaction and builds the basis for many other research topics. We find that *online service and technology infusion* are the two research topics that exhibit the greatest growth. In addition, our list of articles

Table 5
A research agenda for service marketing.

This article	Rust and Chung (2006)[a]	Ostrom et al. (2010)[a]	Thought Leadership Conference 2009[b]	2010 Frontiers in Service Conference	AMA SERVSIG 2010
Online service and technology infusion	E-service	Leveraging technology to advance service	The impact of new media on customer relationships	Technology infusion	Technology infusion
The new dominant logic and cocreation of value	Dynamic interaction and customization	Enhancing the service experience through cocreation	Customer engagement behavior	SDL and cocreation of value	SDL and cocreation of value
Coproduction to enhance service processes			Consumer cocreation in new product development	Customer coproduction	Customer coproduction
Managing B2B services and service infusion		Fostering service infusion and growth		Service infusion	Service infusion
Enhancing and managing the service value chain		Optimizing service networks and value chains		Service productivity	
Return on service marketing decisions	Strategic models of customer equity		Capturing total customer engagement value		
Managing dynamic customer relations and assets	Dynamic customer satisfaction management		Analytics for customer engagement		
Analyzing customer retention and churn	Changes in customer profitability over time				
Complaint handling and service recovery					Service failure and recovery

[a] The following topics for future research streams discussed in prior articles could not be identified from our data. From Rust and Chung (2006): privacy versus customization, marketing to computers, service networks, real-time marketing, dynamic marketing interventions models in CRM, infinite product assortments, personalized pricing and relationships with customer networks. From Ostrom et al. (2010): improving well-being through transformative service, creating and maintaining a service culture, stimulating service innovation, enhancing service design, effectively branding and selling services, and measuring and optimizing the value of service.
[b] Research topics are based on a special issue of the *Journal of Service Research*, August 2010.

with the highest prospect factors contains many articles that deal with technology infusion or online services (e.g., Dabholkar & Bagozzi, 2002; Neslin et al., 2006). Hence, we anticipate a need for more research in two main areas: motivating customers to use service technologies to enhance service productivity and implementing service technologies, such as remote services. This research topic is also widely supported in the scientific community, according to Table 5.

The new dominant logic for marketing and cocreation of value are frequent topics in recent service research. The increasing use of technology during service delivery pushes customer cocreation beyond passive service consumption (Vargo & Lusch, 2008). Marketing literature refers to this phenomenon as customer engagement, and recent thought leadership conferences identify customer engagement as an important factor for a firm's success (Hoyer, Chandy, Dorotic, Krafft, & Singh, 2010; Verhoef, Reinartz, & Krafft, 2010). Generally, scholars appear unsure about the most effective way to engage customers in value cocreation. Articles in this domain achieve high prospect factors (e.g., Lusch et al., 2007), which suggests the topic will be of broad interest in the future because we still do not know how to motivate consumers to become promoters and value creators.

Coproduction to enhance service processes is another topic with increasing influence. A customer needs to coproduce the service for a successful service delivery. Some service concepts, such as virtual communities, base their core business on such customer coproduction. Analyzing the potential ways to promote higher degrees of customer participation is worthy of further consideration. In this context, the emotional and psychological outcomes of customer coproduction (Bendapudi & Leone, 2003) appear of particular interest in the service discipline. The importance of this topic aligns with its presence in recent research articles and visibility in recent service conferences (see Table 5).

We detect an increasing influence of research on managing business-to-business (B2B) services and service infusion. The relatively high prospect factor for Homburg and Fürst's (2005) article indicates the growing importance of analyses of established instruments such as complaint management. Our citation data thus agree with Ostrom et al. (2010) as well as with insights gained from recent service conferences. Research on B2B and the infusion of services in manufacturing companies will be of great interest in the near future.

Service marketing should broaden its scope to create a link from internal management decisions to external evaluations and firm performance, which can help enhance and manage the service value chain. The growing influence of the service profit chain topic and the prospect factor for Kamakura et al. (2002) article support this claim. We require a stronger focus on employee–customer interactions during service encounters. To enhance the value of service processes, we must know more about how organizational structures and capabilities influence business performance.

Another research challenge involves analyzing the monetary benefits of implementing a service marketing strategy, or the return on service marketing decisions. We perceive increasing attention to research that links decisions to financial performance indicators on the firm level, according to the growth rate of the financial performance topic in Table 3. More insights are needed, however, because we still do not know enough about the measurable (financial) benefits of most service marketing concepts. These advances might lead to effective metrics for evaluating a service marketing implementation or analyzing the relationship between management concepts and a firm's financial performance. The importance of such research has been strongly promoted by Roland Rust (e.g., Rust & Chung, 2006) and has also appeared throughout the recent Thought Leadership Conferences.

The positive prospect factor earned by an article that analyzes new types of customer relationship management (e.g., Lemon, White, & Winer, 2002) indicates the growing consideration of how to manage dynamic customer relations and assets in service marketing. We also anticipate the emergence of a distinct subfield that consists of analyses of customer relationship management techniques (see Table 4). As companies confront growing amounts of data and discover improved data analysis techniques, they require increasingly sophisticated customer relationship management tools. Thus, we expect high demand for research that encourages this evolution, in line with other researchers' calls (Bijmolt et al., 2010; Rust & Chung, 2006).

The high prospect factors earned by Gustafsson et al. (2005) and Patterson and Smith's (2003) articles as well as the growing influence of switching and commitment and loyalty topics lead us to believe that customer retention and churn topics will gain momentum in service research. The goal in this area is not only to manage customers throughout their lifetimes but also to proactively stop them from switching. As we show in Table 5, however, our review is virtually alone in suggesting that the analysis of customer retention and churn will be a key research direction.

According to our study, complaint handling and service recovery will continue to be of major importance for research and management. We anticipate this trend for two reasons. First, in times of increasing market pressure and dynamics, differentiation through effective service recovery management should remain important as a means to gain a competitive edge. Second, new forms of service delivery call for alternative service recovery strategies (Robertson & Shaw, 2009). To date, most service recovery research has been dedicated to offline service provision, whereas service recovery techniques for techno-logical service provision remain unknown (Hogreve & Gremler, 2009). Although complaint handling and service recovery appears exclu-sively in our analysis, this topic gained some attention during the Servsig 2010 Conference.

The list of research topics in Table 5 and the comparison of our results to the outcomes of recent literature reviews and expert ratings confirm the important practical contributions that complementary citation studies can offer to a discipline (for a theoretical discourse, see the Literature review section). Using objective and reliable data, citation analyses unveil new research topics that may not have emerged in prior literature. Moreover, citation analyses enable tests of whether the ideas generated by extensive literature reviews or expert ratings hold when confronted with quantitative data.

Accordingly, our results unveil some overlaps with existing literature reviews (e.g., greater research into technological infusion, managing B2B services and service infusion), but the results also identify some areas that have rarely been mentioned by other authors or in conferences (e.g., complaint handling and service recovery, customer retention and churn). The results also suggest topics that might make interesting combinations (e.g., relationship marketing with recovery aspects, service profit chain and customer manage-ment). On the basis of citation data, researchers can thus confirm propositions about the state of a research field, structure the field using quantitative methods (see Table 2, Fig. 2), and obtain a forecast of what the future will hold.

Similar to Tellis et al. (1999), we conceive of cocitation analyses as complementary tools for detecting the state of a discipline and future trends. The results herein support that assessment: a combination of content analyses with quantitative and objective analyses of article influence and dynamics over time offers an excellent means to gain a deeper understanding of research fields, grasp the insights of the most important research topics, and outline the future of a discipline. Thus, further research should consider the combination of approaches to gain more complete pictures of various fields of interest.

Limitations and further research

This study demonstrates the great potential of citation and cocitation analyses for academia, but it also has some limitations. A

cocitation analysis cannot identify the motives for citing a specific article (Baumgartner & Pieters, 2003; Stremersch et al., 2007), nor can it detect whether a citation offers supportive arguments or serves as a subject of critique (Hofacker, Gleim, & Lawson, 2009). Holistic analysis methods that combine citation analysis and text mining approaches could minimize this potential bias and create a more precise depiction of the scientific discipline.

Moreover, we measure article influence on the basis of its appearance in reference lists, consistent with previous bibliometric studies (Baumgartner & Pieters, 2003). However, we cannot identify the frequency of citations within an article (Seggie & Griffith, 2009). Additional bibliometric research should include both the reference lists and the full texts of articles as data sets to identify the number of citations. Moreover, considering citations within the text might help evaluate the strength of cocitation patterns.

Citation analyses depend on published articles to detect research trends, but not all manuscripts are published immediately (e.g., working papers, manuscripts from conferences without proceedings), which means they are insufficiently considered in citation studies, even if they have had an impact. Considering the increasing, instant, worldwide access to manuscripts, even before they are published, it might be interesting to determine how working papers from well-known research centers or prepublished manuscripts stimulate additional research.

In our analysis, we did not control for the quality of the publication outlet, though the quality of the outlet (top tier vs. non-top tier) or the specificity of the journal (service vs. marketing) might influence citation behavior. On the one hand, articles in top-tier journals could be cited more often because these journals offer a broader readership. Articles that appear in these outlets thus might indicate a higher impact because they were published in a highly ranked journal. On the other hand, the rigorous review process mandated by top-tier journals might mean that any article published in them will be higher quality, such that it should generate a higher impact. Recent meta-analyses stress the importance of controlling for heterogeneity caused by outlet-specific effects (Gelbrich & Roschk, 2011), though this procedure is not yet common in practice. We did not detect any such outlet bias in our results, but additional citation studies might control for this possible bias.

Finally, similar to other quantitative approaches that use citations and linear trend estimation, we cannot forecast the structural breaks in the evolution of the research field. Such a change might be induced by new research concepts that have been discussed in the scientific community but have not been sufficiently reflected in published articles. A similar problem exists when only a limited number of observational periods exist for an article. In this case, first-trend forecasting might be over-estimated (i.e., one-period hype) or underestimated (i.e., article needs more time to diffuse). Therefore, we again emphasize that citation-based approaches are not in competition with literature reviews or expert-based approaches; rather, these approaches complement one another.

Overall, this study quantitatively confirms some research opportunities and unveils topics that have not appeared prominently on the service research agenda but that demand further emphasis. We hope that this work inspires service researchers to continue to expand the boundaries of our knowledge about service marketing.

Acknowledgements

Appendix A. Supplementary data

Supplementary data to this article can be found online at doi:10.1016/j.ijresmar.2011.03.002.

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