

Business models in operations, marketing and management research – a systematic literature review

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Abstract

This study reports the preliminary results from an on-going review of the research literature on business models in three sub-disciplines of business research: operations and technology management, marketing and general management. The systematic review method is first described. Next, the study reports a brief overview of the literature in terms of methods, citations and publication outlets and then moves on to thematic comparison of the three sets of literature. The study concludes by suggesting research directions for the operations management research community.

Keywords: Business model, Systematic literature review

Introduction

In an early research note for the European Commission, Timmers (1998, 2) defines business models as

- “An architecture for the product, service and information flows, including a description of the various business actors and their roles; and
- A description of the potential benefits for the various business actors; and
- A description of the sources of revenues.”

The business model is an important structuring concept for operations management scholars and managers, as competition in many industries today is not based on the product but takes place in the business model level. For example, in servitized business contexts the physical systems and supporting activities around the operations across the life-cycle of the solution form the total costs of ownership which determined by various business model options and can vary accordingly. Also, new technological approaches such as digitalization and Internet of Things enable new value propositions and are being implemented across various customer-provider interfaces, thereby enabling new business models and changing the existing ones.

The literature on business models has grown exponentially since its initiation two decades ago. For instance, in January 2018 Google Scholar found 559,000 publications for the phrase, including 14,400 of them using the phrase in the title of the article, but only 24 literature reviews concentrating on business models. While this signals the importance of this concept in various disciplines, it also points to a major challenge – how to make sense of such a large amount of literature? In addition, despite the broad cross-disciplinary interest on the business model concept in other disciplines, operations management scholars have not been particularly fast to take up this topic.

This study reports the preliminary results from an on-going review of the research literature on business models, focusing on comparing three sub-disciplines of business research: operations and technology management, and marketing and general management. The study first describes the method of searching and screening the literature. Next, the study reports a brief overview of the literature in terms of methods, citations and publication outlets and then moves on to thematic comparison of the three sets of literature. The study concludes by suggesting research directions for the operations management research community.

Methodology

The study is based on the systematic literature review method which consists of two main elements: the systematic search and inclusion of all articles in the scope for the analysis, and a systematic, comparative content analysis across the whole set of articles.

Search engine databases and query

The articles were identified using the Scopus search platform (www.scopus.com), which is the world's largest reference database, as the search platform (<https://www.scopus.com/search/form.uri?display=basic>). This database is maintained by Elsevier which claims that "Scopus is the largest abstract and citation database of peer-reviewed literature" (<https://www.elsevier.com/solutions/scopus>), covering over 5000 different publishers of academic content. Scopus was selected as the platform for the searchers as it enables efficiently searching across all main publisher databases with a single search, ensuring searches in all databases are uniform and performed at the same time.

The search in Scopus started with a sample of all journal articles with the phrase "business model*" in article title, in the field of business, management and economics, until the end of year 2017. This identified 1116 articles. The decision to limit the search to business, management and economics discipline follows the reasoning of Klang et al. (2014) to subscribe to this specific discourse, but the current study departs from their approach in that searches are not limited to peer-reviewed and ISI-ranked journals, but based on the CABS ranking. For instance, Harvard Business Review (HBR) is not a double blind reviewed journal, but it is widely read across all business sub-disciplines and its articles are well-cited and influence the thought in the field. Thus, journals like HBR are not excluded in the current analysis.

After documenting the search, the articles were located in publishers' databases, or when those were not available or accessible, as published in author preprint copies based on the Romeo Green policy and using Google Scholar as the search engine to identify the copies online. Such copies were downloadable from institutional repositories of some universities as well as from research sharing platforms such as ResearchGate and RePEc.

Quality screening and handling

Upon closer investigation the quality of the research articles varied considerably, and the set of articles contained research papers with insufficient academic quality. Therefore, further quality criteria was implemented. The journal ranking system of Chartered Association of Business Schools (CABS) was taken as a reference guide. This ranking originates in the UK but is broadly used internationally. All articles published in journals mentioned in the CABS ranking for operations and technology management, marketing, and general management were included. (CABS uses the term 'operations and technology management' for publication outlets relevant for OM scholars.) This subset formed a set of 205 articles, ranging from the year 2000 to 2017. In the dataset, the largest group was general management journals with 108 articles (53 %), followed by marketing with 62

articles (30 %), and operations and technology management with 35 articles (17%).

A library file was created in EndNote to catalogue the studies. The full-text article documents were organized into an analysis file chronologically in Atlas.ti software to allow detailed analysis of the evolution of identified themes. Atlas.ti software was utilized to conduct and document the analysis, and MS Excel was used for logging analysis results and SPSS for performing cross-tabulations.

Research method choices in the business model literature

The analysis examined the business model research papers in terms of methodology. The methodological range of the papers was diverse, and straightforward categorization using dimensions such as theory testing vs. theory building, empirical vs. theoretical, survey or single/multi-case design, or conceptual, and cross-sectional vs. longitudinal were difficult to implement in the analysis, as many studies did not conform to such basic configurations of research designs. At times studies were freeform empirical explorations, or especially in the early days, conceptual-normative discussions with anecdotal case examples. Thus, a tailored category of methodological genres was implemented based on applicable combinations of the dimensions as listed in Table 2.

With some special methods, the following categorization rules were applied. The study by Coombes et al. (2013) was categorized as a systematic literature review, as it fulfils the criteria of SLR in addition to bibliometric analysis. Case studies were categorized as 'single' or 'multi' type, and as 'multi embedded in single' when several products, projects or business relationships of a single firm were compared, and when several member companies within a single network or project were compared.

For cross-comparison of the disciplines, the method categories were combined to form larger groups. Systematic and thematic literature reviews were combined; modeling and simulation was combined with design science approaches; various forms of case research was combined, and qualitative exploration was combined with other descriptive surveys. Results of the cross-tabulation are found in Table 1 below.

Case studies form the majority of papers, as around half of the papers for each discipline consist of case research. More specifically, 21 % of the studies were single case studies, 19,5 % multi-case studies, and 4,9 % were embedded designs, where multiple sub-cases were analyzed within a shared case context. No differences exist in the popularity of specific case approaches between the disciplines.

A clear difference between the three disciplines is found in the proportion of conceptual or pragmatic papers as well as in the amount of literature reviews, as management has more literature reviews (N=19) than expected (14,8). Systematic literature reviews are more popular in the management field than in the other two disciplines. However, due to small frequencies in other observations, the results have no statistical significance.

The brief methodological overview concludes that no major differences in research design preference exist between the three subdisciplines.

Overview of publication outlets

The articles are spread across 56 journals. Table 3 lists the leading journals in each field, listing all journals with 4 or more articles on the data set. The list identifies 12 management journals, three marketing journals and four operations management journals. Interestingly, much of the content in the marketing discipline (28 articles out of 62) appears in *Industrial Marketing Management*. In year 2013, this journal has a special issue on business models that contributes 12 articles in the data set (Barquet et al., 2013; Benson-Rea et al., 2013; Coombes and Nicholson, 2013; Ehret et al., 2013;

Frankenberger et al., 2013; Maglio and Spohrer, 2013; Ng et al., 2013; Palo and Tähtinen, 2013; Seshadri, 2013; Simmons et al., 2013; Storbacka et al., 2013; Wallnöfer and Hacklin, 2013). Also, Journal of Management and Governance has a special issue on business model governance and reporting, which contributes 5 articles to the set (Bagnoli & Redigolo, 2016; DiCarlo et al., 2016; Lassini et al., 2016; Melloni et al., 2016; Page & Spira, 2016).

Table 1 – Research design cross-comparison between the academic disciplines.

Research design		Management	Marketing	Operations	Total
Case study	Count	44	33	16	93
	% within row	47 %	35 %	17 %	100 %
	% within column	41 %	53 %	46 %	45 %
	% of Total	21 %	16 %	8 %	45 %
Conceptual or pragmatic advice	Count	12	7	3	22
	% within row	55 %	32 %	14 %	100 %
	% within column	11 %	11 %	9 %	11 %
	% of Total	6 %	3 %	1 %	11 %
Literature review	Count	19	5	4	28
	% within row	68 %	18 %	14 %	100 %
	% within column	18 %	8 %	11 %	14 %
	% of Total	9 %	2 %	2 %	14 %
Modeling, simulation, design	Count	8	4	2	14
	% within row	57 %	29 %	14 %	100 %
	% within column	7 %	6 %	6 %	7 %
	% of Total	4 %	2 %	1 %	7 %
Survey qualitative or descript	Count	10	5	4	19
	% within row	53 %	18 %	21 %	100 %
	% within column	9 %	8 %	11 %	9 %
	% of Total	5 %	2 %	2 %	9 %
Survey, hypothesis testing	Count	15	8	6	29
	% within row	52 %	28 %	21 %	100 %
	% within column	14 %	13 %	17 %	14 %
	% of Total	7 %	4 %	3 %	14 %
Total	Count	108	62	35	205
	% within row	53 %	30 %	17 %	100 %
	% within column	100 %	100 %	100 %	100 %
	% of Total	53 %	30 %	17 %	100 %

Based on the initial search, the quality of the identified business model literature varied broadly in terms of academic rigour. For this reason, basic quality criteria was implemented using the CABS journal rankings; however the quality differences between CABS levels 1 and 4 are obvious. Nevertheless, the set contains 108 management articles (52%), 64 marketing articles (31%), and 35 operations articles (17%).

Table 2 – Detailed analysis of research designs across the academic disciplines.

		Management	Marketing	Operations	Total
Case study, multi	Count	19	15	6	40
	% within discipline	17,6%	24,2%	17,1%	19,5%
	% of Total	9,3%	7,3%	2,9%	19,5%
Case study, multi embedded	Count	3	3	4	10
	% within discipline	2,8%	4,8%	11,4%	4,9%
	% of Total	1,5%	1,5%	2,0%	4,9%
Case study, single	Count	22	15	6	43
	% within discipline	20,4%	24,2%	17,1%	21,0%
	% of Total	10,7%	7,3%	2,9%	21,0%
Conceptual with anecdotal cases	Count	11	6	3	20
	% within discipline	10,2%	9,7%	8,6%	9,8%
	% of Total	5,4%	2,9%	1,5%	9,8%
Design research	Count	0	2	0	2
	% within discipline	0%	3,2%	0%	1,0%
	% of Total	0%	1,0%	0%	1,0%
Interview report	Count	1	1	0	2
	% within discipline	0,9%	1,6%	0%	1,0%
	% of Total	0,5%	0,5%	0%	1,0%
Literature review, systematic	Count	10	2	1	13
	% within discipline	9,3%	3,2%	2,9%	6,3%
	% of Total	4,9%	1,0%	0,5%	6,3%
Literature review, thematic	Count	9	2	3	14
	% within discipline	8,3%	3,2%	8,6%	6,8%
	% of Total	4,4%	1,0%	1,5%	6,8%
Model development and simulation	Count	7	3	2	12
	% within discipline	6,5%	4,8%	5,7%	5,9%
	% of Total	3,4%	1,5%	1,0%	5,9%
Qualitative exploration	Count	1	2	2	5
	% within discipline	0,9%	3,2%	5,7%	2,4%
	% of Total	0,5%	1,0%	1,0%	2,4%
Qualitative survey	Count	9	2	2	13
	% within discipline	8,3%	3,2%	5,7%	6,3%
	% of Total	4,4%	1,0%	1,0%	6,3%
Survey, descriptive	Count	1	1	0	2
	% within discipline	0,9%	1,6%	0%	1,0%
	% of Total	0,5%	0,5%	0%	1,0%
Survey, hypothesis testing	Count	15	8	6	29
	% within discipline	13,9%	12,9%	17,1%	14,1%
	% of Total	7,3%	3,9%	2,9%	14,1%
Total	Count	108	62	35	205
	% within discipline	100,0%	100,0%	100,0%	100,0%
	% of Total	52,7%	30,2%	17,1%	100,0%

Table 3 – Leading journals on business model research in each discipline, and the methodological profile of the journals based on number of articles.

	Total	Case stud y	Con- cep tual	Lit. revi ew	Mode- ling , desi gn	Survey, descr ip- tive	Survey, hypot hesis testin g
Management journals							
1 Business Horizons	12	1	1	1	0	1	1
2 European Management Journal	12	7	2	1	1	0	1
3 Journal of Business Research	12	4	0	2	1	2	3
4 Journal of Management and Governance	12	5	1	1	0	0	5
5 Management Decision	9	3	2	2	1	0	1
6 California Management Review	7	2	1	2	0	2	0
7 Harvard Business Review	6	2	3	0	0	1	0
8 MIT Sloan Management Review	6	2	1	1	0	1	1
9 European Business Review	5	4	0	0	0	1	0
10 British Journal of Management	4	2	0	0	2	0	0
11 Journal of Business Ethics	4	2	1	0	0	0	1
12 International Studies of Management and Organization	4	4	0	0	0	0	0
Marketing journals							
1 Industrial Marketing Management	28	17	2	2	1	3	3
2 Electronic Markets	5	2	1	0	1	0	1
3 Journal of Business and Industrial Marketing	5	2	1	2	0	0	0
Operations and technology management							
1 Business Process Management Journal	5	1	1	1	0	1	1
2 International Journal of Project Management	5	5	0	0	0	0	0
3 International Journal of Production Economics	4	0	0	0	1	0	3
4 International Journal of Production Research	4	1	0	0	1	1	1

Key contributions in the three disciplines

Management

Citations for the dataset were recorded February 1, 2018 using Google Scholar. Not surprisingly, most cited studies in the dataset are found in the management discipline. The most cited papers are 'Reinventing our business model' by Johnson, Christensen and Kagermann (2008) in Harvard Business Review (2461 citations) and 'The business model: Recent developments and future research' by Zott, Amit and Massa (2011) in Journal of Management (2456 cit.). The former is an easy-reading cover story that provides a case research based framework titled 'The elements of a successful business model', which identifies customer value proposition, profit formula, key resources and key processes as the essential aspects to be considered, and lists further parts of these elements (Johnson et al., 2008, 54). The latter is a comprehensive systematic review article. According to Zott et al. (2011) the literature is characterized by silos based on research interests, which most often focus either on e-business and information technology; strategic aspects including value creation, performance and competitive advantage; or the management of innovation and technology. Despite the existence of these separate streams, Zott et al. (2011) observe four points of consensus across the literature:

1. Business model is considered a unit of analysis, distinct and different from product, firm, industry and network.
2. A holistic or systemic view on the firm and doing business is emphasized.
3. Activities of the central firm and its partners are central in the proposed models.
4. Models address both the creation and capturing of value. (Zott et al., 2011, 1020)

The thematic review by Morris, Schindehutte and Allen (2005) follows these two papers with 2343 citations. This study develops a comprehensive structure through six component questions that help managers to shape their business models through options. The components address factors related to the offering; market factors; internal capability factors; competitive strategy factors; economic factors; and personal/investor factors (Morris et al., 2005).

The next two papers are a literature review by Shafer, Smith and Linder (Shafer et al., 2005) that also develops a review-based synthesis of business model components (1772 cit.), and conceptual/pragmatic paper by Mahadevan (2000) published early in the literature stream (1327 cit.). The remaining studies have below 1000 citations.

These same studies are also in the lead when average citations per year are compared. The comparison was adjusted for studies published recently, but in the scale of the leading papers this does not influence the top of the ranking. The study by Zott et al. (2011) has gained 409 citations per year on average, followed by Johnson et al. (2008) with 273, and Morris et al. (2005) with 195 citations per year.

Marketing

In the marketing discipline, CABS 3 and 4 level journals lead the ranking based on citations, as among the top 20 marketing papers are only three studies in CABS 2 ranked journals. Among the marketing articles, highest citation counts are below 500, and it can be observed that the special issues in IMM have attracted citations quite well.

Leading the list is an early conceptual-pragmatic paper by Stewart and Zhao (2000) from Journal of Public Policy and Marketing. Interestingly, this study has not stood up the test of time, as it envisages in its abstract that

"This examination raises questions regarding the degree to which the Internet is genuinely different and whether it will be a boon to consumers and investors.

Economic necessity associated with the need to obtain and maintain profit streams suggests that Internet markets will likely be more similar to than different from traditional markets.” (Stewart and Zhao, 2000, 287)

Next is the study by Sorescu and co-authors (2011) on business model innovation in the retail industry (370 cit.), followed by Storbacka (2011) on solutions business models (275 cit.) and Mason and Spring (2011) who focus on business model practices (223 cit.). These papers are conceptual using anecdotal cases (Sorescu et al., 2011; Stewart and Zhao, 2000), qualitative exploration (Storbacka, 2011) and a single case ana (Mason and Spring, 2011). Other papers in the marketing category have below 200 citations.

In the marketing category, the ranking order of the studies changes notably when studies are compared based on the average citations per year. Sorescu et al. (2011) lead with 62 citations per year on average, and are followed by Kindström and Kowalkowski (2014) on business model innovation in product-centric firms with 52 citations per year; Storbacka (2011) with 44 cit./year; Maglio and Spohrer (2013) with their service science view on BMI with 39 cit./year, and Ritala, Golnam and Wegmann (2014) on coopetition-based business models with 37 cit./year.

Operations management

In the operations management category, publications with the highest numbers of citations are spread across all CABS journal ranks, but the total citation counts are not very high. Leading the list is the study by Visnjic Kastalli and Van Looy (2013) that analyses servitization-related innovation in 44 subsidiaries of Atlas Copco (275 cit.; CABS rank 4). Next is the qualitative exploration study by Nenonen and Storbacka (2010) on business model design (264 cit.; CABS rank 1).

On third and fourth place are two studies on project-based business models by Wikström and co-authors (2010) with 159 citations, and by Kujala and co-authors (2010) with 142 citations. Both studies are based on qualitative methodology and published in International Journal of Project Management (CABS 2). Wikström et al. (2010) frame their analysis around 5 main elements of the project business models: value and flexibility; organization; innovation and growth; competence and assets; and relationships and collaboration. Each element has 2-4 sub-elements inspected in the analysis. The study by Kujala et al. (2010) identifies four generic project business model configurations based on implementing a conceptual two-by-two matrix that crosses two dichotomies: ‘revenue generation logic for the supplier’ (transaction-based services [A] / relationship-based services [B]) and ‘value proposition for the customer’ (product-oriented services [1] / customer’s process oriented services [2]). The study thus reports four business models: basic installed base services [A1], customer support services [A2], operations and maintenance outsourcing [B1], and life-cycle solutions [B2] (Kujala et al., 2010, 99).

The only other CABS 4 study in the top 20 in the operations category is the taxonomy of data-driven business models by Hartmann et al. (2016) with 18 citations. Being published in 2016, its citation counts are not comparable to older publications.

Discussion and conclusions

The literature on business models is has expanded since gaining interest around year 2000, making it difficult for researchers to know where to start from when business model concepts and frameworks are needed in the analysis of new operational models. This study presents preliminary findings from the systematic analysis of the business model literature comparing the three disciplines of general management, marketing and operations management. While much further analysis is still needed, the study already points towards several observations that are useful for operations management scholars.

The study discovers that the methodological range in the fields is very broad and case studies dominate the other methodologies. The study discovers that the three disciplines do not differ in terms of methodological preferences, except that general management scholars tend to publish reviews more often than others. Perhaps surprisingly the study also discovers that research methods seem not guide readers' interest, at least not in the sense we would expect in operations management; based on citation counts the readership on business models is not in favor of neo-positivist survey designs with extensive quantitative evidence. Based on this initial analysis, it seems that good frameworks, either based on conceptual or empirical work, and well-developed definitions and taxonomies attract citations.

The analysis also finds that operations management scholars have worked relatively little in this field. Many of the recent contributions in OM come from the servitization research stream (Wikström et al., 2010; Visnjic Kastalli and Van Looy, 2013). Considering Timmers' (1998, 2) definition of business models as the "architecture for the product, service and information flows" it appears that the business model is a topic that should be more systematically studied in OM. The connections and interfaces between key OM sub-domains and the business model of the firm need investigation. Especially, better understanding of the business model concept supports topics such as using new technologies to enable sustainable operations, where the business model is typically either new or heavily redesigned modification, and servitization research, where the offerings are not just products but become business models on their own.

The study has limitations. First, as noted the study reports preliminary findings from the large set of analysis, and more refined and insightful findings should be expected after further in-depth analysis. Second, the dataset was created based on search queries on the title field of the articles, to put emphasis on relevance of the analyzed studies. Of course, extending the searches to the abstract and keyword level will expand or multiply the set of articles, and would thus produce a more comprehensive view of the topic. However, the topic of business models is conceptually quite complex, and adding a lot of material to the analysis would require different analytical approaches and technical tools. Focusing on studies that have the studied concept in the title ensures that the studies are more likely to provide original contributions instead of mere references to definitions and concepts in other publications.

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