

Co-Creation, Consolidating the Field and Highlighting New Frontiers

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Co-creation as a concept has won terrain over the past 10 years (Bhalla, 2010; Ramaswamy and Goulliart, 2010; Ramaswamy, 2011). In practice as well as in literature, co-creation is climbing the agenda in relation to contemporary opportunities and challenges within management, organization design, and change initiatives. Thus, there has been a vast growth in application and conceptual development of the concept of co-creation. However, there is very little research-based literature on how the field of co-creation has developed, and of how the concept is being established, and on the future frontiers of the concept of co-creation.

This paper aims to build an overview of the literature on co-creation to explore what the existing literature relate to and indeed to pinpoint if any patterns or streams can be identified. The paper illustrates how the use of the concept of co-creation suggests a necessity for focusing further on specific co-creation related issues and challenges of significance to business and society. Thus, the paper highlights new co-creation related issues, challenges, and frontiers in practice and research rather than giving answers or solutions to existing problems.

Methodology

This paper is written against the backdrop of a literature review on co-creation. The backbone of the literature review is a database document search, which is supplemented by additional literature from the field. The document search in the literature review includes almost 500 peer-reviewed articles and reviews registered in SciVerse Scopus. Scopus is the largest abstract and citation database of peer-reviewed literature and research based web content¹ and thus carries a substantial knowledge base for consolidating the field of co-creation. However, due to the broad and varied use of the term co-creation, it has been necessary to narrow the search in order to create a consolidation of the field and to work towards a

¹ The database includes more than 18,000 peer-reviewed journals from over 5,000 international publishers, carrying a total of more than 41 million records. The database also includes more than 435 million scientific web pages. However, the web content is not included in this literature review.

crystallization of the term. The narrowing of the literature review is described in the following.

Narrowing the search to consolidate the field

The literature search has been subject to a substantial narrowing to create a knowledge base that can give some indication of the trends, tendencies, and streams within the field of co-creation. Including all types of documents and broader search fields would on the one hand give a broader scope of the directions of the field of co-creation and could thereby be argued as useful in the current endeavour as it would give a broader base to conclude from. In the current search with the chosen search criteria, the number of articles used in the search part of the literature review comes to 493 documents. This accounts for only approximately 25% of the total number of documents that would be the result of the broader, open-ended search, which would result in approximately 2,000 documents².

The reasons for making such a focused narrowing of the search for this literature review is that co-creation as a term is much used as a 'buzz-word'. Within an emerging field, such as co-creation is today, there will necessarily be many arbitrary interpretations and hit-and-miss operationalizations of the concept. This use of term as what we in daily speak talk of as a 'buzz-word' can be explained partly as a result of the excitement of the associations which the concept brings with it rather of the content of the term. Thus, such emerging concepts sometimes serve as hype, buzz word, or advertorials for practitioners (Prashentham, 2003), as in the case of co-creation. This arbitrary adaptation – or hijacking – of the concept to serve a different purpose can be seen to serve a different purpose as a wedge in legitimizing practice based promotions of various initiatives as it is seen in the case of concepts central to other emerging fields (See for example Hines, Nick and Hittmeyer, 1998 on supply chain management; Prashentham, 2003 on the Internet and international marketing and Justesen 2008 on diversity; Pharaon and Burns, 2010 on innovation). These dynamics of hijacking a new emerging concept as a wedge in promoting various initiatives in organizational contexts can be seen as in an institutional perspective as inscribing legitimacy to initiatives by means of institutionalization (DiMaggio and Powell, 1983, 1991). Turning from institutional

² An open-ended search using the same search string, with all document types, and all search fields results in 2,007 documents. 1,909 of these being in the English language.

perspectives to that of the more functional-rational perspective, the same dynamics of hijacking an emerging concept to promote other organizational initiatives could also be seen in the perspective of issue selling in which the intention of hijacking the emerging concept serves a packaging purpose (Dutton, O'neill and Lawrence, 2001).

Such an arbitrary use of the term in emerging fields can risk fogging the concept itself, and thereby stand in the way of unfolding the potential of the dynamics of the concept.

The main issue in this paper in regards to the challenges of the broad, arbitrary use of the concept of co-creation is that a literature review is necessary as a wedge in opening up for creating a platform for conceptualization of the term (Koselleck, 1982; Degnegaard, 2010). That is, regardless of whether such arbitrary use of the term is seen in an institutional perspective or in a functional-rational perspective; and regardless of whether the intention of the use of the term may be to serve as either of the two or, perhaps a third – for example a narrative perspective.

To enable a constructive use of the concept by establishing a platform for conceptualization of co-creation as a term, it is necessary to bypass some of the fogging arbitrary uses of the term by being fairly discriminatory in selecting the literature on which the review is being based. Therefore, this review requires the narrower search given the intention of the review to build a platform for establishing a consolidation of the research-based knowledge within co-creation.

Document types in the search

The number of articles included in the review on co-creation is in total 493 documents³. The documents included in the literature review are solely peer-reviewed articles and reviews in English, registered in SciVerse Scopus. Thus, the review does not include other documents types that may or may not have academic research standards, such as letters and conference papers for the reasons discussed above.

³ The number of documents in the final search has changed over the course of the period of time when the numbers were extracted. Therefore the number of documents referred to is at times 493 and at times 494. This shows the dynamic and hasty development within the field.

When looking more closely at the numbers of documents in the various search strings, it becomes clear how the narrow search is a dramatic focus. A search including all document types with the fixed criteria of English language, the chosen search string, and chosen fields would result in 776 documents as opposed to the 493 in the chosen search including only articles and review type documents. The total of 493 documents is based on a search for documents in the English⁴ language, using the search string cocreation or co-creation, for document types articles or reviews, and within the search fields title, abstract, or keyword.

The search string

The words included in the search are 'co-creation' and 'cocreation'. The search shows how co-creation is the more common used term with a result of 438 documents whereas 'cocreation' results in a mere 66 documents⁵. Given that co-creation is the more dominant use of the word, this is what is being used in the current article for further establishing a platform for the concept.⁶

As the intention of this article is to consolidate the trends and tendencies of existing research based knowledge of the term co-creation, the initial search has been opened up to include this one term. This is with the intention of creating a platform which can serve as a base for future more specific research in co-creation linking co-creation to specific topics and fields of interest. Thereby the current paper is necessarily broad in its scope which enables the analysis to merely indicate streams, tendencies and trends into somewhat of a crystallization of the concept itself.

In pursuit of these streams within the development of the concept of co-creation, the search for the term itself does not include articles which may be of relevance but which have not

⁴ Non-English language documents account for 52 out of a total of 545 for all languages. The French top the list of non-English documents in this search with a total of 21, far ahead of the followers with almost 3 times as many as Slovene with 8 documents, and German 6.

⁵ None of the 11 articles, which include both co-creation and cocreation, have intentionally used both terms.

⁶ This is in spite of the fact that the by far most influential article in the field uses the term cocreation (Vargo and Lusch, 2004).

defined its content as 'co-creation'. An example of this is a seminal 2000 article by Prahalad and Ramaswamy in which they speak of 'co-opting' in regards to customer competence (Pralhad and Ramaswamy, 2000) which could be interpreted as self-referential, closed creation as opposed to co-creating. However, in later work by the authors, they inscribe these dynamics that are put forward and discussed in the 2000 article as co-creation (Ramaswamy and Gouillart, 2010). Further, Ramaswamy and Gouillart explicitly state how the work put forward in the 2000 article was in fact the first building blocks in developing a field within co-creation. These authors, as we will see in the following chapters, have had an important influence on the development of the concept of co-creation even though, as we saw above, their most seminal work did not conceptualize these dynamics, which were later to be known as co-creation, using that very term. This shows how this literature review leaves out essential data when based on a simple search for one word as is the case of the backbone of this literature review. Therefore, this search is considered an important part of the literature review, which is necessarily supplemented by additional literature of particular relevance to the co-creation field even though these additional works may not include the term co-creation.

By inclusion of such additional documents to the document search in the literature review, there is a risk that the selection is – at best – arbitrary, or even biased. This potential risk is also relevant in this literature review as it is clear that the author has a bias towards strategy and organization literature. As this is a liability in terms of standing in the way of illustrating an unbiased illustration of the streams in the development of the concept of co-creation, it is also an asset to the review. Particularly since the literature review shows how the development of the concept of co-creation has carried more weight within the fields of business, management and accounting than in other fields, such as social sciences, computer sciences, engineering, etc. This will be shown in the analysis of the literature below. Furthermore, the reasons for initiating this very literature review was the acknowledgement that co-creation plays an increasing role within the fields in the realms of business-in-society, which again furthers the arguments for utilizing the knowledge bias of a heavier knowledge base within these fields to supplement the review.

Search fields

The document search includes the following fields: title, abstract, and keywords. An open-ended search for all field types would have resulted in a much larger document base of 1,316 documents, with the fixed search criteria of language, search string, and document type.

The reason for narrowing the search is to include articles with a specific focus on co-creation by limiting the search to these three specific fields rather than an open-ended search using all fields. Specifically in regards to search fields, there is another argument to be made for using the narrow search rather than an open-ended search. That is the argument of including documents with an intended focus on co-creation rather than including documents that may have merely mentioned co-creation in some part of the text as content, reference, or even delimitation.

An open-ended search using all fields with the given document types would result in 776 documents, with fixed search string, English language and the three categories document types chosen, whereas the search which is used as basis for the current literature review results in a much narrower result, totaling 493 documents.

Even though it is clear that the search using all fields would have resulted in a larger document base for the review, the arguments for using the narrow search still stand as described above in relation to consolidating the field. This has resulted in including these search fields – along with the argument of including articles with a presumed intention of focusing on the concept of co-creation by including the term in title, abstract, or keyword.

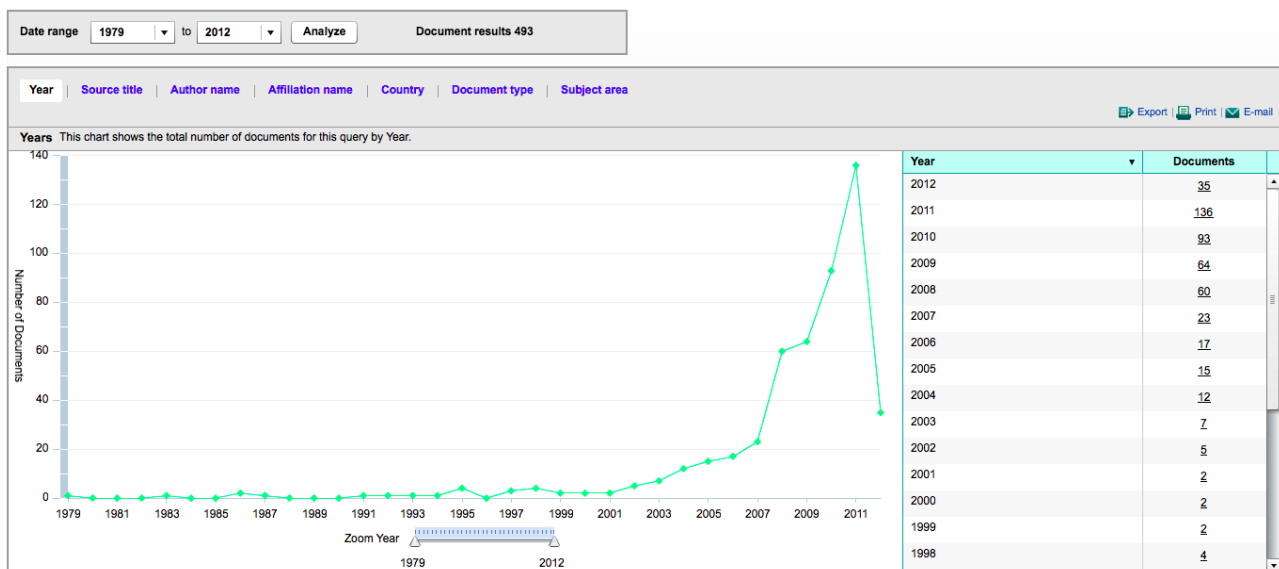
As mentioned above, the search in this literature review is supplemented by some articles of particular relevance to co-creation which have not come out of the search either because they did not fit the search criteria (e.g. Prahalad and Ramaswamy, 2000) or because the documents are a different document type than those included in the search (e.g. the book by Plattner, Meinel, and Leifer, 2012).

Analysis of the document search in the literature review

The analysis of the document search in this literature review aims at identifying streams, tendencies, and trends within the development of the concept of co-creation.

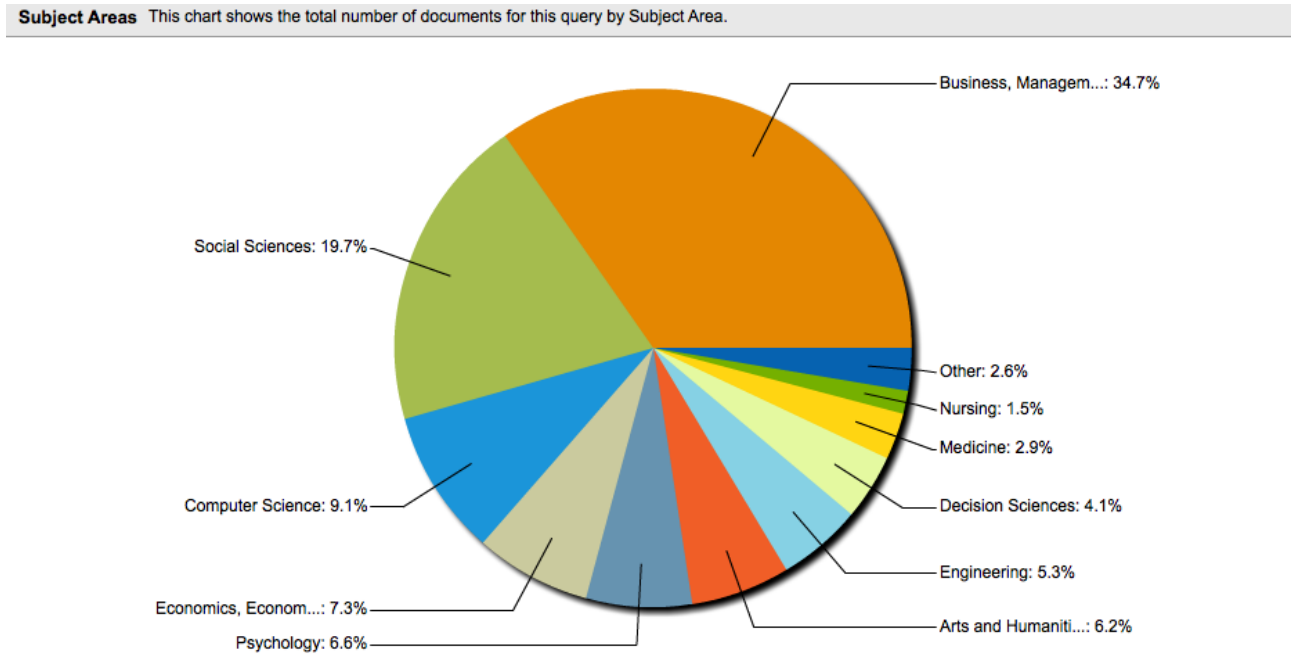
The analysis in the literature review is based on codification across relevant categories such as subject area, research type, journal, author, and geography, etc. Given that the aim of this review is to illustrate the development of the concept of co-creation, its dynamic nature requires that some of these factors be analyzed over time. As will be seen in the analysis, the concept has grown dramatically over a fairly short amount of time. However, in spite of this fairly short timespan, it is still possible to identify clear trends and tendencies. Also, as pointed out in the discussion below, the analysis will point to some indications that will require more research.

The analysis of the literature review shows how there has been an explosive growth in the number of articles on co-creation since the turn of the century. The development in the number of articles and reviews on co-creation can be seen in the graph below.



The graph shows how the term has grown slowly in the early years. The term co-creation has been used in very few articles from 1979. Prior to 2002, the use of the term co-creation in articles has been very few and far between and with very different interpretations and uses of the term. From around the time of the turn of the century, the unfolding of the concept of co-creation has seen an explosive growth, picking up with 5 documents in 2002 and increasing dramatically from then on. The tendency of a growing field does not appear to have peaked as the growth rate is extremely steep up until the time of writing this article in May 2012.

A quantification of the articles from the search with the subjects assigned in the database serves as a quick overview of the subject fields within which the articles have most dominance. The graph below illustrates how co-creation has unfolded based on subject areas.



The graph shows how the distribution of articles across subject areas carries most weight within business, which accounts for almost 35% of the articles in the search. Social sciences account for almost 20%, and computer science account for almost 10%. These three large chunks indicate a stream or tendency within these fields that will be digged further into in the following. However, it should also be mentioned how psychology account for almost 7% and arts and humanities for more than 6%. These quantifications of the number of articles by subject area indicate that there tends to be influences within both business, social, technology, and humanities.

Even though such an illustrative distribution of the use of the term co-creation across subject areas appeals to quick indications and hasty conclusions, these quantifications should be validated and further explored due to obvious challenges in the quality of the results. One reason is the lack of transparency of how the classification into subject areas is done. Another issue is that each article can be registered within several categories. Thus, the total number of registrations of the 494 articles has resulted in 757 registrations. The fixed numbers can be seen in the table to the right. The cross-registrations between categories are not transparent

either which means that the weights of the subject categories are merely to be used as indicators for further investigation.

In the following, classification of the articles will be explored further with the aim of crystallizing the field of co-creation into streams within which the concept has unfolded. In that process, the first accounts of the use of the concept will be given particular attention as to provide a sense of how the concept has developed and unfolded.

The first registered use of the term in Scopus from 1979 refers to a religious article on the role of Christians and how they should use technology in co-creation to renew the universe (Moraczewski, 1979). The next articles using the concept of co-creation in the search is a 1983 article on a landscape study where the term co-creation is used in connection to the relation between man and nature (Preobrazhenskiy, 1983). The third articles, which follows, is a 1986 article on business ethics in which the term co-creation is used to signify the importance of Catholic interpretation of the importance of work to man and how work is a co-creation between God and man (McMahon, 1986). McMahon further inscribes this co-creation aspect as a normative ethic for business and calls this “one of the most important contributions of religion to business ethics.” (McMahon, 1986). This article is of particular interest to the field of co-creation since it frames co-creation in an ethical perspective rather than the functional-rational perspective that will be seen to be dominant in the maturing development stages of the field following the turn of the century. Furthermore, the article sparks ethical discussions for business using the term co-creation whereas the (much) later ethical discussions on the topic of co-creation itself does not really take off until around 2010 (See for example Williams and Aiken, 2010 on the ethics of service dominant logic or Bolton, Kim and O’Gorman 2011 on the ethics of CSR in relation to the role of employees). These later discussions on ethical concerns of co-creation are influenced much by the journal ‘Journal of Business Ethics’ in which McMahon published his 1986 article, yet there are no references to McMahon’s early work from these newer streams of ethical concerns in regards to co-creation.

The lack of cohesiveness within the field and the scattered literature in the first years of the building of co-creation into a concept has resulted in a somewhat weak knowledge base in these first years. However, there are some tendencies in the early development of the concept

that should be noted – and in the later years after the turn of the century, there is a strong leverage of the concept into several clear streams. These streams within the field of co-creation will be unfolded in the following.

Streams within co-creation

The scattered interpretations and utilizations of co-creation and the diverse use of the concept up until the beginning of the new century has created a frail knowledge base for the concept during these early years. However, in the beginning of the century, the use of the term and the interrelations within the field enables some leveraging of the concept.

Co-Creating Shared Meaning – Social Constructivist, Intervention, and Narratives

One of the tendencies in the early years of the unfolding of the concept which should be noted is how there tends to be a use of the term in the fields of therapy and psychoanalysis which gives way to a conceptualization of co-creation in the perspective of co-creation of meaning. In 1992, Boscolo and Bertrando write an article on co-creation of time in family therapy. They use the term to encompass the connection of past, present, and future as a central element in their process oriented systems interventions within family therapy (Boscolo and Bertrando, 1992). This is later taken up by Hanly who uses co-creation in as a way of working with the operant division of past, present and future in which he notes how these are co-created in psychoanalysis (Hanly, 1999).

Following the work of Boscolo and Bertrando, more use of the term co-creation is seen in the fields of family therapy (See for example Snyder 1993 and 1995; McDaniel, Hepworth and Doherty, 1995 and Cheung, 1997; Helmeke and Prouty, 2001; Helmeke, 2001). Also, the broader field of social constructive oriented process intervention and psychoanalysis sees some articles within the field (for example, Dean 1995 on use of narratives in AIDS support groups; Sabelli et al 1997 on the role of co-creation as essential in process orientations in psychodynamics; and Laube 1998 on the role of the therapist in narrative group psychotherapy; Hanly, 1999 on the subjectivity and objectivity in psychoanalysis; Reis, 1999 on co-creation of an intersubjective third in Ogden's phenomenology.)

The relational, social constructive perspective of many of these yearly articles on co-creation is further established by Bhatia in his article published in 2000, where he focuses on a use of the concept in a moral setting as he works with co-creation of moral meaning between caregivers and their children in India (Bhatia, 2000).

These early articles include a 1994 article published in *Design Studies* by Powell and Newland. Powell and Newland shift their focus from a psychological or relational perspective to more of an organizational perspective in which co-creation is linked to the challenge of integrating the visions of those involved in an organizational initiative (Powell and Newland, 1994), thereby building on a stream of co-creation as a co-construction of reality with the intention of co-creating designers with an organizational aim rather than a sociological or psychological aim as in most of these other early articles.

As is evident from the articles described above, this stream bears a heavy influence from social constructivist tradition, tracking back to systems theory and embracing narrative approaches. Further consolidating this stream, Kenneth Gergen along with McNamee and Barrett publish a 2001 article on transformative dialogue in which the term co-creation is used in connection with “co-creation of new realities” (Gergen, McNamee and Barrett, 2001). This stream is influential in the early years of the concept of co-creation and it seems to dominate co-creation as a field in these early years. This predominant stream in co-creation still continues to uphold into 2002 and the following years. However, these years mark the beginning of the unfolding of a new stream, which in the later years, from 2002 until 2012 has shown to be dominant in this period. This new stream is the marketing driven co-creation stream.

Co-Creating User Experience and Shared Value – Marketing and Service

The marketing driven co-creation stream springs from marketing and is based on a notion of customer-centric approach to marketing. The first article in the current search criteria within this stream is the 2000 article by Sheth, Sisodia and Shama in which they work with ‘co-creation marketing’. The authors translate co-creation marketing as a process in which customers and marketers jointly co-create in designing, producing, and consuming products or services (Sheth, Sisodia, and Shama 2000). This stream marks a shift from the previous

dominant stream in that the stream has a specific normative, efficiency-focus in a business logic, aimed at utilization in corporations. The importance of this first article can be seen in the number of citations within the field. See a table of number of citations in Scopus for the 493 articles below.

This is a citation overview for a set of 494 documents.

h index = 26
Of the 494 documents considered for the h-Index, 26 have been cited at least 26 times.
Note: Scopus does not have complete citation information for articles published before 1996.

		Citations																
		<2000	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	subtotal	>2012	total
494 Cited documents	Total	31	18	9	16	11	32	59	109	177	319	556	878	1411	564	4159	0	4190
1 (2004) Evolving to a New Do...							7	27	56	88	155	204	227	302	102	1168		1168
2 (2004) Co-creation experien...									5	9	10	29	46	63	23	185		185
3 (2000) The antecedents and ...			3	3	1	1	11	13	13	12	17	24	12	19	8	137		137

The 2000 article by Sheth, Sisodia, and Shama has 137 citations within Scopus. This ranks the article on a third place of all 493 articles, only surpassed by the two seminal works by Vargo and Lusch from 2004 with 1.168 citations, and by Prahalad and Ramaswamy from 2004 with 185 citations. All these three top ranked articles citation-wise are marketing based and marketing driven. This overall trend of a marketing driven dominance within the field of co-creation, which is seen for the top three cited articles in the search, is evident across analyses of the search and within the field as such.

When analyzing the field by number of articles sorted by journal, the same tendency of a dominant marketing driven stream shows. In the table below, there is a ranking of journals by number of articles within the search criteria of the current search. The table shows journals with 5 or more articles within the scope of the current search. The table shows how the field is dominated by marketing journals as was seen also in the number of journals above and which can be seen by how the number of citations is highest for marketing articles as seen above. However, this listing of journal also shows indications for other streams within the field of co-creation.

Even though the dominant stream through the course of the development of the concept of co-creation is the marketing driven with a customer-centric approach, there are other tendencies, trends, and streams of interest as well as of relevance to the field in addition to

the stream of co-creating shared value. This is indicated by the journals in the table above, and will be further elaborated upon below.

The central journals in the field in regards to number of articles indicate a few streams other than those of marketing driven co-creation. The first indication is the service field, which is, however, very closely linked to the marketing orientation. The close interconnectedness between the marketing and service orientation lies in how the co-creation evolvement within the marketing orientation is in essence a service-orientation. Thus, the establishment of the co-creation field within marketing is based on a turn from a division between production and consumption to a coproduction of value in products and services (Vargo and Lusch, 2004). Thus, there is a mobilization of customer in these streams of co-

Source	Documents
Industrial Marketing Management	<u>15</u>
Journal of the Academy of Marketing	<u>12</u>
Marketing Theory	<u>10</u>
Strategy and Leadership	<u>9</u>
European Journal of Marketing	<u>7</u>
Journal of Marketing Management	<u>7</u>
Journal of Service Research	<u>7</u>
Journal of Service Management	<u>7</u>
MIS Quarterly Management Informat	<u>5</u>
Managing Service Quality	<u>5</u>
Journal of Business Ethics	<u>5</u>
Codesign	<u>5</u>
Journal of Marketing	<u>5</u>
Journal of Macromarketing	<u>5</u>

creation that closely link co-production of offerings and co-creation of value (Normann and Raminez, 1993; Vargo and Lusch, 2004). This turn in marketing inscribes service as an essential part of marketing and further establishes a 1-to-1 relationship between customer-centric and service-centric approaches in marketing (Sheth, Sisodia and Sharma, 2000; Vargo and Lusch, 2004). These arguments call for a merger of the two apparent streams, marketing- and service- driven co-creation. Such a discussion is evident in the field in regards to whether to split the two streams or to merge them. One operant split is seen by dividing co-creation into two main categories: customer co-creation, and value co-creation (Mukhtar, M., Ismail, M.N., Yahya, 2012) Mukhtar, Ismail and Yahya advocate that value co-creation is closely linked to service science and emphasizes the roles of the customer as value creator in which it is assumed that the value is created only when the product or service is being consumed. Customer co-creation is in this light seen when customers are included in co-developing or co-producing the product. The analytical split by Mukhtar, Ismail and Yahya resembles a split seen in Ramaswamy and Gouillart's 2010 book in which they split co-creation into two

perspectives: inside-out and outside-in. In this terminology, outside-in is to be understood as starting with the human experience where (potential) end-users create a platform that can connect their experience to the company's offerings. The inside-out is to be understood as starting with the organizational resources where the organization can include end-users into participating in co-creating processes and new types of experiences (Ramaswamy and Gouillart, 2010). These two perspectives of outside-in and inside-out somewhat mirror the split between customer co-creation and value co-creation in that inside-out resembles customer co-creation in that customers are brought in to co-design or co-produce the product or service. Much in line with what Normann in his seminal work on user-centric design refers to as design driven co-creation (Normann, 1988; Mukhtar, Ismail and Yahya, 2012). Outside-in, on the other hand, resembles what Mukhtar, Ismail and Yahya define as value co-creation which they also describe as service-driven co-creation in which the utilization of the product is the entrance point to the co-creation process and to the unfolding of the value potential in co-creation. Whereas Mukhtar, Ismail and Yahya describe how the split refers to two different types of processes with separate technologies for normative application in each situation, Ramaswamy and Gouillart describe each of the two parts in the split as being essential parts of a co-creation process. This inclusion of both the outside-in and the inside-out perspectives in co-creation embraces the marketing and the service perspectives of a functional, operational normative approach to co-creation. Working with co-creation on such a fairly broad scope – and scale – requires that organizations assess their own competencies and abilities in regards to executing this strategic direction. These concerns were flagged already in 2000 by Prahalad and Ramaswamy in their article “Co-opting Customer Competence” in which they discussed how customer experience is essential for corporations in the new economy and how the customer “is not only an individual but also part of an emergent social and cultural fabric” (Prahalad and Ramaswamy, 2000, p. 2000). Prahalad and Ramaswamy advocate that the consequences for the organization is that they must build new competencies around relations with customers, partners, suppliers, etc. rather than merely focusing on hauling in buckets of customer data.

In an interpretation of co-creation as described above in a necessary synthesis between marketing and service-orientation is valuable as both streams inscribe service-orientation, human-centricity, and focus on co-creation of value in delivery of services and products. In

this light, the two streams, marketing and service, will be treated as parts of the same dominant stream, including a customer-centric service oriented co-creation of services and products. Through this synthesis, this marketing driven stream includes co-creation of services experience and shared value.

The connectedness of marketing and service is further underlined by taking a closer look at the – by far – most influential article in the search within the field of co-creation over time. Vargo and Lusch's 2004 article on 'Evolving to a New Dominant Logic for Marketing' describes how the service-centered model of exchange is essential in marketing. Vargo and Lusch's article is the top cited article in the search with 1,167 documents, with the second highest scoring article holding a mere 185 documents. This shows how the article is seminal in the field of co-creation. Furthermore, Vargo and Lusch have both been productive in the field. Thus, Vargo is the most productive within the search with 10 published articles, and Lusch ties a second-place with 6 articles. Given these credentials, it is difficult not to consider Vargo and Lusch's 2004 article as being the most essential work within the field of co-creation. An article with a focus on the service turn on marketing.

Co-Creating technological solutions – Information and Communication Technologies

Information and Communication Technologies (ICT) has influenced many fields these past decades. This influence is apparent also for the concept of co-creation. The concept of co-creation was used in information systems literature with the aim of including the end-user in information system development prior to its entrance into business management (Füller, Mühlbacher, Matzler, and Jaweck, 2009). The tendency of co-creation within ICT is indicated in the pie graph above illustrating number of articles within the current search by subject field. In this quantification, computer sciences account for almost 10% of the relevant articles. This is not counting those articles within social sciences and business that are not specific computer science articles but still within the realms of ICT. The reasons for the weight of this stream is not only due to ICT in general being influential; but also because some of the approaches which have been particularly influential within particular IT development are based on dynamics central to co-creation. IT development has been one of the front-runners in an important part of the innovation stream, open innovation, which has been enabled by IT (Füller, Mühlbacher, Matzler, and Jaweck, 2009). Conversely, open innovation has enabled

the development of IT in that it has opened up for user-driven co-production by transcending the issues of location and proximity. Further, IT stretches the relation between supplier and end-user to embrace peer production (Von Hippel, 1986) in which the co-creation is no longer a co-creation between corporation and customer but also between peers. Much of the co-creation literature today has a particular focus on web based co-creation, among these web 2.0 and social media which is both a strong amplifier of co-creation in its communication platform between potential suppliers and consumers as well as among peers as well as it is the result of co-creation through user-driven innovation (Dahan and Hauser, 2002; Sawhney, Verona, and Prandelli, 2005; Haythornthwaite, 2008; Füller, Mühlbacher, Matzler, and Jawecki, 2009).

This stream of creating technological solutions goes hand in hand with user-driven innovation and open innovation since they enable each other. The development of open innovation (Chesbrough, 2003) further enables a development of Information Technologies and Information Systems, which again enable a development innovative approaches. Innovation will be explored further below.

Co-Creating Ideas and New Products and Services – Innovation; closeness and boundaries

In the current search of 494 documents, almost half of those documents (236) include the term innovation. When doing a narrower search by limiting the search fields to title, abstract, and keyword to only capture those documents with specific focus on innovation, the search results in 102 documents. This illustrates the importance of innovation in the co-creation literature with more than 20% of the articles specifically highlighting innovation. Further, the two most cited of these 102 articles are the 6th and 7th respectively highest ranked citations of all documents in the search. These two articles correlate with the stream of IT as one articles has a focus on mobile phone services for end-users (Matthing, Sandén, and Edvardsson, 2004) and the other article is on the Internet as a platform for customer engagement (Sawhney, Verona, and Prandelli, 2005). This further highlights and underscores the close link between the ICT stream and the innovation stream. This indicates a heavy weight for innovation within the field of co-creation. Within this stream, the user-centricity is central as in the streams discussed before this. In the case of innovation, the users become innovators. A central article in this stream by Bogers, Afuah, and Bastian, 2010, discusses why users become innovators

rather than producers. Thus, when the marketing stream focused on involving and embracing the user in a normative, efficiency perspective, this stream opens up for discussions on how it may be that users create – and co-create. In regards to innovation, by Bogers, Afuah, and Bastian argue by referring to Von Hippel (1994) that users are more likely to innovate when knowledge is costly to transfer, which Von Hippel describes as being ‘sticky’. The innovation challenge in regards to co-creation poses the question of how to tap into user-driven innovation and ensuring a boundary between producer and user to foster this user-driven innovation. These co-creation challenges within innovation highlight how co-creation is not simply a matter of bringing together those who co-create but rather how the boundaries are necessary to enable innovation in the co-creation process.

Human Centered Co-Creation – Designing Co-Creation Settings

Donald Norman in his book “The Design of Everyday Things” highlighted what he described as user-centric design (Norman, 1988). This influential work with its human-centered approach to design is in relation to co-creation referred to as design driven co-creation (Mukhtar, Ismail and Yahya, 2012). As seen in the other streams discussed above, user-centricity is an essential parameter in co-creation. An other central aspect of co-creation is that of value, which in other streams is described as user needs. These two aspects are central to design thinking and has grown out of a design tradition following the work of Norman in establish a human-centered approach with ways of identifying needs and value potential for the user. This may be why design tends to have an emerging stream within co-creation. Thus, in the current search, the journal Codesign ranks a shared 9th place by number of articles within co-creation.

Furthermore, the latest research publication from the Hasso-Plattner-Institute of Design at Stanford University, Stanford d.school, makes the specific link between co-creation and design thinking in its anthology of design thinking research projects under the title “Design Thinking Research – Studying Co-Creation in Practice” (Plattner, Meinel, and Leifer, 2012).

Furthermore, design plays a role as a conceptualization and operationalization of co-creation challenges, such as Normann and Ramirez in their 1993 article designing interactive strategies in which they focus on value constellations rather than value chains.

Discussion

In recent years, we have seen an explosive growth in articles on co-creation. As we have seen above, the field influences many fields of relevance to business-in-society. The literature review on co-creation raises two questions of relevance to the entire field across the five streams which have been crystallized in the review: 1) The changing concept of value towards a dynamic value concept, and 2) How to design dynamic value based co-creation settings.

The first question is on how to specify the changing concept of value in co-creation. The turn from goods-centered to service-centered marketing is essential in co-creation, as we have seen above. This change to service-orientation implies that value is to be defined as a potential rather than something that can be delivered by an organization as a supplier. When, at the same time, value is being created between peers rather than from a supplier, the value concept is changing in that the co-creation of value is no longer discrete in that it no longer unfolds within the relationship between the supplier and the end user. Furthermore, the value potential is becoming more complex and takes up different nature for different stakeholders and unfolds between different stakeholders. For example, a corporation delivers a platform for peers to exchange experiences about the product and to receive updates on the product and other post-purchase services. Some value will naturally flow from the supplier to the user. Other value will flow between peers, some of what will be co-created between peers – and perhaps with the supplier in some role. Some potential value will be created for the supplier in the form of knowledge about user needs, or of user innovations, etc. The dire complexity of value co-creation in settings such as these is even more complex when the case in matter is not as simple as that of a supplier delivering a service or a product. In matters larger than any one organization such as matters of safety, sustainability, or health, the complexity is even higher. In these super-settings, there is no one organizational entity that can be punctuated as the center of concern – and these co-creation challenges in super-settings will be still more common challenges in the future given our increasing transparent society. Thereby co-creation settings result in a dynamic value concept. An understanding of value as a dynamic, liquid, ever-changing potential across stakeholders and between stakeholders since much of value potential can only be captured in the relation between stakeholders. These matters all stretch the value concept in co-creation and require that this aspect is researched further.

The second question is on how to design co-creation settings when the concept of value is being stretched and when stakeholders are not only individuals, individual organizations or even groups but also society-wide concerns such as safety or sustainability, and when the stakeholders are all “part of an emergent social and cultural fabric” (Prahalad and Ramaswamy, 2000). In much of co-creation literature, user-centric approaches are central, as Norman highlighted in his 1988 book. When the co-creation process expands in complexity from a simpler producer-consumer relation to including peers, institutional partners, and society wide concerns, then the concept of human-centered design needs to be reworked and stretched to encompass the complexity of co-creation in these settings. Design of co-creation in these highly complex settings with dynamic value potential across stakeholder relations pose severe challenges to our current design approaches.

Conclusion

The field of co-creation has experienced a dramatic growth over the course of the past decade. Being a new, emerging concept, co-creation is used as a buzz-word due to the excitement of the associations of the concept. Along with this, the concept is subject to many arbitrary interpretations and hit-and-miss operationalizations of the concept, many of which are practice driven hijacking of the term to serve as promotion for remotely related initiatives. However, the analysis in this paper shows that there are central streams within the development and unfolding of the concept of co-creation.

The analysis shows how at least five streams can be identified within the co-creation field: 1) Co-creation of shared meaning, 2) co-creating user experience and shared value, 3) co-creating technological solutions, 4) co-creating new ideas and products and services, and 5) co-creation of human-centered design.

The first stream, which has crystallized within the field, has sprung out of social constructivist traditions in the therapeutic fields with an intervention perspective, using narratives in the co-creation of shared meaning. This stream is the first in the course of the development of the field of co-creation, which can be said to being considered a stream. This first stream within

co-creation inscribes a relational, social constructivist tradition based on experienced perspectives, narratives, and relations.

The stream of co-creating user experience and shared value is by far the most influential stream in the field of co-creation. The stream is marketing driven with a service dominant logic as its focus. Within this stream, operationalization of user involvement, mobilization of the customer, and engagement of stakeholders set the mark for changing strategies and business models which again require new organizational agendas and competencies. Central to this stream is service-orientation, human-centricity, and focus on co-creation of value in delivery of services and products.

Co-creating technological solutions as a stream involves a notion of inclusion of potential end-users which transcends the limits of proximity due to the development of web-based co-creation platforms. This stream of creating technological solutions is closely linked to the innovation stream through its focus on methodologies such as user-driven innovation, open innovation, and crowd sourcing since the two – technology platforms and innovation design – mutually enable each other. Thus, the development of open innovation further enables a development of technology platforms, which again enable a development of innovative approaches, etc.

Co-creation of ideas and new products and services is in itself considered a stream given its influence in the field of co-creation. Central to the innovation stream is the challenge of how to tap into user-driven innovation. This implies complex relations between stakeholders in co-creation processes as the innovation stream highlights how the balance between proximity and distance is essential in order to enable user-driven innovation. Thereby the challenge of co-creation within innovation challenges the marketing driven stream which has a focus on bringing the supplier and the end-user close. This poses questions for the balance between proximity and user involvement on the one hand and on the other hand how to work with the boundaries necessary to enable innovation in the co-creation process.

Co-creation of human-centered design is as a stream emerging within the emerging field of co-creation. The influence of design in the field is evident from Norman's 1988 focus on user-centric design. This turn is influential throughout the field of co-creation. Furthermore, the

complexity and the dynamic nature of co-creation settings seem to call for design thinking and other design perspectives. This stream is also evident within the field of design thinking in which co-creation is becoming positioned as a central challenge to design in practice. The human-centered approach of design thinking and the focus on identifying value potential in complex settings places this stream in the center of discussions on how to find a ways of operationalizing design of dynamic value based co-creation settings.

A main finding from the analysis in relation to the consolidation of the concept is how co-creation tends to illustrate organizational dynamics that are based on collaborative challenges and opportunities around a changing understanding of value. Thus, within the field of co-creation, the concept of value becomes a dynamic value potential. This ever-changing, liquid dynamic value potential requires other ways of understanding co-creation challenges and opportunities, and it requires new ways of designing co-creation settings.

These changing circumstances for co-creation settings require that we mark specific focus on two essential concerns. The first concern evolves around the question of how to specify the changing concept of value in co-creation given a changing understanding of value as a dynamic, liquid, ever-changing potential across stakeholders and between stakeholders in which much of value potential can only be captured in the relation between stakeholders. The second concern relates to how to design co-creation settings when the concept of value is being stretched and when stakeholders are not only individuals, individual organizations or even groups but also society-wide concerns such as safety or sustainability, and when the stakeholders are all part of an interconnected field. When these co-creation processes expand in complexity from simple producer-consumer relations to including peers, institutional partners, and society wide concerns, how then do we design co-creation processes in these settings?

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Appendix A – Articles by subject area, fixed numbers

Business, Management and Accounting	263
Social Sciences	149
Computer Science	69
Economics, Econometrics and Finance	55
Psychology	50
Arts and Humanities	47
Engineering	40
Decision Sciences	31
Medicine	22
Nursing	11
Environmental Science	5
Agricultural and Biological Sciences	3
Health Professions	2
Mathematics	2
Neuroscience	2
Biochemistry, Genetics and Molecular Biology	2
Undefined	2
Energy	1
Earth and Planetary Sciences	1
TOTAL	757