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### Original Citation

Michalakopoulou, Kalliopi, Reid, Iain and Bamford, David (2017) Arcs of integration for professional service operations management: a literature review. In: BAM 2017, 5th-7th September 2017, University of Warwick, UK. (Unpublished)

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# **Arcs of Integration for Professional Service Operations Management: a Literature Review**

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**Track:** Operations, Logistics and Supply Chain Management

# **Arcs of Integration for Professional Service Operations Management: a Literature Review**

## **ABSTRACT**

This paper contributes to the literature by providing definitions for Professional Service Firms (PSFs) from an Operations Management (OM) perspective and also by identifying emerging research themes among three sectors of professional services namely: law, accounting/finance and management consulting. The authors focused on the most frequently researched/cited areas identified under Von Nordenflycht's taxonomy and composed a structured literature review of newly published material between the years 2007-2017 on PSFs. This paper makes a contribution through a reflection of PSOM thinking: human capital, service solution development, standardisation vs customisation, management (including lean thinking and service modularity) and technology; applying an 'arcs of integration' lens.

Keywords: Professional Services, Operations Management, Professional Service Firms

## **1. INTRODUCTION**

Operations management (OM) in service industries is receiving an increasing amount of attention from management researchers (Harvey, 1990). However, published research in this field and specifically in professional service firms (PSFs) have attracted limited research attention from service scholars (Abdelzaher, 2012). For example, PSFs are becoming one of the fastest growing sectors, but they remain largely under-researched in the OM area (Miles, 2005; Harvey, Heineke and Lewis, 2016).

In general PSFs refer to any organisation, which provides a service based on a professional diagnosis, i.e. on a thorough analysis by a qualified professional in a given field of facts or problems in order to gain understanding and guide future actions (Harvey, 1990). Consequently, the intention of this research is to advance the PSF operations literature understanding, and examine how OM theory can underpin the discipline. This paper aims to develop a detailed research agenda on the existing literature on the field of Professional Service Operations Management (PSOM) with an emphasis on PSFs. More specifically, the study provides a framework capturing existing research on two Classic PSFs (i.e. Law and Accounting/Finance) and one Neo-PSF (i.e. Management Consulting) under Von Nordenflycht's (2010) taxonomy.

## 2. LITERATURE REVIEW

The global business environment has changed dramatically through the rise of emerging economies, liberalisation of markets, and advancements in information and communication technologies (Bello et al., 2016). As a result, services, and especially professional services, have become one of the faster growing sectors globally (Dotzel, Shankar and Berry, 2013; Brock and Alon, 2009; Javalgi et al., 2011). Professional services, defined by Lawrence, Zhang and Heineke (2016) as activities performed by individuals with expertise to achieve problem solving for clients, are distinctive from other service types because of the high level of customer engagement (Brandon-Jones et al., 2016); PSFs are highly interactive being committed to an extensive dialogue with their clients (Fischer et al., 2013). Some examples of professional service work includes consulting projects, medical procedures, and legal cases.

PSFs ‘involve intangible actions directly for customers, through the provision of information-based solutions on the transformation of input information into output information requiring the exchange of complex information, in order to define customer needs and provide individualised solutions’ (Ball et al., 2008, p. 415). Moreover, they are described by Rhian et al. (1992, p.73) as ‘organisations with relatively few transactions, highly customised, process-oriented, with relatively long contact time, with most value added in the front office, where considerable judgment is applied in meeting customer needs’. Due to this type of work that is transacted by the employees of these firms, and due to the nature of the employees themselves, there are distinct operational challenges (Goodale, Kuratko and Hornsby, 2016). This is because the quality of professional services provided depends primarily on the quality of individuals working in the firm, these firms prefer to recruit professionals with advanced education and provide continuous professional development programmes to them by encouraging self-monitoring, in-house education and training, and continuous learning (Stumpf, Doh and Clark, 2002; Ochel, 2002). As Sahin (2011) concluded from research on advertising firms, the recruitment, development and maintenance of key people, are very important for professional services to succeed.

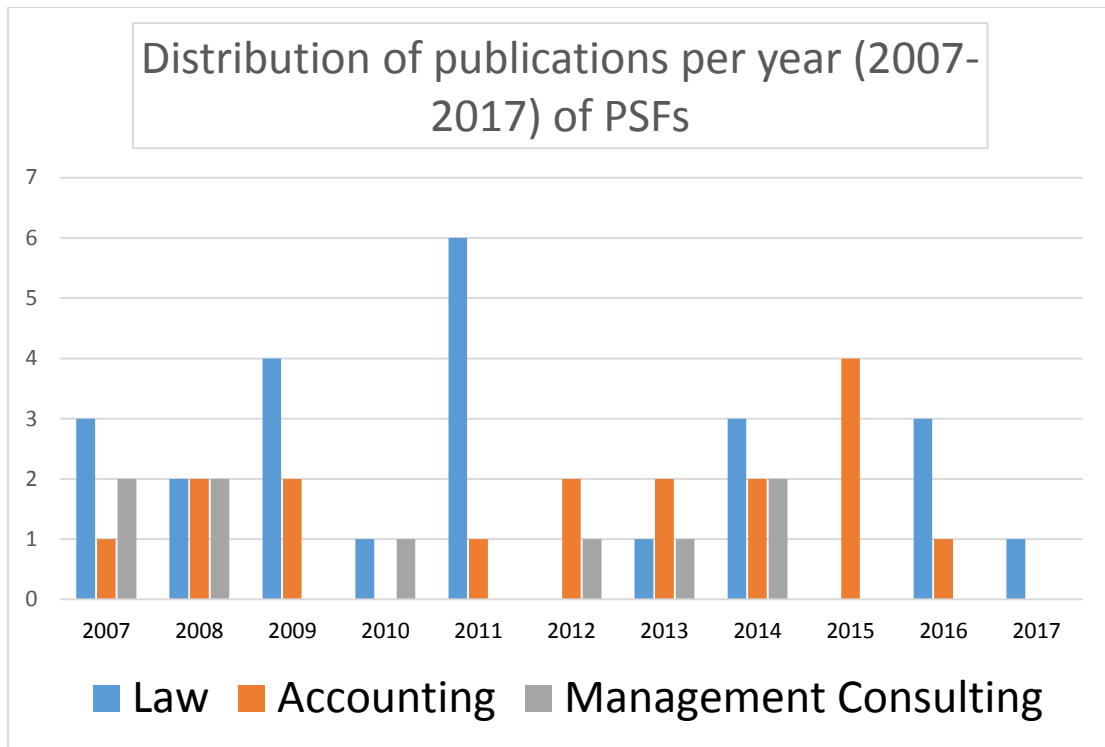
The growth of professional business services is seen as ‘the most profound business phenomenon of the twenty-first century’ (Hitt et al., 2006, p. 1137) and as a key segment in today’s service industry (Jensen, Poufelt and Kraus, 2010). A structured literature review is summarised in figure 1 with the distribution of publications articles between the years 2007 and 2017 was conducted based on the methodology of Tranfield, Denyer and Smart (2003). More and more PSFs such as law firms, software firms, data mining firms, computer firms, accounting firms, management consulting firms, advertising agencies, etc., are increasing their role in modern economies, both as employers and as economic value providers (Nachum, 1996; Løwendahl, 2000). Frohlich and Westbrook (2001) defined the value chain as characterised by degrees of ‘arcs of integration’; from their research they identified that the widest degree of arc with both suppliers and customers had the strongest association with performance improvement.

### 3. METHODOLOGY

In order to address the research questions, a systematic literature review was undertaken. Two decades of OM publications were reviewed in terms of value, in relation to operational effectiveness within numerous professions. To start identifying relevant publications a keywords search gravitating around the terms of service operations, professional services, sector/discipline, service design, service modularity, and service network within the PSOM context was performed. A structured literature review looking into published articles between the years 2007 and 2017 was conducted based on the methodology of Tranfield, Denyer and Smart (2003). This is a systematic approach consisting of five main phases as described in Pilbeam, Alvarez and Wilson (2012): planning; searching; screening; extraction and synthesis, and reporting. A variety of databases were used for the means of the data collection; Scopus, Elsevier and ScienceDirect were employed in order to ensure research validity. Table 1 in particular presents the keyword searches where several relevant papers were identified. An examination of titles and abstracts of 1858 papers in both searches, resulted in the retention of total 105 documents for a more in-depth review. The papers were mainly excluded due to the lack of answering the research question. The authors run the database search in two phases. In the first search, they identified the most cited professional Classic and Neo firms in the PSOM discipline. Ultimately, through the second one they narrowed the search criteria by resulting in specific themes covering the three professional services.

**Table 1: Keywords used in the literature search**

<b>Keyword Search 1</b>	<b>Keyword Search 2</b>
Professional Service Operations Management (PSOM)	Professional Services /PSFs Law
Professional Service Firms (PSFs)	Professional Services/Management Consulting
Professional Services	Professional Services/PSFs & Finance
Classic Firms and Neo Firms	Professional Services/PSFs & Accounting



**Figure 1 – Publication Distribution**

#### **4. FINDINGS**

It is widely accepted that PSOM is defined as ‘a generic service type with high levels of customer contact/service customisation and fluid/flexible processes with low capital/high labour intensity’ (Lewis and Brown, 2012, p. 1). Schmenner (2004) describes PSOM as labour intensive, differentiating between the levels of customisation and the degree of service variation within the service offerings and actual process design. In general, OM research initially focused on taxonomies to understand service characteristics (Damali et al., 2016). For example, Wemmerlöv's (1990) taxonomy presented professional services as fluid processes. Similarly, Silvestro et al. (1992) recognised that professional service processes support high customisation, require a highly skilled workforce, have low service volume, high service contact times and high discretion to meet customer needs. Henceforward the paper will define PSFs within the professional service operations context, present the key themes of the structured literature and discuss how these could direct future research.

##### *Professional Service Firms (PSFs)*

According to Bryson, Rubalcaba and Ström (2012), Von Nordenflycht (2010, p. 670) has developed a new conceptual framework based on the identification of three sources of distinctiveness that are fundamental to the activities of knowledge-intensive firms: knowledge intensity, low capital intensity and a professionalised workforce. More specifically, based on this framework there are four types of PSFs. Firstly, the Classic PSFs (e.g. law and accounting firms) - characterised by a high knowledge intensity, a professionalised workforce, and low capital intensity,

secondly, the Professional Campuses (e.g. hospitals) - characterised by a high knowledge intensity, a professionalised workforce, and high capital intensity, thirdly, the Neo-PSFs (e.g. management consultants) - characterised by a high knowledge intensity and a low capital intensity and finally, the Technology developers (e.g. R&D firms, biotechs) - characterised by a high knowledge intensity and a high capital intensity (Von Nordenflycht, 2010).

Additionally, Harvey, Heineke and Lewis (2016) outlined professional services firstly, by levels of customer contact (i.e., lots of face-to-face interaction, meetings, consultations, etc.) and consequent delivery specifications (i.e., every condition, case, problem is different) and secondly, by operational processes that emerge as a consequence of 'professionals' making judgments about both ends (what constitutes an adequate/appropriate outcome) and means (the content and sequence of process steps) are essentially fluid/flexible in character.

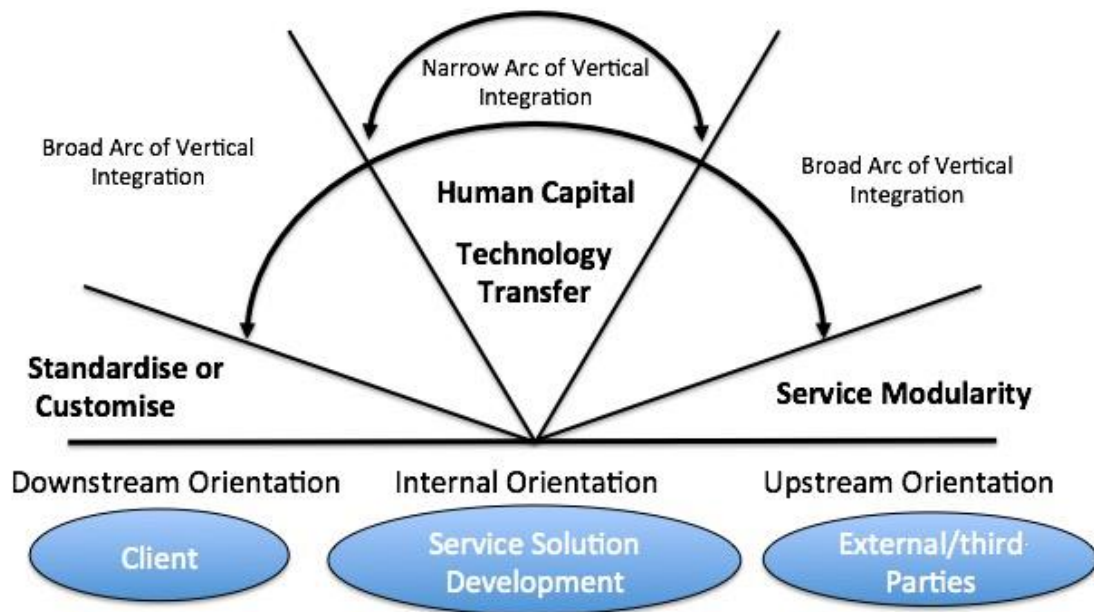
Other scholars (see Amara, Landry and Doloreux, 2009; Anand, Gardner and Morris, 2007; Muller and Doloreux, 2009; Roth and Menor, 2003) use the term knowledge-intensive business services (KIBS) to describe 'enterprises whose primary value-added activities consist of the accumulation, creation, or dissemination of knowledge for the purpose of developing a customised service or product solution to satisfy the client's needs' (Bettencourt et al., 2002, pp. 100-101).

Evidence from the literature suggests that all 'professional' operations are presumed to exhibit certain characteristics (Brandon-Jones et al., 2016) encompassing high levels of customer engagement, extensive customisation, knowledge intensity, and low levels of capital intensity (Sampson and Froehle, 2006; Schmenner, 1986; Silvestro et al., 1992).

Similarly, the well-educated, professional workforce and the knowledge-intensive, high-skill services that PSFs deliver (e.g. Greenwood et al., 2005; Reihlin and Apel, 2007) are their profound characteristics.

## **5. ARCS OF INTEGRATION THROUGH THEMATIC ANALYSIS**

This research presents a timely opportunity for determining specific research themes in the growth in service operations management research (Bamford et al., 2015), and professional services are increasingly appearing at the forefront of research agendas, and practical perspectives. PSFs deliver 'complex, unstructured, and highly customised services in order to meet a particular client's unique need (Bettencourt et al., 2002, p. 101) by combining both tangible (e.g. technology) and intangible (e.g. customer needs) elements, thus it is likely to be less standardised than any other business services. Additionally, in the case of professional services, unique solutions are devised by professionals that require high levels of client involvement to insure successful craftsmanship, application, and client satisfaction for successful product delivery. For instance, a client visiting an attorney for a legal matter must work closely with that attorney for a successful solution to the client's problem (Guzak and Rasheed, 2014). Nonetheless, in the field of law standardised legal forms help streamline the development of wills and contracts and could provide great value to clients at low cost. These forms, however, challenge the professional status of lawyers (Susskind, 2013), who may argue that failure to customise services can lead to increased litigation (Lawrence, Zhang and Heineke, 2016). The findings are organised integrated arcs that refer to emerging trends in PSFs literature from a PSOM perspective presented in figure 2.



**Figure 2 – Arcs of integration for Professional Service Operations Management**

*Arc 1: Standardisation vs Customisation*

Customisability is an important aspect of service solutions. Sharma, Lucier and Molloy (2003) suggest that customised solutions are these *tailored to each customer*. Generally, Lawrence et al. (2016) expressed the view of Schmenner (1986) that every knowledge-intensive service can be seen as highly customised. Von Nordenflycht (2010) argues that PSFs are highly customised and that they compromise on efficiency. For instance, Guzak and Rasheed (2014) suggest that PSFs like law and management consulting firms that offer standardised services are able to attain unconstrained growth in volume, while those firms that offer customised, complex services seem to be successful when they forego the option to grow.

*Arc 2: Service Solution Development*

Although PSFs are seen as ‘facilitator, carrier, or source of innovation’ (Den Hertog, 2000, p. 491), there is lack of research on improving the frameworks necessary for new solution development (Chase and Apte, 2007). The term solution development refers to any new business strategy that describes how firms interact with customers and achieve revenue growth (Chae, 2012). Such developments are product-service systems (Mont, 2002), servicising (Rothenberg, 2007), servitisation (Vandermerwe and Rada, 1988), integrated solution (Davies, Brady and Hobday, 2006), and total service packages (Roth and Menor, 2003).

*Arc 3: Service Modularity*

Service modularity has been presented as another tool for achieving more flexible and ‘open for tailoring service’ firms through standardising processes (Rahikka, Ulkuniemi and Pekkarinen, 2011). According to Liu et al. (2016) service modularity contributes to the service performance by increasing efficiency, broadening the service scope, and increasing the visibility of service to customers. Modularity



principles include objectification, coordination and managing complexity and value co-creation. Modularity within service production can be also used to more meticulously define the content and scope of the service (Ulkuniemi and Pekkarinen, 2011).

#### *Arc 4: Technology Transfer*

Recent work on PSFs, like law, stated how these professions due to globalisation, new policies and legislations and new opportunities offered by technology are undergoing unrepresented change (Faulconbridge and Muzio, 2008). More specifically, the entrance of game-changing technological innovations like artificial intelligence within the PSFs is an emerging theme. Overall, it is argued that technological advancements can permit more efficient management of skilled labour in the knowledge-intensive firms. According to Wu (2015) the improvement of the Information and Communication Technology (ICT) allows firms to reduce both the costs of acquiring and communicating knowledge. For example, many consulting firms use computer-mediated knowledge systems and digitised databases; thus, knowledge becomes much easier to extract, to code and to transfer. Furthermore, the adoption of an appropriate IT system enables business organisations to develop and maintain competency, improve its performance, and ensure that their competitive advantage is retained (Moghavvemi and Salleh, 2014). ICT is already being developed in fields like journalism to perform skills similar to employees (McGinnis and Pearce, 2014). Intelligent machines can work, unlike humans, ceaselessly both in terms of performance and cost. However, as Brynjolfsson and McAfee (2012) suggested a 'combinatorial innovation' that combines efforts of the human and machine skills will most likely lead to innovative scalable process improvements.

#### *Arc 5: Human capital*

PSFs' literature emphasises the importance of internal knowledge embodied in human capital (Scott-Kennel and Von Batenburg, 2012) and how the higher knowledge intensity PSFs are mostly dependent on human capital (Brock and Alon, 2009); on tacit knowledge and reputation. Von Nordenflycht (2010) argues such human capital responds better to managerial approaches emphasising autonomy and guidance rather than authority, commanding, or formal organisational processes (i.e. 'cat herding').

## **6. CONCLUSIONS**

One way to sustain PSFs successful performance and to increase perceived quality of their services apart from building good relationships and developing trust with clients (Jensen, Poufelt and Kraus, 2010; Sahin, 2011) is the implementation of operations management tools such as lean, to create efficiency within a firm. It is a common consensus that lean production is primarily focused on eliminating waste and nonvalue-added activities. However, more recent perspectives argue that lean should be approached comprehensively as a philosophy or way of thinking (Dobrzykowski, McFadden and Vonderembse, 2016). Professional service organisations are under constant pressure from value-seeking clients to provide faster, cheaper and better service (Christensen and Anthony, 2004). For this reason, many firms are trying to employ lean thinking in order to achieve a competitive advantage by reducing the production cost of their goods/services without compromising the quality of their products (Bamford and Forrester, 2010). In other words, lean thinking provides a way to specify value, line up value-creating actions in the best sequence and perform them in the most effective way (Womack and Jones, 2010). For instance, many healthcare

organisations have implemented quality initiatives such as lean to reduce lead times, improve space utilisation, increase throughput, improve quality, and increase financial performance (Shah and Ward, 2007). As such, lean is expanding beyond traditional manufacturing processes into professional services operations in areas like insurance, and accounting (Lewis, 2000; Apte and Goh, 2004; Shah et al., 2008; Berwick et al., 2008; LaGanga, 2011). Fullerton et al. (2014) research on management accounting practises suggests that in order for lean philosophy to reach its potential, lean must be adopted as a holistic business strategy, rather than an activity isolated in operations. Frohlich and Westbrook (2001) argue that the process of formulating and implementing manufacturing strategy should link with the wider supply chain to increase the arc of integration – ultimately connecting both upstream and downstream sides. Their central thesis was the wider the arc the higher the level of performance.

The paper has reflected on the topics that have been extracted from the PSOM literature aiming to answer a key research question: how PSFs are embracing OM thinking? This review means to highlight possible directions for future research being the first step in a Doctorate study looking to understand how human capital and its effective management can be a leverage for a PSF's performance.

## 7. REFERENCES

- Abdelzaher, D.M. (2012). The Impact of Professional Service Firms' Expansion Challenges on Internationalization Processes and Performance. *The Service Industries Journal*, 32(10), pp. 1721–1738.
- Amara, N., Landry, R. and Doloreux, D. (2009). Patterns of Innovation in Knowledge-Intensive Business Services. *The Service Industries Journal*, 29(4), pp. 407–430.
- Anand, N., Gardner, H.K. and Morris, T. (2007). Knowledge-based Innovation: Emergence and Embedding of New Practice Areas in Management Consulting Firms. *Academy of Management Journal*, 50(2), pp. 406–428.
- Apte, U.M. and Goh, C.H. (2004). Applying Lean Manufacturing Principles to Information Intensive Services. *International Journal of Services Technology and Management*, 5(5/6), pp. 488e506.
- Ball, D., Lindsay, V. and Rose, E. (2008). Rethinking the Paradigm of Service Internationalization: Less Resource-Intensive Market Entry Modes for Information-Intensive Soft Services. *Management International Review*, 48, pp. 413–431.
- Bamford, D. and Forrester, P. (2010). *Essential Guide for Operations Managers: Concepts and Case Notes*, John Wiley & Sons.
- Berwick, D.M., Nolan, T.W. and Whittington, J. (2008). The Triple Aim: Care, Health and Cost. *Health Affairs*, 27(3), pp. 759e769.
- Bettencourt, L.A., Ostrom, A.L., Brown, S.W. and Roundtree, R.I. (2002). Client Co-Production in Knowledge-Intensive Business Services. *California Management Review*, 44, pp. 100-128.
- Brandon-Jones, A., Lewis, M., Verma, R. and Walsman, M. (2016). Examining the Characteristics and Managerial Challenges of Professional Services: An Empirical Study of Management Consultancy in the Travel, Tourism and Hospitality Sector. *Journal of Operations Management*.

- Brock, D. M. and Alon, I. (2009). Internationalization of Professional Service Firms. *International Business: Research/Teaching and Practice*, 3(1), pp. 52–70.
- Brock, D.M. and Alon, I. (2009). Internationalization of Professional Service Firms. *International Business*, 3(1), pp. 52–70.
- Brynjolfsson, E. and McAfee, A. (2012). Winning the Race with Ever-Smarter Machines. *MIT Sloan Management Review*, 53, pp. 53–60.
- Bryson, J., Rubalcaba, L. and Ström, P. (2012). Services, Innovation, Employment and Organisation: Research Gaps and Challenges for the Next Decade. *Service Industries Journal*, 32(4), pp. 641-655.
- Campbell, R.W., Been, V., Jackson, H., Willis, M., Haag, C.T., Keller, Z.A. and Denman, H.L. (2012). Rethinking Regulation and Innovation in the US Legal Services Market. *Issues* 9, pp. 1e70.
- Chae, B. (2012). A Framework for New Solution Development: An Adaptive Search Perspective. *The Service Industries Journal*, 32(1), pp. 127-149.
- Chase, R. and Apte, U. (2007). A History of Research in Service Operations: What's the Big Idea? *Journal of Operations Management*, 25, pp. 375–386.
- Christensen, C.M. and Anthony, S. (2004). Cheaper, Faster, Easier: Disruption in the Service Sector. *Strategy Innovation*, 2, pp. 56e65.
- Cooper, D. J., Hinings, C. R., Greenwood, R. and Brown, J.L. (1996). Sedimentation and Transformation in Organizational Change: The Case of Canadian Law Firms. *Organization Studies*, 17(4), pp. 623–647.
- Damali, U., Miller, J.L., Fredendall, L.D., Moore, D. and Dye, C.J. (2016). Co-creating Value Using Customer Training and Education in a Healthcare Service Design. *Journal of Operations Management*, 47, pp. 80-97.
- Davies, A., Brady, T. and Hobday, M. (2006). Charting a Path toward Integrated Solutions. *MIT Sloan Management Review*, 47(3), pp. 39–48.
- Den Hertog, P. (2000). Knowledge-Intensive Business Services as Co-Producers of Innovation. *International Journal of Innovation Management*, 4(4), pp. 491–528.
- Dobrzykowski, D, McFadden, K. and Vonderembse, M. (2016). Examining Pathways to Safety and Financial Performance in Hospitals: A Study of Lean in Professional Service Operations. *Journal of Operations Management*.
- Dotzel, T., Shankar, V. and Berry, L. (2013). Service Innovativeness and Firm Value. *Journal of Marketing Research*, 50(2), pp. 259–276.
- Faulconbridge, J. and Muzio, D. (2008). Organisational Professionalism in Globalising Law Firms. *Work, Employment and Society*, 22(1), pp. 7-25.
- Fischer, A., Sieg, J., Wallin, M. and Krogh, G. (2014). What Motivates Professional Service Firm Employees to Nurture Client Dialogues? *The Service Industries Journal*, 34(4), pp. 399e421.
- Frohlich, M.T and Westbrook, R (2001). Arcs of Integration: An International Study of Supply Chain Strategies. *Journal of Operations Management*, 19, pp.185-200.
- Fullerton, R.R., Kennedy, F.A. and Widener, S.K. (2014). Lean Manufacturing and Firm Performance: The Incremental Contribution of Lean Management Accounting Practices. *Journal of Operations Management*, 32, pp. 414e428.
- Goodale, J.C., Kuratko, D.F. and Hornsby, J.S. (2016). Influence Factors for Operational Control and Compensation in Professional Service Firms. *Journal of Operations Management*, 26, pp. 669-688.
- Greenwood, R., Li, S.X., Prakash, R. and Deephouse, D.L. (2005). Reputation, Diversification, and Organizational Explanations of Performance in Professional Service Firms. *Organization Science*, 16(6), pp. 661–673.

- Guzak, J.R. and Rasheed, A.A. (2014). Governance and Growth of Professional Service Firms. *The Service Industries Journal*, 34(4), pp. 295-313.
- Harvey, J. (1990). Operations Management in Professional Service Organisations: A Typology. *International Journal of Operations and Production Management*, 10(4), pp. 5-15.
- Harvey, J., Heineke, J. and Lewis, M. (2016). Editorial for Journal of Operations Management Special Issue on Professional Service Operations Management (PSOM). *Journal of Operations Management*, 42, pp. 4-8.
- Hitt, M.A., Bierman, L., Uhlenbruck, K. and Shimizu, K. (2006). The Importance of Resources in the Internationalization of Professional Service Firms: the Good, the Bad, and the Ugly. *Academy of Management Review*, 40(6), pp. 1137-57.
- Javalgi, R.G., Gross, A.C., Joseph, W.B. and Granot, E. (2011). Assessing Competitive Advantage of Emerging Markets in Knowledge Intensive Business Services. *Journal of Business and Industrial Marketing*, 26(3), pp. 171–180.
- Jensen, S. H., Poulfelt, F. and Kraus, S. (2010). Managerial Routines in Professional Service Firms: Transforming Knowledge into Competitive Advantages. *The Service Industries Journal*, 30(12), pp. 2045–2062.
- LaGanga, L.R. (2011). Lean Service Operations: Reflections and New Directions for Capacity Expansion in Outpatient Clinics. *Journal of Operations Management*, 29(5), pp. 422e433.
- Lawrence, B., Zhang, J.J. and Heineke, J. (2016). A Life-Cycle Perspective of Professionalism in Services. *Journal of Operations Management*, 42-43, pp. 25-38.
- Lewis, M. (2000). Lean Production and Sustainable Competitive Advantage. *International Journal of Operations and Production Management*, 20(8), pp. 959e978.
- Lewis, M. and Brown, A. (2012). How different is Professional Service Operations Management? *Journal of Operations Management*, 30(1-2), pp. 1-11.
- Lewis, M.A., Harvey, J. and Heineke, J. (2013). Special Issue Call for Paper Professional Service Operations Management. *Journal of Operations Management*.
- Liu, Y., Wei, J., Zhou, D., Ying, Y. and Huo, B. (2016). The Alignment of Service Architecture and Organizational Structure. *The Service Industries Journal*, 36(9-10), pp. 396-415.
- Løwendahl, B. (2000). *Strategic Management of Professional Service Firms* (2<sup>nd</sup> ed.). Copenhagen Business School Press, Copenhagen.
- Løwendahl, B. (2005). *Strategic Management of Professional Service Firms* (3<sup>rd</sup> ed.). Copenhagen: Copenhagen Business School Press.
- McGinnis, J.O. and Pearce, R.G. (2014). The Great Disruption: How Machine Intelligence Will Transform the Role of Lawyers in the Delivery of Legal Services. *Fordham Law Review*, 82, p.3041.
- Moghavvemi, S. and Salleh, N.A.M. (2014). Malaysian Entrepreneurs' Propensity to Use IT Innovation. *Journal of Enterprise Information Management*, 27(2), pp.139-157.
- Mont, O. (2002). Clarifying the Concept of Product-Service System. *Journal of Cleaner Production*, 10(3), pp. 237–245.
- Muller, E. and Doloreux, D. (2009). What We Should Know About Knowledge-Intensive Business Services. *Technology in Society*, 31(1), pp. 64-72.
- Nachum, L. (1996). Winners and Losers in Professional Services: What Makes the Difference? *The Service Industrial Journal*, 16(4), pp. 474-90.
- Ochel, V. (2002). The International Competitiveness of Service Firms: The Case of Germany. *The Service Industries Journal*, 22(2), pp. 1-16.

- Pilbeam, C., Alvarez, G. and Wilson, H. (2012). The Governance of Supply Networks: A Systematic Literature Review. *Supply Chain Management: An International Journal*, 17(4), pp. 358-376.
- Rahikka, E., Ulkuniemi, P. and Pekkarinen, S. (2011). Developing the Value Perception of the Business Customer through Service Modularity. *Journal of Business and Industrial Marketing*, 26(5), pp. 357-367.
- Reihlin, M. and Apel, B.A. (2007). Internationalization of Professional Service Firm's Learning: A Constructivist Approach. *Industrial Journal of Service Industry Management*, 18(2), pp. 140–151.
- Rhian, S., Fitzgerald, L., Johnston, R. and Voss, C. (1992). Towards a Classification of Service Processes. *International Journal of Service Industry Management*, 3(3), pp. 62-75.
- Roth, A. and Menor, L. (2003). Insights into Service Operations Management: A Research Agenda. *Production and Operations Management*, 12(2), pp. 145–164.
- Rothenberg, S. (2007). Sustainability through Servicizing. *MIT Sloan Management Review*, 48(2), pp. 83–91.
- Sahin, C. (2011). Managing Professional Service Firms: Role of Managerial Abilities. *Journal of Management Development*, 30(4), pp. 413 – 426.
- Sampson, S.E. and Froehle, C.M. (2006). Foundations and Implications of a Proposed Unified Services Theory. *Production and Operations Management*, 15(2), pp. 329e343.
- Schmenner, R. (1986). How can Businesses Survive and Prosper? *Sloan Management Review*, 27(3), pp. 21e32.
- Schmenner, R.W. (2004). Service Businesses and Productivity. *Decision Sciences*, 35(3), pp. 333–347.
- Scott-Kennel, J. and Von Batenburg, Z. (2012). The Role of Knowledge and Learning in the Internationalisation of Professional Service Firms. *The Service Industries Journal*, 32(10), pp. 1667-1690.
- Shah, R. and Ward, P.T. (2007). Defining and Developing Measures of Lean Production. *Journal of Operations Management*, 25(4), pp.785-805.
- Shah, R., Goldstein, S., Unger, B. and Henry, T. (2008). Explaining Anomalous High Performance in a Health Care Supply Chain. *Decision Sciences*, 39(4), pp. 759e789.
- Sharma, D., Lucier, C. and Molloy, R. (2003). From Solutions to Symbiosis: Blending with your Customers. *Strategy and Competition*, 27, pp. 2–11.
- Silvestro, R., Fitzgerald, L., Johnston, R. and Voss, C. (1992). Towards a Classification of Service Processes. *Int. J. Serv. Ind. Management*, 3(3), pp. 62e75.
- Stumpf, S.A., Doh, J.P. and Clark, K.D. (2002). Challenges and Opportunities for Improving Performance. *Organizational Dynamics*, 31(3), pp. 259-79.
- Sundbo, J. (2002). The Service Economy: Standardisation or Customisation? *The Service Industries Journal*, 22(4), pp. 93–116.
- Susskind, R.E. (2013). *Tomorrow's Lawyers: An Introduction to Your Future*. Oxford University Press Oxford.
- Tranfield, D., Denyer, D. and Smart, P. (2003). Towards a Methodology For Developing Evidence-Informed Management Knowledge by Means of Systematic Review. *British Journal of Management*, 14(3), pp. 207–222.
- Ulkuniemi, P. and Pekkarinen, S. (2011). Creating Value in Business Service Relationships through Modular Services. *International Journal of Services and Operations Management*, 33(2).

- Vandermerwe, S. and Rada, J. (1988). Servitization of Business: Adding Value by Adding Service. *European Management Journal*, 6(4), pp. 314–324.
- Von Nordenflycht, A. (2010). What Is a Professional Service Firm? Toward a Theory and Taxonomy of Knowledge-Intensive Firms. *Academy of Management Review*, 35(1), pp.155-174.
- Wemmerlöv, U. (1990). A Taxonomy for Service Processes and its Implications for System Design. *International Journal of Service Industry Management*, 1(3), pp. 13e27.
- Womack, J.P. and Jones, D.T. (2010). *Lean Thinking: Banish Waste and Create Wealth in your Corporation*. Simon and Schuster.
- Wu, Y. (2015). Organizational Structure and Product Choice in Knowledge-Intensive Firms. *Management Science*, 61(8), pp. 1830-1848.