Towards Continuous Improvement (CI) in Professional Service Delivery: A Conceptual Framework

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Abstract

Driven by rising consumerism and intensifying competition, the Professional Service Firms (PSFs), across the globe, are realizing the significance of established continuous improvement (CI) management systems/approaches. These approaches (such as Total Quality Management, Kaizen, Lean management, Six Sigma, and hybrid methodologies such as Lean Six Sigma) had been popular in the manufacturing environment for product quality improvement and production process simplification. Characterized by high process variability (owning to customized service delivery by knowledge intensive assets), Professional services (PS) need specific CI frameworks for improving the efficiency and throughput of PS operations. There are literature reviews on evolution of academic research on CI in services, in general. However, an extensive analysis of the latest dispersed research on PS is lacking. To address this gap, a Systematic Literature Review (SLR) of 81 papers published in 35 peer-reviewed academic journals from 1992 to 2016 was conducted. Based on the review, a conceptual framework for CI in PSFs is proposed.

Keywords: Professional services; Continuous improvement; Systematic literature review

1. Introduction

Professional Services (PS) have been playing a premier role in our societies by supporting public and private businesses in creating high value products and services (Lewis et al. 2013). PS is a skill- and knowledge-driven business sector comprising a variety of occupations with high level of customer engagement, and customization (Sampson and Froehle, 2006). The sector includes information technology (IT) and information technology enabled (ITeS) services, healthcare services, accounting services, financial & auditing services, legal services, architectural & engineering services, and management consulting. The firms providing such services are referred to as professional service firms (PSFs) (Goodale, 2008). In 2016, the PS sector created a
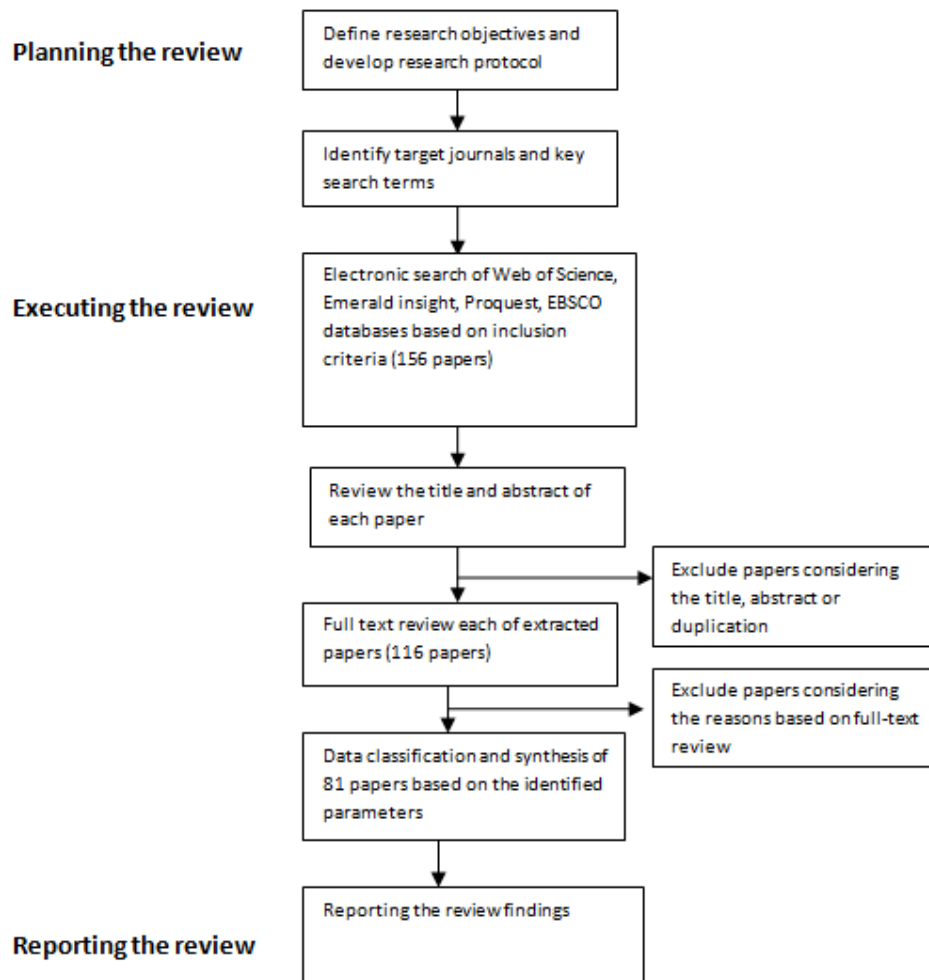
global value of USD 2,160 billion, which made up about 2% of the global economy (Research and Markets, 2016). Yet, despite their economic and societal substance, PS has largely remained under-researched while exploring the established continuous improvement (CI) approaches for achieving operational and service excellence (Lewis, et al. 2013; Machuca et al., 2007).

The service management literature contains conflicting arguments regarding the nature of PS operations (Conchar, 1998). Researchers portray PS as a subcategory of the service sector. PS is characterized by extensive customer contact and customization, and is highly labour intensive (Lovelock, 1983; Schmenner, 1986). Knowledge intensiveness, autonomy, altruism, self-regulation, and crucial client inputs are the other characteristics of PS highlighted in many theoretical and conceptual studies (Sampson and Froehle, 2006; Jaakkola and Halinen, 2006; Cunningham et al., 2004; Brown and Swartz, 1989; Gummesson, 1978). Similar to the classifications for generic services (Kellogg and Nie, 1995; Silvestro et al. 1992; Maister and Lovelock 1982; Shostack, 1977; Sasser et al. 1978), researchers have developed certain PS-specific typologies and taxonomies as well. Smedlund (2008) proposed a matrix for describing the innovations happening in PS. The matrix was based on two dichotomous dimensions - nature of innovation (incremental-radical) and strength of tie with the client (weak-strong). This two-by-two matrix classified the PS into four categories – Operational, Experimental, Tactical, and High Potential. Nordenflycht (2010) categorized knowledge intensive firms into four classes: Classic PSFs, Professional campuses, Neo-PSFs, and Technology Developers. The author used three distinctive characteristics namely professionalized workforce, low capital intensity and knowledge intensity for developing the classification scheme.

With the PS sector becoming increasingly critical for the development of the global economy, this attempt may help the professionals in the successful implementation and sustenance of the CI philosophy in their service settings. To define the PS sector, the study adopted an operations management perspective proposed by Harvey et al. (2016) in the editorial for JOM. According to Harvey et.al. (2016), all types of PS operations exhibit two principle dimensions – high level of customer contact and subsequent delivery specification, and a flexible or fluid nature of operational processes for determining both means (service processes) and ends (service outcome). Based on this definition, the PS categories that were explored were healthcare, IT, accounting & financial services, legal services, engineering & management consulting. The rest of the study is organised into three sections. First section describes the phases of Systematic Literature Review (SLR) methodology used for conducting the review. The next section reports the analysis of data collected. The last two sections report the directions for future research and conclusions.

2. Systematic Literature Review (SLR): Methodology

To achieve the aim of the present study, the SLR methodology described by Tranfield, Denyer, and Smart (2003) was employed. This methodology encompasses a replicable, scientific and transparent review process, which facilitates in drawing an in-depth understanding of the common themes in any research field. The present study conducted the SLR, following the three-phase process – planning the review, executing the review, and reporting the review (Tranfield et al. 2003; Thomas et al. 2004) (Figure 1). These phases are described in the following subsections.

Planning the review
- Define research objectives and develop research protocol
- Identify target journals and key search terms

Executing the review
- Electronic search of Web of Science, Emerald insight, Proquest, EBSCO databases based on inclusion criteria (156 papers)
- Review the title and abstract of each paper
  - Exclude papers considering the title, abstract or duplication
- Full text review each of extracted papers (116 papers)
  - Exclude papers considering the reasons based on full-text review
- Data classification and synthesis of 81 papers based on the identified parameters

Reporting the review
- Reporting the review findings

Figure 1: Phases of SLR

In the planning phase, the research objectives were clearly defined and a literature review protocol was developed to limit the systematic error and bias in the selection of papers for review (Petticrew and Roberts 2006)(Figure 2).
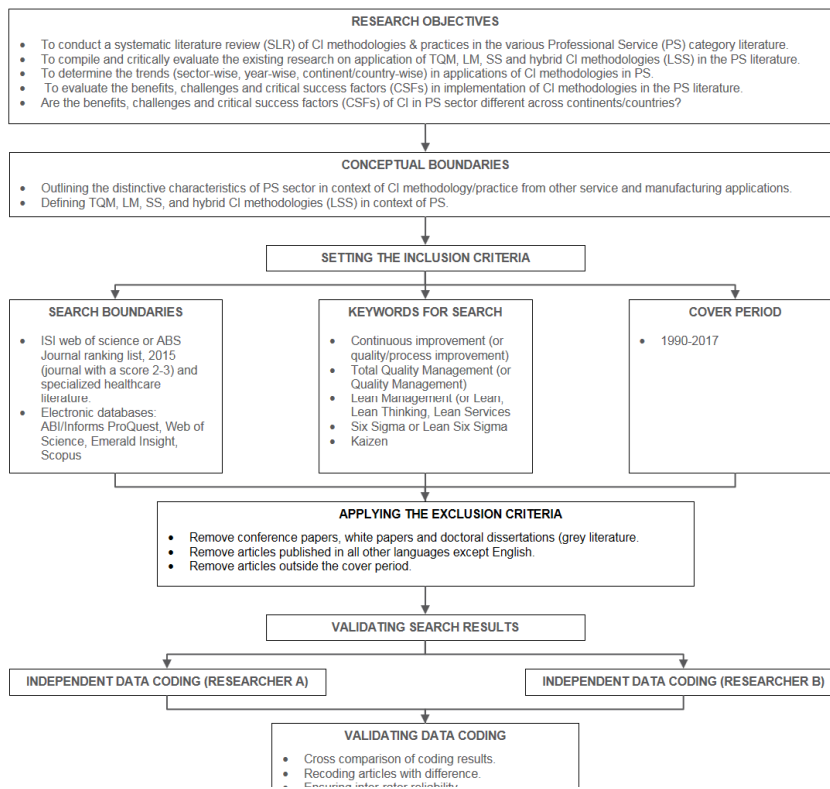
RESEARCH OBJECTIVES
- To conduct a systematic literature review (SLR) of CI methodologies & practices in the various Professional Service (PS) category literature.
- To compile and critically evaluate the existing research on application of TQM, LM, SS and hybrid CI methodologies (LSS) in the PS literature.
- To determine the trends (sector-wise, year-wise, continent/country-wise) in applications of CI methodologies in PS.
- To evaluate the benefits, challenges and critical success factors (CSFs) in implementation of CI methodologies in the PS literature.
- Are the benefits, challenges and critical success factors (CSFs) of CI in PS sector different across continents/countries?

CONCEPTUAL BOUNDARIES
- Outlining the distinctive characteristics of PS sector in context of CI methodology/practice from other service and manufacturing applications.
- Defining TQM, LM, SS, and hybrid CI methodologies (LSS) in context of PS.

SETTING THE INCLUSION CRITERIA

SEARCH BOUNDARIES
- ISI web of science or ABS Journal ranking list, 2015 (journal with a score 2-3) and specialized healthcare literature.
- Electronic databases: ABI/Informs ProQuest, Web of Science, Emerald Insight, Scopus

KEYWORDS FOR SEARCH
- Continuous improvement (or quality/process improvement)
- Total Quality Management (or Quality Management)
- Lean Management (or Lean, Lean Thinking, Lean Services
- Six Sigma or Lean Six Sigma
- Kaizen

COVER PERIOD
- 1990-2017

APPLYING THE EXCLUSION CRITERIA
- Remove conference papers, white papers and doctoral dissertations (grey literature).
- Remove articles published in all other languages except English.
- Remove articles outside the cover period.

VALIDATING SEARCH RESULTS

INDEPENDENT DATA CODING (RESEARCHER A)   **INDEPENDENT DATA CODING (RESEARCHER B)**

VALIDATING DATA CODING
- Cross comparison of coding results.
- Recoding articles with difference.
- Ensuring inter-rater reliability

Figure 2: Literature review protocol

The next step in the review process was data classification and analysis. The present study used the data classification method proposed by Godinho et al. (2015) and classified the extracted papers on the basis on eight variables: Year of publication, Title of publication, PS category, CI approach (and tools/techniques), Research methodology (research design, research method, research strategy), country/continent (region) of research, and the research outcome.

3. Literature Analysis: Status, Context, Content and Research Methodology

This SLR is based on a sample of 81 papers. The sampled papers were classified as Qualitative, Quantitative and Mixed method on the basis of the nature of data collected in the research study. In the sample, 19 papers were quantitative (used correlation & regression, exploratory & confirmatory factor analysis, and simulation); 57 papers were qualitative (used experts' opinion, interviews, observations, literature review, and single or multiple cases); and 5 papers used both qualitative and quantitative approaches (thus, categorized as mixed method). Considering the context of CI research, the dominant PS sectors were healthcare (28 papers) and accounting & financial services (21 papers). The IT/ITeS sector (7 papers) dominated in the application of quantitative data for CI research. The sampled papers were further analysed with the aim of providing a picture of status, context, content and research methodology adopted in the recent CI research conducted in the PS sector.

3.1 Status of CI research in PS
3.1.1   Publication Distribution
The analysis showed the evidences of research on CI practices since 1992 with the initial papers focused on the assessment of TQM as a management system for enhancing PS delivery (Ritsema et al. 1992; Raffio,1992; Mueller, 1992). In a series of papers, Harte and Dale (1995a; 1995b) examined the challenges towards the introduction of TQM in different PS categories. The authors identified that customer, culture and structure were the key elements for a successful strategy to introduce TQM in the PS.

Further, the journal-wise distribution of the sampled papers showed that most of the papers are published in academic journals dedicated to Quality Management such as MSQ (now known as Journal of Service Theory and Practice or JSTP), BPMJ, IJQRM and IJPPM. Additionally, the review showed that CI papers were published in journals dedicated to specific PS category such as healthcare (IJHCQA) and information technology (I & M).

3.2 Context of CI research in PS sector
3.2.1 PS sector-wise distribution of CI publications

Considering the context of the research, analysis revealed that the healthcare services dominated the academic research focus on CI applications. In the healthcare category, the research focus was primarily on enhancing efficiency of healthcare operations such as patient (acute) care, health information management, medical record processing, outpatient department (OPD), operation theatre (OT), post-operative care, trauma centre, laboratory, and pharmacy. The typical areas of improvement in the healthcare operations were reduction in the waiting time for the laboratory test report, length of patient stay, medical errors, patient waiting list; patient care & access, utilization of resources such as OT and overall patient experience. The analysis of sampled paper showed that the dominating CI programs adopted in the healthcare sector were Lean Management with 43% share in sampled papers, followed by TQM with 25% share. Thus, the review established that that despite their heterogeneous nature, healthcare operations are well-researched for possible CI program development and implementation.

After healthcare, accounting & financial service sector were found to be the next main beneficiary of CI focused research with 25% share of sampled papers (21 papers). Most of the papers in this category were focused on banking (8 papers), credit (6 papers), insurance (4 papers) and accountancy (3 papers) services. The most researched CI programs in this sector was Lean Six Sigma (28%) followed by Lean Management (19%). The papers specific to IT/ITeS services accounted for 19% share (15 papers) of the total sampled papers, with research focused on software development and information system management. Thus, the review revealed that together the three PS categories viz. healthcare, accounting & financial and IT/ITes services constituted 80% of the total extracted sample.
This review revealed that there has been little research on CI in Legal services (or law firms) with, merely, 3% share of total sampled papers. In one of the earliest papers, Blodgett (1996) addressed the design of CI programs for client satisfaction in US-based law firms. He highlighted the need for changes in the compensation system and administrative processes for the success of CI initiatives in the legal services. In an

empirical study on law firms in Iowa (US), Abraham et al. (1998) found that implementation of TQM framework facilitated in the reduction of costs and increase in operational efficiency. Overall, the literature review revealed that there is non-uniformity in the focus of academic research on CI across different PS categories with healthcare services receiving the most and legal services getting the least attention from researchers (Table 2).

Table 2: PS category-wise references of CI publications

PS sector	References
Financial services	Heckl, 2010; Piercy and Rich, 2009; Sunder & Antony, 2015; Lenka et al. 2010; Wang & Chen, 2010; Longo & Cox, 1997; Macdonald, 1995; Sarkar et al, 2013; Islam, 2016; Leyer & Moormann, 2014; Kumar et al. 2008; Buavaraporn & Tannock, 2013; Lokkerbol et al. 2012; Leyer & Chakraborty, 2013; De Koning et al. 2008; Uprety , 2009; Fraser & Fraser, 2009; Delgado et al. 2010; Knights & McCabe, 1997; Antony, 2007
Healthcare services	Joosten et al. 2009; Lim & Tang, 2000; Costa et al, 2016; Allen et al. 2010; van der et al. 2011; Mueller, 1992; Manjunath et al. 2007; Dean, 2014; Gijo & Antony, 2014; de Souza, 2009; Fillingham, 2007; Alessandro et al. 2013; Chiarini & Baccarani, 2016; LaGanga, 2011; Dobrzykowski et al. 2016; Burgess & Radnor, 2013; Taner et al. 2007; Celano et al. 2007; Ker et al, 2014; McIntosh et al. 2014; Lam, 2015; Hicks et al. 2015; Alessandro & Antony, 2010; Bhat et al. 2014; Castle et al. 2009; Bhat et al. 2016; Cheng et al. 2015; Bancroft & Saha, 2016
Engineering & Management consultancy services	Ogunbiyi et al. 2014; Jorgensen & Emmitt, 2009; Hook & Stehn, 2010; Sinclair & Arthur, 1994; Aomar, 2012
IT/ITes services	Rahman & Siddiqui, 2006; Hong & Goh, 2003; Mahanti & Antony, 2009; Issac et al. 2004; Parzinger & Nath, 1998; Antony & Fergusson, 2004; Phan et al. 1995; Rothenberger et al. 2010; Hicks 2007; Mahanti & Antony, 2006; Kundu & Bairi, 2014; Staats et al. 2011; Pearson et al. 1995
Legal services	Abraham, 1998; Esteban-Ferrer & Tricás, 2012; Blodgett, 1996
Multiple PS	Chakraborty & Tan, 2012; Antony, 2006; Ritsema et al. 1992; Harte & Dale, 1995a; Harte & Dale, 1995b; Harte & Dale, 1995c; Chakraborty & Tan, 2013; Gupta et al. 2016; Haywood-Farmer & Nollet, 1994; Antony, 2014

3.3 Content of CI research in PS sector

The literature on CI approaches contains investigations on many different topics, questions and problems in different PS environments. Therefore, the sampled papers were analysed to explore the content of CI research (CI themes) using the variables: CI

implementation methodology (and tools & techniques) and research outcomes (in terms of benefits, challenges and critical success factors or CSFs).

3.3.1 Established CI methodologies (and tools/techniques) for PS sector

Review showed that TQM was the most accepted (27 papers) CI methodology among the PSFs. The application of TQM principles, procedures and practices for service operations management and improvement is widely explored in most categories of the PS sector, specifically healthcare (Lam et al. 2015; Mosadeghrad, 2013; 1997; Manjunath et al. 2007; Lim & Tang, 2000). The next popular CI program among these services was the LM (24 papers). The papers portrayed application of lean tools (such as value stream mapping, process & flow analysis, and process standardization) for enhancing the operational performance indicators of services (such as queue time, order entry time, transit times, admission delays) (Chiarini & Baccarani, 2016; Dobrzykowski et al. 2016; Hicks et al., 2015). SS, an established data-driven CI methodology (Define-Measure-Analyse-Improve-Control or DMAIC) among the manufacturers, was gaining acceptability among PSFs as explained by 24% share of total papers. This data-driven approach found multiple application in Critical-to-Quality (CTQs) parameters related to software development services (Mahanti & Antony, 2009; Antony & Fergusson, 2004), banking services (Sunder & Antony, 2015; Leyer & Chakraborty, 2013), and quasi-manufacturing operations in the healthcare category (Feng & Antony, 2010). A combination of LM and SS - the LSS hybrid approach, was accepted as a unified framework for process improvement in financial services (Vashishth et al. 2017; Lokkerbol et al. 2012; Delgado et al.2010; De Koning et al. 2008); and healthcare operations related to information management (Bhat et al. 2014) and medical records management (Bhat et al. 2016). The literature was found to be deficient in the exploration of other popular CI methodologies such as Kaizen (well-established among manufacturers) in PS. A summary of paper references based on the CI approaches is shown in Table 3.

Table 3: CI approaches in PS sector

CI methodology	References
SS	Heckl, 2010; Chakraborty & Tan, 2012; Antony, 2006; Islam, 2016; Antony & Fergusson, 2004; Gijo & Antony, 2014; Mahanti & Antony, 2009; Hong & Goh, 2003; Antony, 2007; Allen et al. 2010; van der et al. 2011; Antony, 2014; Sunder & Antony, 2015; Chakraborty & Tan, 2013; Kumar et al. 2008; Leyer & Chakraborty, 2013; Mahanti & Antony, 2006;Uprety , 2009;
TQM	Rahman & Siddiqui, 2006; Phan et al. 1995; Rothenberger et al. 2010; Pearson et al. 1995; Sinclair & Arthur, 1994; Lam 2015; Abraham, 1998; Buavaraporn & Tannock, 2013; Haywood-Farmer & Nollet, 1994; Harte & Dale, 1995a; Harte & Dale, 1995b; Macdonald, 1995; Knights & McCabe, 1997; Issac et al. 2004; Blodgett, 1996; Parzinger & Nath, 1998; Ritsema et al. 1992; Manjunath et al. 2007; Esteban-Ferrer & Tricás, 2012; Longo & Cox, 1997; Lenka et al. 2010; Mueller, 1992; Harte & Dale, 1995c; Lim & Tang, 2000

Lean management	Ogunbiyi et al. 2014; Staats et al. 2011; Chiarini & Baccarani, 2016; Dean, 2014; Costa et al, 2016; Fillingham, 2007; de Souza, 2009; Jorgensen & Emmitt, 2009; Hook & Stehn, 2010; Piercy & Rich, 2009; Hicks, 2007; Ker et al. 2014; Joosten et al. 2009; McIntosh et al. 2014; Leyer & Moormann, 2014; Cheng et al. 2015; Bancroft & Saha, 2016; Kundu & Bairi, 2014; LaGanga, 2011; Dobrzykowski et al. 2016
LSS	Sarkar et al, 2013; Alessandro & Antony, 2010; Bhat et al. 2016; Lokkerbol et al. 2012; De Koning et al. 2008; Wang & Chen, 2010; Fraser & Fraser, 2009; Delgado et al. 2010; Alessandro et al. 2013

4. Discussion and Conclusion

In this section, the findings of the present SLR are discussed to identify direction for future research in the field of CI approaches for improving PS operations in terms of: context; content; and research methodologies.

4.1 Context: Future directions

The SLR revealed that although CI has been an established process improvement approach in the manufacturing environments, it is yet to gain the confidence of PSFs. Gupta et al. (2015) pointed out the need for studying difference between services and manufacturing processes to standardize the CI approaches applicable for service industry. Thus, the review highlighted the need to further explore the PS specific process improvement frameworks. Additionally, the SLR highlighted the need of testing the established CI theories for various PS sectors with due consideration to the diverse PS characteristics and the associated operational control challenges. Further, the future CI research may consider the theoretical perspectives extensively adopted in other research streams (such as supply chain management) such as Systems theory (Simons and Taylor 2007) for the improvement of PS operations. This will facilitate a theoretically grounded and replicable research in the field of CI in PS (Kennedy & Widener, 2008).

Review highlighted that whereas, healthcare was the most studied PS category in CI research, legal services were the least researched area. Further, most investigations happened in the context of lean healthcare (12 papers). For instance, Dobrzykowski et al. 2016 examined the relationships among comprehensive lean orientation, patient safety, and financial performance for the acute-care hospitals in the USA; Chiarini & Baccarani (2016) analysed the deployment path for lean implementation, the possible benefits and pitfalls in public healthcare; and Hicks et al. (2015) evaluated the application of the Lean 3P (production, preparation, process) participative method in the design of an endoscopy unit at Gateshead Health NHS Foundation Trust in England. The accounting & financial services were explored for application of all key CI methodologies viz. TQM (5 papers), LM (4 papers), SS (5 papers), and LSS (7 papers). Most of the papers in the financial service context were case studies describing the implementation of CI programs and the derived benefits (Delgado et al. 2010; Lokkerbol et al. 2012). In context of the IT/ITeS services, most papers highlighted the role of CI approach (especially, LM and SS) in enhancing the efficiency of software development process. For instance, in an empirical study in India, Rothenberger et al.

(2010) validated the positive relationship between quality efforts during the software development process and the product quality; Staats et al. 2010 examined the influence of the lean initiatives on the internal processes and knowledge management of software service providers. Although the initial focus of CI research in context of the consulting services (engineering & management) was on the application of TQM principles and guidelines (Dale & Harte, 1997; Sinclair & Arthur, 1994), later, the attention shifted to the implementation of LM tools & techniques (Marzouk et al. 2011). The review showed no evidence of research on application of data-driven CI approaches such as SS in the consulting services. In case of law firms, the early CI research in services explored the role of TQM in enhancing the efficiency (Blodgett, 1996; Abraham, 1998). Nevertheless, there were few evidences of investigation on the applicability of contemporary process improvement approaches in the legal services (Esteban-Ferrer & Tricás, 2012). Therefore, more research is needed in specific professional service settings such as law firms, engineering and management consulting firms, where most of literature is still anecdotal or descriptive.

With regard to continental or national context of the research, most papers analyzed data from case studies from a single country. Those classified as "multiple countries" or "multiple continents" in the sample, used data from international surveys or from multiple cases local to different countries without considering the influence of national culture. Thus, future research on impact of different dimensions of national culture on the effectiveness of CI implementation in different categories of PS sector is worth an exploration. This research will benefit PSFs operating from different countries in ensuring useful knowledge transfer between subsidiaries that are dispersed worldwide (Kull et al. 2014). Further, considering the focus of most CI efforts on meeting the firm and industry specific requirements (indicated by 49% and 45% share of firm and industry specific papers), future research should be in the direction of designing the CI programs based on customer- and employee-level requirements.

4.2 Content-future directions

Considering content, the future directions of research emerge from the analysis of following variables: CI implementation methodologies & tools; and CI implementation outcomes. When it came to CI methodologies, TQM and LM were found to be more acceptable CI approaches among PSFs than SS and LSS. The review highlighted the role of TQM in shaping the employee behaviour to achieve better PS quality (Lim & Tang, 2000), encouraging attention to the customer's requirements in service delivery design (Esteban-Ferrer & Tricás, 2012) and coping with the inherent variability in the interaction between professionals and customers in PS delivery (Issac et al. 2004). In relation to LM in PS, review emphasized the need for focusing on the respect for people and employee engagement for the success of lean implementation programs (Gupta et al. 2015; Burgess and Radnor; 2013). Though the review highlighted the evidences of cases on the role of SS in improving the in-patient care areas in the healthcare services (Liberatore, 2013) or software design processes in the IT services (Mahanti & Antony, 2009), these results do not assess the overall effectiveness of SS as a CI approach for PS. Therefore, the future research should be in the direction of exploring the potential areas where SS could be exploited more in the PS functions. From the point-of-view of CI implementation tools, the review revealed that the use of non-statistical tools/techniques such as VSM, 5S, etc. was prevalent in most PS cases as

compared to the statistical tools such as hypothesis testing for inferential analysis; correlation & regression for predictive analysis of Six-Sigma toolkit.

Regarding content on CI implementation outcomes, the review highlighted the need for borrowing theoretical perspectives (System theory, Agency theory to name a few) from the established field of knowledge for conceptualizing CI frameworks for PS specific processes such as patient care (Hicks et al. 2015), and software development (Hong & Goh, 2003). Future research should be in the direction of empirically testing relationships among useful constructs in context of the PSFs. These relationships may include impact of job characteristics and motivational outcomes on CI initiatives; relationship between team-based form of work and CI outcomes; and relationship between CI efforts and sustainable operations. Additionally, the findings from the review on the CI implementation outcomes (in terms of benefits, challenges and CSFs) should be used to set guidelines for designing CI programs specific to the PS sector.

4.3 Research Methods – Future directions

Upon combining the SLR results under the research methodology (research design and strategy), it was found that research in the field of CI in PS is currently in an initial stages of research life cycle. Majority of papers in the review were exploratory and are characterized by observations, empirical exploration on PS phenomena and related CI challenges. Although almost one-fourth of papers in the review adopted theory-building research, they mainly borrowed theories from other bodies of knowledge to build new CI frameworks and models. Further research in this field may be built on the theoretical perspective adopted in more consolidated fields of knowledge. Furthermore, given the relevance of the topic to the growth of most service economies in the world, it is necessary that the future research should go beyond single case studies and develop multiple case studies or surveys to build and test models that can be generalized across different PS settings.