

See discussions, stats, and author profiles for this publication at: <https://www.researchgate.net/publication/271309009>

Strategic sourcing with multi-stakeholders through value co-creation: An evidence from global health care company

Article in *International Journal of Production Economics* · January 2015

DOI: 10.1016/j.ijpe.2015.01.008

CITATIONS

7

READS

350

4 authors, including:



Sai Nudurupati

Manchester Metropolitan University

39 PUBLICATIONS 961 CITATIONS

SEE PROFILE



Arijit Bhattacharya

University of East Anglia

73 PUBLICATIONS 921 CITATIONS

SEE PROFILE

Some of the authors of this publication are also working on these related projects:



Understanding Sustainable Supply Chain Processes and Practices [View project](#)



Achieving sustainability through innovation-led lean approaches to manufacturing supply chains [View project](#)

Author's Accepted Manuscript

Strategic sourcing with multi-stakeholders through value co-creation: An evidence from global health care company

Sai Nudurupati, Arijit Bhattacharya, David Lascelles, Nicholas Caton



www.elsevier.com/locate/ijpe

PII: S0925-5273(15)00011-0
DOI: <http://dx.doi.org/10.1016/j.ijpe.2015.01.008>
Reference: PROECO5978

To appear in: *Int. J. Production Economics*

Received date: 16 June 2014
Accepted date: 15 January 2015

Cite this article as: Sai Nudurupati, Arijit Bhattacharya, David Lascelles, Nicholas Caton, Strategic sourcing with multi-stakeholders through value co-creation: An evidence from global health care company, *Int. J. Production Economics*, <http://dx.doi.org/10.1016/j.ijpe.2015.01.008>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting galley proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

**Strategic Sourcing with Multi-Stakeholders through Value Co-Creation:
An Evidence from Global Health Care Company**

Sai Nudurupati

Department of Marketing, Operations and Digital Business
Manchester Metropolitan University Business School
Manchester, M15 6BH, UK
E-mail: S.Nudurupati@mmu.ac.uk

Arijit Bhattacharya*

(Corresponding Author)

Brunel Business School
Brunel University London
Kingston Lane, Uxbridge, Middlesex
UB8 3PH, UK.
E-mail: arijit.bhattacharya@brunel.ac.uk
arijit.bhattacharya2005@gmail.com

David Lascelles

Department of Marketing, Operations and Digital Business
Manchester Metropolitan University Business School
Manchester, M15 6BH, UK

Nicholas Caton

Department of Marketing, Operations and Digital Business
Manchester Metropolitan University Business School
Manchester, M15 6BH, UK

Abstract: This article explores how a firm is able to consider the value co-creation potential of its suppliers, mediate the goals and actions of both its external and internal stakeholders, and develop strategic supplier partnerships that go beyond compliance to contractual agreements to innovative value co-creation activities. The study contributes to filling a knowledge gap in understanding the process of value co-creation in a service context by providing empirical evidence, by means of case-based action research in a global healthcare company (HCC), on strategic multi-sourcing decision-making and value co-creation within multi-stakeholders' collaborative partnerships. The case-based action research discussed in the article lays a foundation for normative theories of multi-stakeholder multi-sourcing strategic decision-making. The article describes how the firm uses the Kraljic portfolio purchasing matrix for initial screening of potential suppliers; identifies multiple stakeholders and mediates multiple stakeholder goals to establish behavioural factors for strategic sourcing decision-making and evaluating the effectiveness of multi-stakeholder collaborative decision-making during the process to develop a value co-creation system. The arguments and findings draw attention to a number of specific stakeholder expectations and goals that need to be considered before embarking on a strategy of a collaborative multi-stakeholder supplier innovation strategy. The findings of the research vindicate and qualify the approach used to develop an innovative collaborative partnership through stakeholder mediation to co-create value.

Keywords: Strategic sourcing decision-making; Multi-stakeholder; Mediating collaboration; Value co-creation; Kraljic portfolio approach.

1. Introduction

In stakeholder theory, value creation is a necessary and explicit part of the business mission (Freeman 1994). The activity of value co-creation in a business is known to be “*decidedly pro-stakeholder*” (Freeman et al. 2004). In order to remain competitive in today's business economy, strategic collaboration and partnerships between stakeholders and suppliers are essential in most firms (Ulaga 2003). This collaborative partnership is a complex web of some intangible issues evolving from the sourcing decision-making process. Ideally, the generic process of selecting and evaluating a strategic supplier involves two stages (Spekman 1988). A pool of potential strategic suppliers is identified in the first phase, while the second stage acts as a filter where the most appropriate strategic suppliers are selected based on their level of commitments, collaboration and appropriate metrics by establishing a threshold performance level (Spekman 1988). However, this process involves mediating multi-stakeholders for value co-creation activities.

Purchasing decision-making through value creation in a supplier–purchaser relationship is multi-dimensional in nature, consisting of several functionalities, e.g. supplier efficiency, effectiveness and network functions (Möller and Törrönen 2003). Due to the strategic nature of the key supplier relationships and collaborative partnership, the purchaser should evaluate

the value co-creation capacity of the potential strategic suppliers (Möller and Törrönen 2003). Both the monetary and nonmonetary benefits, risks and sacrifices should be included in the assessment of value in the supplier–purchaser relationship (Ng and Nudurupati, 2010). Ng et al (2011) argue that purchasers and suppliers need to align their expectations, processes, culture, behaviours, complementary competencies, co-operate with each other and finally empower and co-ordinate to manage the perceived joint benefits risks and sacrifices. Möller and Törrönen (2003) argue that the value co-creation potential of a supplier can be assessed by deriving the key operational capability indicators if “*there is sufficient benchmarking information in the form of existing alternative offerings and solutions*”.

Although research on multiple stakeholder based strategic sourcing were studied using conventional procurement processes in the past (Spekman 1988; Macbeth and Ferguson 1994; Ellram 1995; Lewis 1995; Lock 1998; Sadler 2003; Scott et al. 2014; Dey et al. 2014), there is limited research on how firms can mediate with its multiple stakeholders to co-create value (Francis et al. 2014; Romero and Molina, 2011) through collaborative strategic sourcing partnerships. In particular, the following knowledge gaps in literature have been identified:

- There are only a few examples of how procurement firms classify the value co-creation potential of their suppliers (who provide services) and manage the transition of such suppliers into strategic partnerships.
- There are few examples in the literature of value co-creation of services. Much of the extant literature appears to focus on complex engineered products.
- There appears to be very little in the extant literature on the measurement of value co-creation opportunities or on supplier performance measurement systems that go beyond compliance to contractual agreements.

Hence the overall aim of this research is to explore how a firm can mediate multiple stakeholders (both internal and external) and engage in strategic partnership with multiple suppliers in co-creating value. This study is based on a four step action research process within a global Health Care Corporation (referred to in this paper as HCC) and contributes to the existing body of knowledge. Firstly, this case-based action research involves identifying specific stakeholders and mediators in the context of HCC’s strategic intent. Secondly, the research plots all the relevant suppliers using Kraljic’s matrix, and selects the suppliers with the potential to contribute to the strategic intent. Thirdly, the research mediates the stakeholders expectations through eight behavioural metrics to shift the existing culture from purchaser command-and-control to the development of an open culture of collaboration through value co-creation with strategic suppliers. Finally, the research measures the value co-creating activities through eight behavioural metrics on three dimensions, viz. engagement, collaboration and innovation.

The outcomes of this study include three findings. Firstly, it developed a process of mediating internal and external stakeholders as well as selecting strategic suppliers. Secondly, it developed an eco-system based on eight behaviours for multiple stakeholders in co-creating

value and delivering innovation (i.e. the strategic intent in this case). Finally, a measurement framework (based on the balanced scorecard, Kaplan and Norton, 1992) was developed for evaluating the suppliers' performance beyond their contractual compliance. The following section discusses background literature, including collaboration and partnership aspects of strategic multi-supplier development and evaluation and the reported value co-creation activities in business decisions. The subsequent section then presents the research design, taking into consideration the action research strategy and its application to HCC. This is followed by a discussion of the key findings of the study. Finally the paper concludes with comments on the limitations of the study and provides an indication of future directions for research.

2. Literature Review

Conventional procurement processes include aggressive bidding and negotiation activities. The consequences of these processes are insufficient trust, poor quality products and/or services, poor service delivery by suppliers and higher product and/or service delivery costs. These consequences are reduced if each actor in the supply network visualises itself as an investor (Lewis 1995). The term '*investor*' could be seen as a metaphor for the provision of cooperation and partnership with suppliers, thereby maximising the benefits of the procurement process (Lewis 1995). Spekman (1988) defines "collaboration" as "*the process by which partners adopt a high level of purposeful cooperation to maintain a trading relationship over time*". It has been argued that collaboration between purchaser and supplier generates "*a capacity for innovation*" (Lewis 1995).

Collaborative partnership sourcing is an element of an organisation's competitive strategy (Sadler 2003). Many organisations promote strategic collaboration and partnerships with their suppliers within a competitive business environment (Ellram 1995). It has been observed that partnership sourcing is beneficial as it creates a relationship based on mutual trust between suppliers and purchasers (Macbeth and Ferguson 1994). A firm implements partnership sourcing with the intention of exploiting multiple benefits from its competitive strategy. Such benefits include lead time reduction, inventory reduction, stock time reduction, increases in flexibility and cash flow (Spekman 1988, Lock 1998). Additional advantages of partnership sourcing are: successful long-term planning, innovation and technological development. Therefore, greater benefits are obtained through mediating the roles of multi-stakeholders in collaborative partnerships between suppliers and purchasers. Therefore, the scope of the literature review is focussed on strategic sourcing decision-making issues and considers the following aspects: collaboration and partnership in multi-supplier development and evaluation, involvement of multi-stakeholders, tools for mediating decision-making, and the process of value co-creation.

2.1 Collaboration and partnership in multi-supplier development and evaluation

For a significant period of time the prevalent sourcing strategy was to select a single supplier, on the basis that single sourcing leads to "*foster better collaboration and partnership and reduce cost*" (Zhang and Zhang 2011). This notion has proved to be inappropriate as a single sourcing strategy for all purchase orders because it involves high risk and less supply chain

robustness (Zhang and Zhang 2011). In this regard multiple sourcing decision (Bhattacharya et al. 2010) involving collaboration and partnership plays a pivotal role (Bhattacharya et al. 2014) for a firm. In a multiple sourcing decision “*mutual entanglement*” and “*not blind trust*” “*is what binds important suppliers to customers*” (Kamath and Liker 1994). This “mutual entanglement” helps to build a purchaser’s dependency on the suppliers’ technical know-how within a collaborative business environment (Kamath and Liker 1994). The “mutual entanglement” between the firm’s partners (i.e. suppliers) and the firm (i.e. purchaser) entails flexibility where specific knowledge transfer is sometimes suggested by the firm’s partner (Kamath and Liker 1994; von Corswant and Tunälv 2002). The role of multiple suppliers in collaboration and partnership is significant. In a collaborative environment multiple suppliers become inter-dependent –even though they are competitors and co-workers at the same time (Bapna et al. 2010). Reliance on other suppliers’ performance is crucial in order to meet the firm’s strategic intent. Examples of collaborative partnership in supplier development and evaluation are Toyota and Eaton Corporation (Kamath and Liker 1994). In a collaborative sourcing strategy the suppliers are required to adapt their roles in order to cope with a changing business scenario in which failure to engage will lead to reduce value creation opportunities for the existing partners. In a successful collaborative partnership, it is important for a mature supplier to co-operate with other suppliers (Ahuja 2000) in order to remain updated in terms of both market and technology, develop new capabilities, maintain competitiveness, and learn via a critical review of development results (von Corswant and Tunälv 2002).

Although multi-stakeholder collaboration and partnership have several advantages in sourcing decision-making, its inappropriate implementation may result in failure. This is mainly because of the lack of appropriate commitment and involvement of the purchaser and suppliers. Some of the common identified reasons of failure are (Lock 1998):

- (i) lack of appropriate commitment
- (ii) lack of resources and planning
- (iii) poor communication and information sharing
- (iv) unrealistic and arbitrary targets
- (v) targets which cannot be measured
- (vi) behavioural changes or conflicts in the key personnel within supplier and purchaser.

The overall goal of supplier development activities is to increase both buyer and supplier performance through a greater commitment by the buying firm to its suppliers in terms of partnership and collaborative improvement programmes (Krause 1997). Supplier development is especially important for critical items (Osiro et al. 2014, Kraljic 1983, Nellore and Söderquist 2000 and De Boer et al. 2001). Krause (1997) defines supplier development as “*any effort of a firm to increase performance and /or capabilities to meet the firm’s short-and/or long-term supply needs.*”

Effective supplier development initiatives include development of strong partnership and integration ties between all the stakeholders (including suppliers) as a basis for long term engagement, collaboration, innovation and continuous improvement (He et al. 2014, Blome

et al. 2014, Krause 1997). The extant literature reveals that “*the higher the evaluation of the potential for partnership of a particular supplier, the higher the chance of developing a strategic partner will be*” (Osiro et al. 2014). The complexity of supplier development is compounded when it considers collaboration between the firm, its suppliers and multi-stakeholders.

2.2 Multi-stakeholders in supplier evaluation

A multi-stakeholder approach to supplier evaluation is ‘*too complex to be addressed effectively without collaboration*’ (Roloff 2008). The importance and influence of multiple stakeholders in sourcing decisions in order to ensure that the expectations of the end users of a firm’s products/services are met has been widely acknowledged by practitioners and researchers (Scott et al. 2014; Dey et al. 2014; Roden and Lawson 2014; Genovese 2013; Reuter et al. 2012; Goebel et al. 2012; Ho et al. 2011; Kamath and Liker 1994). Involvement of internal stakeholders in a firm’s sourcing strategy and making use of stakeholder pressures positively contribute in influencing supply chain partners’ behaviour (Grimm et al. 2014). In strategic decisions, the aggregate outcome of disparate stakeholders, which may be an individual person or an entity within the firm, and may be financial and non-financial stakeholders, is considered (Firouzabadi et al. 2008).

Strategic sourcing decisions tend to be non-repetitive and complex in nature, reflecting a long term effect on the business success of a firm. These decisions may have a large pool of conflicting, intangible and tangible assessment criteria and have incomensurable units of measurements (Bhattacharya et al. 2010). However in such decisions, conflicting views exist between different stakeholders (Kochan and Rubinstein 2000). Typically, the stakeholders for the sourcing decisions may include the firm’s managers, the firm’s employees, strategic suppliers and consumers (Clement 2005; Firouzabadi et al. 2008; Kodikara et al. 2010). When suppliers become one of the important stakeholders to the firm, some of them may decide to make specific investments in the collaborative partnership for the strategic benefits of the purchaser firm (Banerjee et al. 2008). Freeman et al. (2004) report that stakeholders of a firm “*articulate the shared sense of the value they create*”, thereby providing a momentum to the firm’s performance on a number of metrics. In a strategic sourcing decision, it is important firstly to identify the key stakeholders for the specific purpose and not to rely on a generic list of stakeholders (Ackermann and Eden 2011).

2.3 Tool for mediating multi-stakeholder collaborative decision

Implementation of the process of collaborative partnership with strategic suppliers requires an appropriate assessment tool. Despite several criticisms (Dubois and Pedersen 2002; Pagell et al. 2010; Padhi et al. 2012) the purchasing portfolio approach is widely deployed in business as a basis for strategic sourcing decisions (Knight et al. 2014). A recent example of the application of the purchasing portfolio matrix is in the aerospace industry, where it was used as an assessment tool for quantifying the benefits achieved for better supply chain visibility, combining the impact on profits and supply risk (Caridi et al. 2014). The extant literature identifies a range of portfolio models supporting strategic purchasing decisions and supplier selection (Gosling et al. 2010; de Haan et al. 2003; de Boer et al. 2001; Olsen and

Ellram 1997). The consensus is that the purchasing portfolio approach is a useful tool “*for describing and differentiating purchasing situations and developing appropriate sourcing strategies*” (Knight et al. 2014).

Appropriate allocation of resources among different activities of a strategic sourcing decision under collaborative environments is crucial. The appropriate allocation of resources to capable stakeholders and other cross-functional agents through joint workshops can facilitate smooth functioning of the strategic sourcing decision-making process thereby building an effective purchaser–supplier relationship (Roden and Lawson 2014). Portfolio models greatly facilitate the analysis of the firm’s supplier-stakeholder relationships, thereby addressing the issues relating to the allocation of available resources in a collaborative and mediating the strategic decision-making environment (Olsen and Ellram 1997; Armstrong and Brodie 1994, Turnbull 1990; Krapfel et al. 1991; Cova and Salle 1991). Although portfolio models analyse competitors, purchasers and suppliers, the use of portfolio models in purchasing / sourcing decision-making is limited (Olsen and Ellram 1997). In a strategic sourcing decision-making process the purchasing portfolio approach should integrate the purchasing function into the strategic element of decision-making process (Pearson and Gritzmacher 1990).

Kraljic’s (1983) purchasing portfolio approach covers a number of dimensions of complexity as well as importance. Profit impact and supply risk are the two perceived importance and complexity factors of a purchasing situation. Kraljic (1983) proposes a categorisation matrix with four itemised categories, viz. strategic, bottleneck, leverage and routine that demand a distinctive purchasing strategy. Items categorised in the leverage, bottleneck and strategic quadrants of the Kraljic matrix require increasing degrees of collaboration in the purchasing process (Nellore and Söderquist 2000). In Kraljic’s portfolio matrix the strategic sourcing decisions and the purchase categories are grouped on the basis of the complexity, importance and value of a number of factors of the services (de Boer et al. 2001). Banerjee et al. (2008) report that a firm should reduce the number of suppliers positioned leverage quadrant in order to encourage more specific investments by suppliers. This is also advantageous when the firm has more extensive network of collaborative suppliers (Banerjee et al. 2008).

2.4 Value creation and co-creation in sourcing decisions

Purchasing firm value creation has been studied extensively in literature and considered from a relationship marketing perspective, with value comprising customer–supplier relational processes (Tuli et al. 2007; Eggert et al. 2006; Liu et al. 2005). Value is created when the supplier delivers solutions to the purchaser’s business needs from the consumption or usage point of view (Geng et al. 2010). The strategic suppliers are required to develop collaborative partnership processes with the purchaser and multi-stakeholders so as to co-create value together. The competitiveness of the value proposition (Vargo and Lusch 2004) offered by the supplier depends on how the value proposition can be delivered with minimum disruption to the purchaser’s business processes (Johnstone et al. 2009).

Value co-creation is described as “*spontaneous, collaborative and dialogical interactions*” (Ballantyne and Varey 2006, p. 344). Bettencourt et al. (2002) investigate knowledge

intensive business services and report the partnership perspectives and roles in value co-creation. In the process of value co-creation, resources, i.e. “*people, systems, infrastructures and information*” (Gronroos 2004), are exploited through a number of collaborative partnership processes in order to achieve the optimum benefit for the purchaser (Tuli et al. 2007; Vargo and Lusch 2004; 2008; Spring and Araujo 2009; Ng and Nudurupati 2010; Vargo 2011). Baines et al. (2011) argue that in the process of co-creation, appropriate actions should be taken between suppliers and purchasers, such as locating the suppliers’ facilities closer to the purchaser’s operations as well as understanding, monitoring, conditioning and servicing of sophisticated technology systems and their use to ensure speed and effectiveness of their response to purchaser’s needs while minimising their costs. Multiple stakeholders of the purchaser company govern value and co-creates it with the suppliers (Ballantyne and Varey 2006; Payne et al. 2008; Frow and Payne 2011). Therefore, in a value co-creation approach suppliers should focus on delivering benefits and provision of solutions in totality using a collectively exclusive collaborative partnership approach. Hence, the challenge of the purchaser company is to pursue an integrative and trans-disciplinary methodology (Vargo and Lusch 2008, Bastl et al. 2012) so as to enable the value co-creation process in strategic sourcing decision-making through a multi-stakeholder collaborative approach.

3. The Research Design

Although there is some evidence, as discussed in the literature review, of practical applications of the purchasing portfolio approach, a critical review of the available literature does not reveal any strong empirical evidence on how multi-stakeholders contribute to strategic multi-sourcing decision-making through a value co-creating and mediating collaborative environment. Therefore, the objective of the systematic method developed during the process of this case-based action research is to identify and manage the multiple stakeholders and mediators who are responsible for the firm’s strategic goals.

Action research was adopted for this study as it requires experimental design and control in the real world to achieve the study objectives (Mumford 2001; Coughlan and Coughlan 2002). In this study, on the one hand, the researchers participated and engaged at HCC (real-world) with full access to experimental design and control over the project (one of the authors facilitated the project at an executive level). On the other hand, the researchers are also engaged in academic activity to instil theoretical relevance (Riordan 1995; Coughlan and Brannick, 2001). The data was collected firstly through personal observation, secondly by participation in meetings as well as interviews with other employees in both formal and informal meetings, and finally from corporate documents (e.g. meeting minutes, project progress reports as well as performance measurement and communication documents). The findings are triangulated against the three data sources mentioned earlier to ensure validity. In line with Gill and Johnson (1991), the researchers (authors) through their interventions and subsequent evaluation not only contributed to the existing knowledge but also solved the practical concerns of the multiple stakeholders in the organisation.

As discussed above, the paper reports on the action study based on a pilot supplier innovation programme initiated in the Facilities Management (FM) organisation of HCC. The duration

of the pilot programme was 21 months. The programme followed four phases as discussed below:

Phase 1 (January 2012): Identification of internal stakeholder expectations

- In late 2011, the senior executive team of HCC acknowledged a strategic imperative to focus on core business, innovation opportunities and alignment of costs to a declining revenue stream. Within this context, it became clear to the FM leadership team that not only was facilities management a non-core business activity but also that this was a category in which innovation was lacking. This was the catalyst for the implementation of a supplier innovation programme, with the overall goal to improve the efficiency of the FM service delivery.
- This phase required the formation of a FM leadership team (which comprised representatives of the key HCC internal stakeholders, viz. FM Operations, Procurement, Finance and Human Resources (HR)) to focus on the development of a supplier innovation that would meet the expectations of each internal stakeholder group.

Phase 2: (March 2012): Supplier selection

- Analysis was performed on the FM supply base according to the Kraljic purchasing portfolio model. 15 strategic suppliers were identified as potential contributors to the programme on the grounds of both purchasing spend and category growth potential.

Phase 3 (April 2012): Mediation of all stakeholder expectations

- In this phase the FM leadership team communicated with representatives of the selected suppliers (i.e., external stakeholders) through “request for price” documentation explaining the supplier innovation strategy and inviting them to a programme launch event.
- The FM leadership team facilitated a two-day workshop attended by representatives of the suppliers that had agreed to participate in the programme. During the workshop HCC FM managers gave a frank overview of their innovation goals and commitment to a cultural shift from customer command-and-control to the development of an open culture of collaboration with strategic suppliers through a set of eight behaviours by which all partners, including HCC FM, would agree to be bound.

Phase 4 (September 2012): Measurement of value co-creation activities

- A new set of agreements and innovation improvement plans linked to the HCC FM balanced scorecard was established. The strategic suppliers embarked on a series of innovation initiatives.
- First quarterly progress review workshop was conducted. Consensus performance (temperature) checks were undertaken. Further action agenda was agreed (January 2013).
- Second quarterly progress review workshop was conducted. Consensus performance temperature checks were undertaken. Further action agenda was agreed (April 2013)
- Third quarterly progress review workshop was conducted. Consensus performance temperature checks were undertaken. Further action agenda was agreed (July 2013)

- Fourth quarterly progress review workshop was conducted. Consensus performance temperature checks were undertaken. Agreed pilot programme has been successful to date (October 2013), which was reflected in their scorecard (amended version of balanced scorecard, Kaplan and Norton 1992 & 1996).

The findings obtained from this case-based action research including the actions taken and outcomes obtained are presented and discussed in the next section using the four phases described above.

4. Case-based Action Research Findings

The research explores the case of a global healthcare corporation (referred to in this case as HCC). HCC operates in over 100 countries employing over 50,000 people worldwide. This case features a UK pilot study. Within HCC, the facilities management (FM) team are responsible for organising all the facilities required to operate the business. The FM leadership team is comprised of representatives of the key HCC internal stakeholders, viz. FM operations, procurement, finance and HR. Whilst this support function had a significant amount of its workforce outsourced across different service lines to a range of suppliers, the existing FM asset base was considered to be highly company-centric for a non-core category when compared to external benchmarks. Of the 1,400 people engaged in FM for HCC, 600 are actually employed by the company with a further 900 employed by suppliers. HCC made the strategic decision to reduce the ratio to 100 employed internally and the rest employed by the suppliers, i.e., the external stakeholders. This involved developing a process to outsource to suppliers various work streams currently resourced by internally employed people.

HCC reviewed its FM service support function to understand if it could be run in a more efficient manner within its European and Americas hubs. This . The review revealed that the firm tended to operate in a traditional procurement mode in that it was strong at directing suppliers rather than working alongside them. HCC was facing a strategic imperative to focus on core business, innovation opportunities and alignment of costs to a declining revenue stream. Within this context, it had become clear to the FM leadership team that facilities management was not only a non-core business activity but also it was a category in which innovation is lacking.

The review of HCC led to a corporate decision to improve the efficiency of the FM service delivery. This required the FM leadership team to focus on two strategic goals:

- (i) to develop an appropriate sourcing model and supplier relationships, and
- (ii) to reshape the asset base to meet the ongoing needs of the business.

The innovative sourcing model that emerged from the four phases of the action research is based on the development of a multi-vendor environment, which is known as “the FM ecosystem”, in which HCC acted as a partner with its strategic FM service suppliers. Although HCC has a number of suppliers delivering products and services, working and

developing relationship with few suppliers was considered paramount to achieve effectiveness and efficiencies gains with the FM operation.

4.1 Phase 1: Identification of internal stakeholders and their expectations

A multidisciplinary team was created. This comprised representatives from HCC (the internal customer), operations, procurement, finance and HR. Each of these internal stakeholders in FM had specific and differing requirements (Table 1), with regard to a supplier innovation programme. The formation of FM leadership team was a key vehicle for mediation between the various internal stakeholders.

Table 1: Specific requirements of multi-stakeholders within HCC

Stakeholders	Specific requirements
Internal customers	Require a reliable cost-effective service with less focus on contractual relationships and more focus on a seamless provision of service from multi-vendor sources
Procurement and FM operations	Share a common goal of making life easier in terms of refocusing managerial effort from vendor supervision to service value enhancement
Finance	Needs to reduce expenditure on non-core asset streams
Human resources	Desire to transfer staff to external service providers within an agreed timescale, and develop an effective change programme for the FM organisation

4.2 Phase 2: Supplier selection

The FM leadership team held a multi-stakeholder workshop to identify their key suppliers. The investigators (authors) decided to use the Kraljic model (Kraljic 1983) to facilitate this process for two reasons. Firstly, because the Kraljic was the extant supplier assessment framework used within HCC and one that the corporate procurement function and FM team felt most comfortable in using in the pilot study. Secondly, the Kraljic model (and its variants) is the most commonly used supplier assessment framework by practitioners (Ferreira et al. 2014; Knight et al. 2014; Gelderman and Van Weele 2003; Olsen and Ellram 1997) and is likely to provide a common reference point when seeking to extend the case study research strategy to other organisations.

Using the Kraljic supply portfolio model as a lens for supplier classification, the leadership team categorised each of the extant supplier positions in terms of profit impact and supply risk and matched them to the four quadrants of the Kraljic portfolio matrix (i.e. *routine* (or non-critical), *leverage*, *bottleneck* and *strategic*), as shown in Figure 1. Examples of supply category matches to the Kraljic model include: *routine* items include stationery, grounds maintenance and cleaning services, *leverage* items include building maintenance and packaging ; *bottleneck* items include energy and specialist laboratory equipment. No FM supply categories were identified as a match for the *strategic* quadrant, This left the FM management team with the challenge of selecting suppliers of what had turned out to be non-strategic purchased item categories and to work with them to develop collaborative value-creating strategic service solutions. It was finally decided that, on the basis of both

purchasing spend and category growth potential, 15 suppliers had the potential to become strategic partners through participation in a collaborative innovation programme.

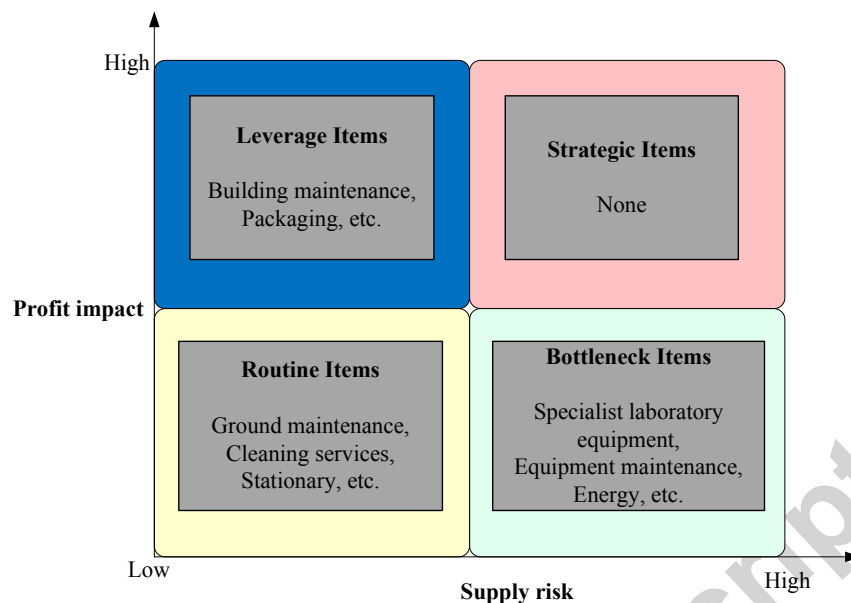


Fig. 1: The Kraljic matrix for selecting the strategic suppliers

The FM management team then began to envisage how they might work with key suppliers to group bundles of individual products and services thereby forming strategic value adding solution sets, or *service systems*, that *strategic* suppliers could manage on behalf of HCC. For example, a building maintenance services provider (currently in the *leverage* quadrant of the FM purchasing portfolio) could take responsibility for facilitating a group of vendors of cleaning services and grounds maintenance to provide a strategic bundle of services, or site maintenance service system, that provided greater value in terms of cost and in the provision of service innovation. Thus a supplier primarily of *leverage* items, in effect, moved into the strategic quadrant by becoming a systems integrator and innovation facilitator. Fifteen such service systems were identified.

4.3 Phase 3: Mediation of all stakeholder expectations

The first action taken by the FM management team in mediating external stakeholder (supplier) expectations was to demonstrate their intent to move to a new procurement strategy based on collaborative innovation. They did so by inviting each of the 15 selected key suppliers to tender for one or more of the potential service systems identified. The formal request for tender (RFT) document provided details of HCC's preception of the workstream content of the new service systems. In addition to the usual commercial cost and service delivery targets, the FM leadership team incorporated into the RFT document eight behavioural factors (Fig. 2) intended to underpin the kind of collaborative framework that selected suppliers were expected to work within. It was explained to the 15 suppliers that the RFT documents were in fact guidelines that they could develop and refine with the FM management before submitting formal tenders to takeover the service systems, and that, subject to subsequent acceptance of tenders, they had been selected to participate in the

leadership of a supplier innovation programme. It was also explained that the next step would be involve participation in a collaborative workshop hosted by the FM leadership team.. All but one of the suppliers agreed to participate in the programme. One supplier decided not to participate and accepted the inevitable consequence of non-participation: a significant reduction in sales income from its relationship with HCC.

A two day workshop was attended by the representatives of all 14 suppliers that had agreed to participate in the programme. During the workshop HCC FM managers gave a frank overview of their innovation goals and commitment to a cultural shift from customer command-and-control to the development of an open culture of collaboration with strategic suppliers. The participants then discussed the eight behaviours by which all partners, including HCC FM, would agree to be bound. In effect, they agreed a set of rules to underpin and codify the collaborative culture of innovation and to provide the basis for measuring progress to the agreed ecosystem goals. The rationale behind these decision criteria was to change how the organisation collaborated and cooperated with its strategic suppliers to primarily unlock innovation from thier supply base.

The first driver of collaborative partnership sourcing indicated that all supplier actions had to be in the interests of the customersfor FM services within HCC (i.e. the customers of FM operations, and in effect, the consumers of the services provided by the FM ecosystem). The next factor related to the removal of all barriers that inhibited effective collaboration and issue resolution. For example, bad news (as well as good) must travel fast. The third behavioural factor suggested solving the urgent issue first, and if correctly billed, then payment would be made and not queried. Identification and communication of potential future issues that might impact on other members of the ecosystem well before they became a threat was included in the eight behavioural factors. In line with this factor, FM introduced a help desk in order to facilitate the process. The fifth driving behavioural factor was to identify and evaluate the impact of the potential service innovations on other ecosystem members, and on the safety, health and environmental responsibilities of HCC. FM operations encouraged ecosystem members to engage in continuous improvement of service delivery processes and to recognise that Kaizen events were a driver of service innovation. This linked to the “champion continuous improvement” behavioural factor. The seventh behavioural factor was a requirement to coordinate with other ecosystem members to solve problems requiring the active intervention of more than one supplier. The final behavioural factor encouraged development of consistent approaches in order to standardise norms of service delivery across the ecosystem. This involved information sharing, discussion of outcomes and joint evolution of a standardisation process.

Behaviour #1: Always work in the best interest of the organisation
Behaviour #2: Be open
Behaviour #3: Solve first and settle later
Behaviour #4: Provide advance notice of issues
Behaviour #5: Reduce risk and understand impact on others
Behaviour #6: Champion continuous improvement
Behaviour #7: Coordinate activities
Behaviour #8: Develop consistent approaches

Fig. 2: Eight identified behaviours for the collaborative partnership sourcing

4.4 Phase 4: Measurement of co-creation activities through the FM service scorecard

The members of the FM ecosystem met every three months to conduct a “temperature check” using a 0 – 100 scale. This involved representatives of the 14 strategic suppliers, plus the HCC, FM leadership team, subjectively assessing the impact of eight behaviours on three dimensions, viz. engagement, collaboration and cooperation, and innovation as explained below:

- (a) *Engagement*: which began with the question, “*are we connecting and ensuring that all our staff feel part of something worthwhile?*”
- (b) *Collaboration*: which centred on the question, “*are we bringing our environment (ecosystem) to life with strong collaboration and cooperation?*”
- (c) *Innovation*: which focused on the question, “*are we driving value and benefit through innovation and efficiency?*”

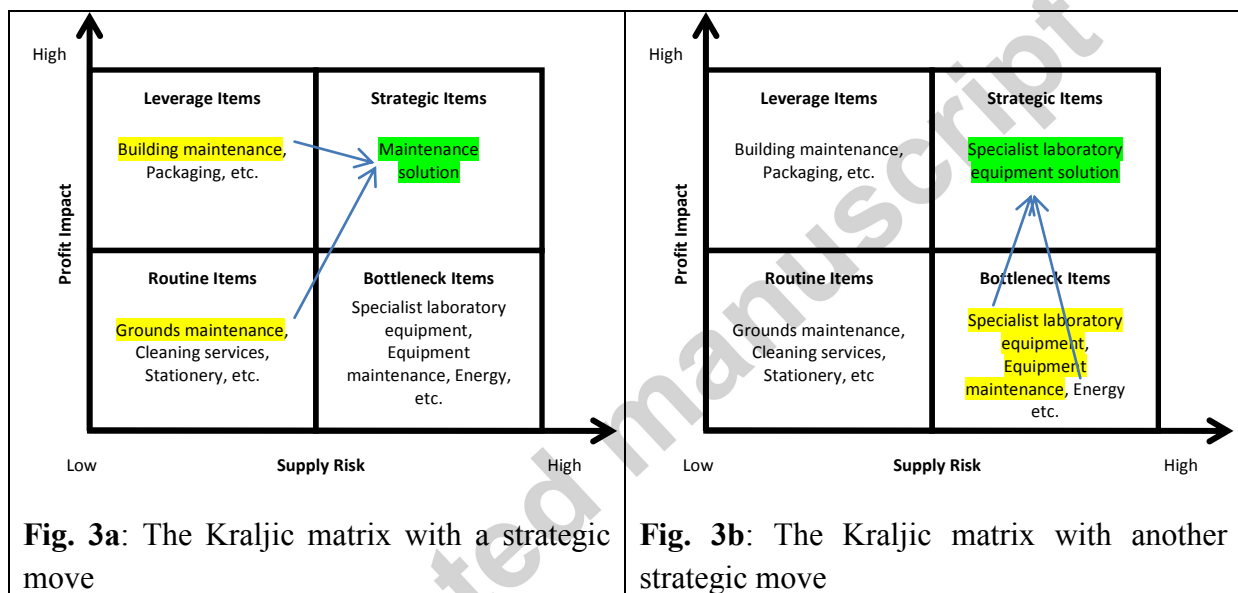
The ecosystem members discussed a cross-comparison of ideas and experience in other customer organisations, and shared examples of recent practice within HCC. The scoring process involved all ecosystem members to record their perception of the ecosystem’s current position on each of the three dimensions, utilising a nominal rating from 0 to 100. The reasons for the score were discussed and the trend of the score from period to period was analysed in subsequent quarterly meetings.

The outcomes of the programme contributed directly to the FM service scorecard created by HCC (amended version of balanced scorecard, Kaplan and Norton (1992; 1994). The scorecard comprised of four categories of objectives: customer satisfaction (customer perspective), employee satisfaction (learning and growth perspective), continuous improvement (internal processes perspective), and financial targets (financial perspective). The programme contributed to the scorecard as follows:

- Customer satisfaction: improved levels of internal customer satisfaction were recorded as a direct result of the enhanced FM service provision
- Employee satisfaction: the programme produced beneficial impacts on the active engagement of the whole FM community and enhances total FM capability
- Continuous improvement: HCC demonstrated that a new operating model for FM service provision had driven significant service innovation that had a beneficial impact on the profitability

- Financial targets: the new operating model facilitated more effective use of non-core assets and reduced expenditure on non-core assets and process by £20 million within one year.

Any gaps in the performance and their related actions were fed back to the appropriate suppliers for their future improvements within the consensus decision-making, collaborative and cooperative environment. As a result of the strategic collaboration with suppliers in the FM ecosystem, it resulted in innovative solutions. The building maintenance suppliers took the overall responsibility of delivering maintenance service solution by collaborating with grounds maintenance supplier as demonstrated in Fig. 3a. Similarly, specialist equipment supplier who had two different contracts, one for delivering equipment and the other for delivering equipment maintenance, now bundled them into one complete solution contract as demonstrated in Fig. 3b.



5. Discussion on Outcomes of Multi-Stakeholder Collaborative Value Co-Creation

It was found that a command-and-control mindset was reinforced by the fact that the ratio of employed, retained staff as opposed to vendor contracted staff was extremely high, and appeared to foster a kind of administrative culture that stifled innovation. As one member of the facilities management team admitted later:

“We were good at directing our suppliers, telling them what to do. But we were not interested in listening to them. We had no idea of the potential of the innovative input by vendors.”

In other words, it was time to reinvent FM’s approach to vendor relationships and to reboot the sourcing model. It is clear from the evidence presented in the action case study that the sole intention of a collaborative partnership in strategic sourcing is to facilitate collective action through stakeholder mediation in order to maximise the opportunities arising from the strategic initiative, thereby providing a momentum to the process of value co-creation.. The

findings of this case-based action research vindicate and qualify the approach to creating value through collaborative decision-making between suppliers, multi-stakeholders and the firm itself. The findings strongly indicate that multi-stakeholders' preferences have a great influence on the strategic sourcing decision, and at the same time, introducing a degree of risk and uncertainty into the decision. However, the mediating process inherent in the FM ecosystem programme mitigated some of the associated risks and uncertainty (Kim et al. 2007). The findings provide support for the basic premise that the collaborative mediating decision-making approach can co-create value by engaging and evaluating strategic suppliers through a number of operations management practices such as Kaizen, improvement programmes, collaborative decision-making, collaborative solutions, etc.

The benefits of the strategic supplier evaluation programme through a multi-stakeholder collaborative procurement evaluation and value-creation approach are observed within the context of the requirements of its various stakeholders, viz. HCC (internal customers), procurement and FM operations, finance, HR, and suppliers (i.e., external stakeholders).

(i) Internal customers: This stakeholder required a reliable cost-effective service with less focus on contractual relationships and more focus on a seamless provision of service from multi-supplier sources. They began to experience a service provision that not only met their requirements but also actively sought to identify improvement opportunities.

An example of this benefit when a supplier took the responsibility for managing the office stationery replenishment service and created a more efficient process for doing so. The new process enabled HCC staff (internal customers) to place orders for office consumables and now received the items ordered delivered by the supplier directly to their work stations. This saved staff a trip to a central replenishment point, which previously involved time spent in a queue. This is a seemingly simple service solution, but one that significantly increased internal customer satisfaction and fed directly into the employee satisfaction sector of the FM scorecard.

(ii) Procurement and FM Operations: This stakeholder had a shared goal of making life easier in terms of refocusing managerial effort from vendor supervision to service value enhancement; a goal largely achieved. The collaborative FM ecosystem programme generated over 400 useable innovation ideas, many of which were put into practice.

Suppliers were constantly engaging with the stakeholders of HCC and other suppliers in the ecosystem to deliver solutions and improvements in the delivery of services. For example, a building maintenance service provider took the responsibility for facilitating a group of suppliers (of cleaning services and grounds maintenance), on behalf of HCC, for providing a strategic bundle of services that provided greater value in terms of cost and in the provision of a multi-stakeholder and multi-supplier collaboration to innovate within a particular service system (e.g. site maintenance).

(iii) Finance: This stakeholder wished to reduce expenditure on non-core asset streams. The supplier innovation programme enabled HCC to reduce expenditure by £20 million in one year, including £10 million of headcount via transfer of FM staff to vendors and £10 million of supplier costs generated through service process innovations.

Two examples of this benefit are elucidated. One of the benefits was incremental while the other innovative. A cleaning supplier identified that a number of washrooms in one building were rarely used. With the agreement of the FM team the supplier reduced the cleaning schedule from a three-hourly cycle to a once-daily cycle, thus saving several thousand Euros per week. Another example is the onsite capability pooling by suppliers of their unused capacity, which was particularly useful when one supplier experienced a labour dispute and faced a potential shortfall which might have resulted in service under-provision to HCC. Other onsite vendors were able to step in to fill the capacity deficit without penalty to the effected vendor and thus preventing HCC incurring additional costs.

(iv) HR: HR wished to transfer staff to external service providers within an agreed timescale, and develop an effective change programme for the FM organisation. As a result of this project, the majority of FM staff on the HCC payroll were transferred to strategic supplier stakeholders in the FM ecosystem within the planned time and budget.

(v) Suppliers: The external stakeholders (i.e. strategic suppliers) wished to continue to do business with HCC by participating in the programme. Fourteen selected strategic suppliers participated successfully and, as a result, gained a larger share of the FM category purchasing spend and established a degree of client lock-in advantages. These lock-in advantages included: keeping out new 'cheaper' competitors through deepening long-term relationships with the FM management team; evolving mutual dependencies between vendors in the ecosystem resulting in network efficiencies; reduced network (and supply costs) for ecosystem members and for HCC; deep understanding of HCC needs, resulting in vendor ability to anticipate unstated needs and innovate system improvements.

6. Conclusions

This case based action research developed and assessed potentially strategic suppliers based on the mediating collaborative partnership among the suppliers, HCC and its internal stakeholders. This process aids in selecting the strategic suppliers by identifying the key behavioural metrics and mediating those through FM ecosystem platform. It was observed that value co-creation through collaboration and partnership capabilities in the multi-stakeholder sourcing decision-making process is significantly different from those generated from conventionally isolated value creation system. The research also assessed value creation and co-creation elements of the strategic suppliers, their collaboration and partnership with HCC by exploring the key operational capability indicators (behavioural indicators) and company's business and operational performance. The focus was on the value co-creation process between the strategic suppliers and HCC to gain new competence in collaborative partnership between the suppliers and firm. This provided competitive advantage and evidence of a real-world case on value co-creation process by establishing a strategic

sourcing decision-making through a multi-stakeholder collaborative approach. A number of specific goals of HCC and its multi-stakeholders were evolved into key governing decision metrics for evaluating the strategic suppliers. The decision metrics demonstrated how the firm should collaborate and cooperate with its suppliers to primarily unlock innovation from the supply base thereby improving and reducing service risk.

This study has contributed to knowledge in three different ways. Firstly it developed a process for mediating multi-stakeholder collaborative relationships within a value co-creation context. Secondly it has developed a value co-creation ecosystem, a platform for transitioning from a command-and-control of suppliers culture to the development of an open culture of collaboration between internal and external stakeholders for unlocking supplier innovation. As demonstrated in Fig. 4, the network of ecosystem stakeholders becomes the critical vehicle for making the collaborative strategic decisions for un-locking innovation that lead to value co-creation.. The role of the firm in mediating multiple stakeholders through collaboration lays a foundation for normative theories of multi-stakeholder multi-sourcing strategic decision-making (Dey et al. 2014; Scott et al. 2013). Thirdly, it developed a measurement framework (based on the balanced scorecard) for evaluating supplier performance beyond contractual compliance.

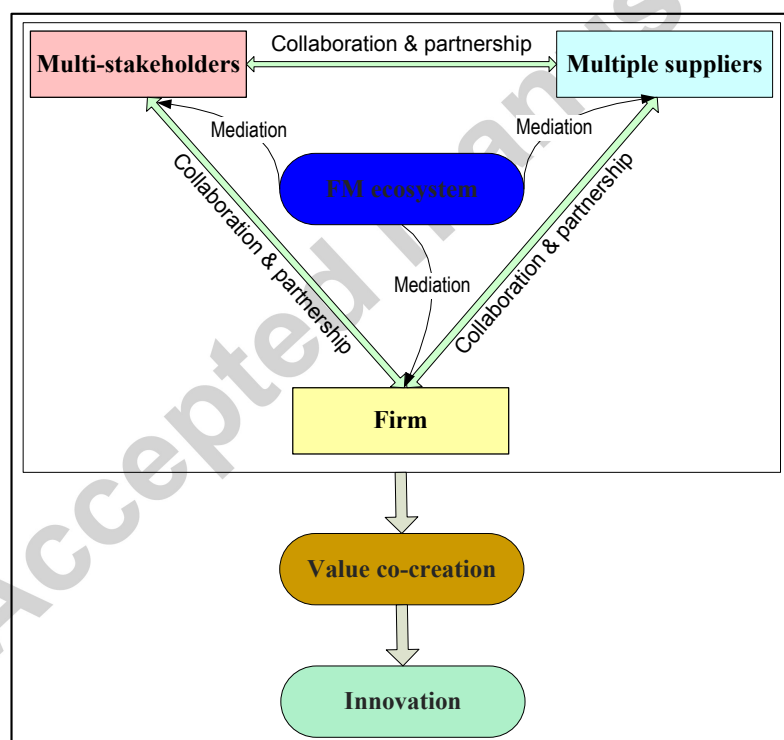


Fig. 4: The process of collaboration, partnership, mediation and value co-creation in the strategic multi-stakeholder and multi-sourcing decision-making

Although value co-creation has received a lot of attention from academia, its application in multi-stakeholder collaboration perspective is still under-researched. This study has made a contribution by providing empirical evidence of the process of value co-creation with multiple suppliers in a service context.. This study is a rare example of the application of

action research to generate empirical evidence of a firm's journey mediating multiple stakeholders via an ecosystem to co-create value (Ng et al 2010). Unlike traditional models and processes which measure suppliers' performance using positivistic approaches, within the HCC ecosystem model supplier performance is evaluated through subjective behavioural metrics using a pragmatic approach. The study echoes the call for a shift in approach to performance measurement of collaborative activity that is beginning to emerge in contemporary literature (Micheli and Mari, 2014; Nudurupati, 2014.,

A number of researchers have argued as an under-researched topic that innovation in services has (Tung and Yuan 2008; Tether and Howell 2007; Bessant and Davies 2007; Howells 2004). This study has contributed in addressing this knowledge gap by providing empirical evidence that firms could co-create value with its multiple suppliers for delivering innovative customer-centric service experiences in situations services often compete with many traditional functions for strategic resources (Ng et al 2010). This action case has demonstrated and captured how a firm could identify hidden customer needs and meet cost-effectively through them radical innovations.

6.1 Limitations and future directions

The arguments and findings of this research draw attention to a number of specific goals that need to be considered before embarking on the strategy of multi-sourcing decision. Caution is required before interpreting the findings as a mandate to examine the portfolio decision-making methodology using the Krajlic matrix. A multidisciplinary team is involved from HCC (the internal customer), operations, procurement, finance, HR and suppliers (Table 1) with specific goals that evolved into eight decision criteria for evaluating the 14 strategic suppliers. The rationale behind these decision criteria is to elucidate how the firm collaborates and cooperates with its suppliers to primarily unlock innovation from their supply base. This innovation is to improve and reduce service risk but also continue to drive jointly agreed, contractual, cost reductions within the business as revenues also declined. Although this study explored eight contextual behaviours to promote value co-creation, this is still restricted to a single organisation. Hence further studies are required in identifying behaviours (to support generalisability) thus promoting value co-creation and un-locking innovation within the context of supplier-purchaser collaboration in other organisations and sectors.

The future scope of research may include the investigation of "*capital structure decisions*" (Banerjee et al. 2008), and the stakeholder-driven losses in the mediating collaborative strategic sourcing decision-making. The future research may explore the scope of the economic and statistical significance of value co-creation in multi-stakeholder relationships through the mediation of a collaborative decision-making environment. In such a mediation of purchasing decision-making, the stakeholder relationships may be associated with some inherent volatility of sales or risk (Banerjee et al. 2008) and further analytical research in this arena may be worthwhile. Further work using case-based action research may provide more findings to draw together and strengthen a number of findings through the use of quantitative

tools and techniques to examine the causal relationships among the key strategic decision criteria.

Acknowledgement:

The authors sincerely convey their thanks to the three anonymous reviewers and the Asian-Pacific Editor, Professor Edwin Cheng, for their constructive comments.

References:

- Ackermann, F. and Eden, C., 2011. Strategic management of stakeholders: theory and practice. *Long Range Planning*, 44(3), 179-196.
- Ahuja, G., 2000. Collaboration networks, structural holes, and innovation: A longitudinal study. *Administrative Science Quarterly*, 45(3), 425-455.
- Armstrong, J.S. and Brodie, R.J., 1994. Effects of portfolio planning methods on decision making: Experimental results. *International Journal of Research in Marketing*, 11(1), 73-84.
- Baines, T., Lightfoot, H. and Smart, P., 2011. Servitization within manufacturing: exploring the provision of advanced services and their impact on vertical integration. *Journal of Manufacturing Technology Management*, 22(7), 947-954.
- Ballantyne, D. and Varey, R.J., 2006. Creating value-in-use through marketing interaction: the exchange logic of relating, communicating and knowing. *Marketing Theory*, 6(3), 335-348.
- Banerjee, S., Dasgupta, S. and Kim, Y., 2008. Buyer-supplier relationships and the stakeholder theory of capital structure. *The Journal of Finance*, 63(5), 2507-2552.
- Bapna, R., Barua, A., Mani, D. and Mehra, A. 2010. Cooperation, coordination, and governance in multisourcing: an agenda for analytical and empirical research. *Information Systems Research*, 21(4), 785-795.
- Bastl, M., Johnson, M., Lightfoot, H., Evans, S., 2012. Buyer-supplier relationships in a servitized environment: an examination with Cannon and Perreault's framework. *International Journal of Operations & Production Management*, 32(6), 650 - 675
- Bessant, J. and Davies, A., 2007. Managing service innovation. *Innovation in Services*, DTI Occasional Paper 9, 61-96.
- Bettencourt, L.A., Ostrom, A.L., Brown, S.W., Roundtree, R.I., 2002. Client co-production in knowledge-intensive business services. *California Management Review*, 44(4), 100-128

- Bhattacharya, A., Mohapatra, P., Kumar, V., Dey, P.K., Brady, M., Tiwari, M.K. and Nudurupati, S.S., 2014. Green supply chain performance measurement using fuzzy ANP-based balanced scorecard: a collaborative decision-making approach. *Production Planning & Control: The Management of Operations*, 25(8), 698-714.
- Bhattacharya, A., Geraghty, J. and Young, P., 2010. Supplier selection paradigm: an integrated hierarchical QFD methodology under multiple-criteria environment. *Applied Soft Computing*, 10(4), 1013–1027.
- Blome, C., Schoenherr, T. and Eckstein, D., 2014. The impact of knowledge transfer and complexity on supply chain flexibility: a knowledge-based view. *International Journal of Production Economics*, 147, Part B, 307–316.
- de Boer, L., Labro, E., Morlacchi, P., 2001. A review of methods supporting supplier selection. *European Journal of Purchasing & Supply Management*, 7(2), 75–89.
- Caridi, M., Moretto, A., Perego, A. and Tumino, A., 2014. The benefits of supply chain visibility: A value assessment model. *International Journal of Production Economics*, 151, 1–19.
- Clement, R.W., 2005. The lessons from stakeholder theory for U.S. business leaders. *Business Horizons*, 48(3), 255–264.
- Coghlan D. and Brannick, T., 2001. *Doing action research in your own organization*. London: Sage Publications.
- von Corswant, F. and Tunälv, C., 2002. Coordinating customers and proactive suppliers: A case study of supplier collaboration in product development. *Journal of Engineering and Technology Management*, 19(3–4), 249–261.
- Coughlan P. and Coghlan D., 2002. Action research: action research for operations management. *International Journal of Operations and Production Management*, 22(2), 220-240.
- Cova, B. and Salle, R., 1991. Buying behaviour in European and American industry: Contrasts. *European Management Journal* 9(4), 433-436.
- Dey, P.K., Bhattacharya, A. and Ho, W., 2014. Strategic supplier performance evaluation: A case-based action research of a UK manufacturing organisation. *International Journal of Production Economics*, DOI: <http://dx.doi.org/10.1016/j.ijpe.2014.09.021>
- Dubois, A. and Pedersen, A.-C., 2002. Why relationships do not fit into purchasing portfolio models—a comparison between the portfolio and industrial network approaches. *European Journal of Purchasing & Supply Management*, 8(1), 35–42.

- Ellram, L.M., 1995. A Managerial Guideline for the Development and Implementation of Purchasing Partnerships. *International Journal of Purchasing and Materials Management*, 31(1), 9–16.
- Eggert, A., Ulaga, W. and Schultz, F., 2006. Value creation in the relationship life cycle: a quasi-longitudinal analysis. *Industrial Marketing Management*, 35(1), 20–27
- Ferreira, L.M.D.F., Arantes, A. and Kharlamov, A.A., 2014. Development of a purchasing portfolio model for the construction industry: an empirical study. *Production Planning & Control: The Management of Operations*, DOI: <http://dx.doi.org/10.1080/09537287.2014.906679>
- Francis, M., Fisher, R., Thomas, A. and Rowlands, H., 2014. The meaning of ‘value’ in purchasing, logistics and operations management. *International Journal of Production Research*, 52(22), 6576-6589.
- Freeman, R.E., Wicks, A.C. and Parmar, B., 2004. Stakeholder theory and “the corporate objective revisited”. *Organization Science*, 15(3), 364–369.
- Freeman, R. E., 1994. The politics of stakeholder theory. *Business Ethics Quarterly*, 4(4) 409–421.
- Firouzabadi, S.M.A.K., Henson, B. and Barnes, C., 2008. A multiple stakeholders’ approach to strategic selection decisions. *Computers & Industrial Engineering*, 54(4), 851–865.
- Frow, P. and Payne, A., 2011. A stakeholder perspective of the value proposition concept. *European Journal of Marketing*, 45(1/2), 223 – 240.
- Gelderman, C.J. and Van Weele, A.J., 2003, Handling measurement issues and strategic directions in Kraljic's purchasing portfolio model. *Journal of Purchasing and Supply Management*, 9(5–6), 207–216.
- Geng, Y., Xinbei, W., Qinghua, Z. and Hengxin, Z., 2010. Regional initiatives on promoting cleaner production in China: a case of Liaoning. *Journal of Cleaner Production*, 18(15), 1502–1508.
- Genovese, A., Koh, S.C.L. and Acquaye, A., 2013. Energy efficiency retrofitting services supply chains: Evidence about stakeholders and configurations from the Yorkshire and Humber region case. *International Journal of Production Economics*, 144(1), 20–43.
- Gill J. and Johnson P., 1991. *Research Methods for Managers*. London: Paul Chapman Publishing Ltd.
- Goebel, P., Reuter, C., Pibernik, R. and Sichtmann, C., 2012. The influence of ethical culture on supplier selection in the context of sustainable sourcing. *International Journal of Production Economics*, 140(1), 7–17.

- Gosling, J., Purvis, L. and Naim, M.M., 2010. Supply chain flexibility as a determinant of supplier selection. *International Journal of Production Economics*, 128(1), 11–21.
- Grimm, J.H., Hofstetter, J.S. and Sarkis, J., 2014. Critical factors for sub-supplier management: A sustainable food supply chains perspective. *International Journal of Production Economics*, 152, 159–173.
- Grönroos, C., 2004. The relationship marketing process: communication, interaction, dialogue, value. *Journal of Business & Industrial Marketing*, 19(2), 99 - 113.
- de Haan, J., de Groot, G., Loo, E. and Ypenburg, M., 2003. Flows of goods or supply chains; lessons from the natural rubber industry in Kerala, India. *International Journal of Production Economics*, 81–82, 185–194.
- He, Y., Lai, K.K., Sun, H. and Chen, Y., 2014. The impact of supplier integration on customer integration and new product performance: the mediating role of manufacturing flexibility under trust theory. *International Journal of Production Economics*, 147, Part B, 260–270.
- Ho, W., Dey, P.K. and Lockström, M., 2011. Strategic sourcing: a combined QFD and AHP approach in manufacturing. *Supply Chain Management: An International Journal*, 16(6), 446 - 461.
- Howells, J., 2004. Innovation, consumption and services: encapsulation and the combinatorial role of services. *The Services Industries Journal*, 24, 19-36.
- Johnstone, S., Dainty, A. and Wilkinson, A., 2009. Integrating products and services through life: an aerospace experience. *International Journal of Operations & Production Management*, 29(5), 520 - 538.
- Kaplan, R. S., & Norton, D. P., 1992. The balanced scorecard—measures that drive performance. *Harvard Business Review*.
- Kaplan, R. S., & Norton, D. P., 1996. *Translating strategy into action: The balanced scorecard*. Boston: Harvard Business School Press.
- Kamath, R.R. and Liker, J.K., 1994. A second look at Japanese product development. *Harvard business review*, 72(6), 154-170.
- Kim, S. H., Cohen, M. A. and Netessine, S., 2007. Performance Contracting in After-Sales Service Supply Chains. *Management Science*, 53(12), 1843-1858.

- Knight, L., Tu, Y.-H. and Preston, J., 2014. Integrating skills profiling and purchasing portfolio management: An opportunity for building purchasing capability. *International Journal of Production Economics*, 147, Part B, 271–283.
- Kochan, T.A. and Rubinstein, S.A., 2000. Toward a stakeholder theory of the firm: the Saturn partnership. *Organization Science*, 11(4), 367-386.
- Kodikara, P.N., Perera, B.J.C. and Kularathna, M.D.U.P., 2010. Stakeholder preference elicitation and modelling in multi-criteria decision analysis – A case study on urban water supply. *European Journal of Operational Research*, 206(1), 209–220.
- Kraljic, P., 1983. Purchasing must become supply management. *Harvard Business Review*, 61(5), 109-117.
- Krapfel, R.E., Salmond, D. and Spekman, R.E., 1991. A Strategic Approach to Managing Buyer-Seller Relationships. *European Journal of Marketing* 25(9), 22-37.
- Krause, D.R., 1997. Supplier development: current practices and outcomes. *International Journal of Purchasing and Materials Management*, 33(1), 12–19.
- Lewis, J., 1995. *The Connected Corporation*. New York: Free Press.
- Liu, A.H., Leach, M.P. and Bernhardt, K.L., 2005. Examining customer value perceptions of organizational buyers when sourcing from multiple vendors. *Journal of Business Research*, 58(5), 559–568.
- Lock, D., 1998. *The Gower Handbook of Management*. 4th Ed. England: Gower Publishing Limited.
- Macbeth, D.K. and Ferguson, N., 1994. *Partnership Sourcing: an Integrated Supply Chain Approach*. London: Pitman.
- Micheli, P. and Mari, L., 2014. The theory and practice of performance measurement. *Management Accounting Research*, 25, 147–156.
- Möller, K.E.K. and Törrönen, P., 2003. Business suppliers' value creation potential: a capability-based analysis. *Industrial Marketing Management*, 32(2), 109–118.
- Mumford E., 2001. Advice for an action researcher. *Information Technology & People*, 14(1), 12-27.
- Nellore, R. and Söderquist, K., 2000. Portfolio approaches to procurement: analysing the missing link to specifications. *Long Range Planning*, 33(2), 245–267.

- Ng, I. and Nudurupati, S.S., 2010. Outcome-based service contracts in the defence industry mitigating the challenges. *Journal of Service Management*, 21(5), 656-674.
- Ng I., Nudurupati S. S. and Tasker P., 2010. Value co-creation in the Delivery of Outcome-based Contracts for Business-to-Business Service. working paper, AIM discussion paper series
- Ng I., Nudurupati S. S. and Williams J., 2011. Redefining Organizational Capability for Value Co-creation in Complex Engineering Service Systems by Ng, I.C.L., Wild, P., Parry, G., MacFarlane, D. & Tasker, P. (Eds.) in *Complex Engineering Service Systems: Concepts & Research*, by Springer Publishers.
- Nudurupati, S. S., 2014. Contemporary performance measurement and management in digital economies. Grant final report, *New Economic Models in the Digital Economy Funding*, Research Councils UK.
- Olsen, R.F. and Ellram, L.M., 1997. A portfolio approach to supplier relationships. *Industrial Marketing Management*, 26(2), 101–113.
- Osiro, L., Lima-Junior, F.R. and Carpinetti, L.C.R., 2014. A fuzzy logic approach to supplier evaluation for development. *International Journal of Production Economics*, 153, 95–112.
- Padhi, S.S., Wagner, S.M. and Aggarwal, V., 2012. Positioning of commodities using the Kraljic Portfolio Matrix. *Journal of Purchasing and Supply Management*, 18(1), 1–8.
- Pagell, M., Wu, Z.H. and Wasserman, M.E., 2010. Thinking differently about purchasing portfolios: an assessment of sustainable sourcing. *Journal of Supply Chain Management*, 46(1), 57–73.
- Payne, A.F., Storbacka, K. and Frow, P., 2008. Managing the co-creation of value. *Journal of the Academy of Marketing Science*, 36(1), 83–96.
- Pearson, J.N. and Gritzmacher, K.J., 1990. Integrating purchasing into strategic management. *Long Range Planning*, 23(3), 91–99.
- Reuter, C., Goebel, P. and Foerstl, K., 2012. The impact of stakeholder orientation on sustainability and cost prevalence in supplier selection decisions. *Journal of Purchasing and Supply Management*, 18(4), 270–281.
- Riordan P., 1995. The philosophy of action science. *Journal of Management Psychology*, 10(6), 6-13.
- Roden, S. and Lawson, B., 2014. Developing social capital in buyer–supplier relationships: The contingent effect of relationship-specific adaptations. *International Journal of Production Economics*, 151, 89–99.

- Roloff, J., 2008. Learning from multi-stakeholder networks: Issue-focussed stakeholder management. *Journal of Business Ethics*, 82(1), 233-250.
- Romero, D. and Molina, A., 2011. Collaborative networked organisations and customer communities: Value co-creation and co-innovation in the networking era. *Production Planning & Control: The Management of Operations*, 22(5/6), 447–472.
- Scott, J.A., Ho, W. and Dey, P.K., 2013. Strategic sourcing in the UK bioenergy industry. *International Journal of Production Economics*, 146(2), 478–490.
- Spekman, R.E., 1988. Strategic supplier selection: understanding long-term buyer relationships. *Business Horizons*, 31(4), 75–81.
- Spring, M. and Araujo, L., 2009. Service, services and products: rethinking operations strategy. *International Journal of Operations & Production Management*, 29(5), 444 - 467.
- Tether, B. and Howells, J., 2007. Changing understanding of innovation in services. *Innovation in Services*, DTI Occasional Paper 9, 21-60.
- Tuli, K.R., Kohli, A.K. and Bharadwaj, S.G., 2007. Rethinking Customer Solutions: From Product Bundles to Relational Processes. *Journal of Marketing*, 71(3), 1-17.
- Tumbull, P.W., 1990. A Review of Portfolio Planning Models for Industrial Marketing and Purchasing Management. *European Journal of Marketing* 24(3), 7-22.
- Tung, W.F. and Yuan, S.T., 2008. A service design framework for value co-production: insight from mutualism perspective. *Kybernetes*, 37(2), 226-240.
- Ulaga, W., 2003. Capturing value creation in business relationships: a customer perspective. *Industrial Marketing Management*, 32(8), 677–693.
- Vargo, S.L., 2011. Market systems, stakeholders and value propositions: toward a service-dominant logic-based theory of the market. *European Journal of Marketing*, 45(1-2), 217-222.
- Vargo, S.L. and Lusch, R.F., 2008. Service-dominant logic: continuing the evolution. *Journal of the Academy of Marketing Science*, 36(1), 1-10.
- Vargo, S.L. and Lusch, R.F., 2004. Evolving to a new dominant logic for marketing. *Journal of Marketing*, 68(1), 1-17.

Walter, A., Ritter, T. and Gemünden, H.G., 2001. Value creation in buyer–seller relationships: theoretical considerations and empirical results from a supplier's perspective. *Industrial Marketing Management*, 30(4), 365–377.

Zhang, J. and Zhang, M., 2011. Supplier selection and purchase problem with fixed cost and constrained order quantities under stochastic demand. *International Journal of Production Economics*, 129(1), 1–7.

Highlights

- Anecdotal evidence from global healthcare company on strategic multi-sourcing decision
- Lays a foundation for normative theories of strategic multi-stakeholder multi-sourcing
- Mediating multi-stakeholder collaborative decision-making and value co-creation approach
- Sourcing via multi-stakeholder collaborative value co-creation decision-making process
- Prescribes specific goals on multi-sourcing decision using multi-stakeholders

Accepted manuscript