Strategic Supply Management:
Best Practices and Applications for the University of British Columbia

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EXECUTIVE SUMMARY

Institutions that have implemented strategic supply management reforms have experienced material cost savings. This report was written for The University of British Columbia (UBC) with the objective of providing recommendations for strategic supply management reform at UBC. UBC context and applicability is provided through an in-depth background section and interviews of key UBC stakeholders. The literature and case studies reviewed best practices and practical applications for strategic supply management and demonstrate the potential financial impact that strategic supply management can have on organizations. The research findings, discussion and recommendations focus on organizational structure and decision making themes.

Background

UBC lacks a cohesive supply management strategy. Despite various reforms over the past five years, supply management at UBC remains fragmented, transactional and process driven. In 2009, UBC had a material operating deficit which resulted in the establishment of an economic sustainability task force charged with identifying and implementing cost saving opportunities. Supply management was identified as an area with cost savings opportunities through the implementation of more strategic institution-wide supply management agreements. In 2010, UBC entered into an institution-wide agreement for its document management strategy. Execution and implementation has been difficult and future evaluation is required to determine success.

Methodology

Research was conducted using qualitative methods and the design included a literature review, case studies and UBC stakeholder interviews. Potential weaknesses in the methodology include researcher bias which was mitigated through a review of various academic sources. Stakeholder interviews with key subject matter experts were conducted to obtain additional business intelligence and applicability of findings to UBC's environment.

Literature Review

The literature review identified key best practices, which include:
- executive sponsorship through reporting relationships
- a hybrid organizational structure
- cross-functional decision making governance models
- simplified and relevant regulations and policies
- strategic sourcing techniques
- central management of key commodities

Public and private sector differences were noted and centred primarily on the objectives of these two sectors, with the private sector being driven largely by profits and the public sector largely driven by process.

Case Studies

The University of Missouri, IBM and the State of California case studies were reviewed. Procurement reform in each of the three case studies entailed the application or identification of the best practices noted in the literature review. In addition, the case studies included reforms to ensure common and simplified procurement tools and processes. Material cost savings, improved efficiency and increased customer service were achieved with the alignment of supply management and overarching institutional objectives. With respect to cost savings, reported in US dollars, the University of Missouri reported annual savings in excess of $20 million, IBM was able to recover from bankruptcy and the State of California projected annual savings in excess of $200 million.

Interviews

Key UBC stakeholder interviews enabled a cross functional perspective and support to the current state perspective of supply management at UBC. A standard questionnaire was provided and general themes became readily apparent in interview responses. The majority of respondents had comparable definitions of strategic supply management. They shared similar views on the organizational structure and public and private sector impacts on procurement. Certain key success factors and principles critical to UBC also emerged. The majority of respondents felt that UBC should adopt a hybrid organizational structure but differed with respect to how this hybrid model could actually be structured. The interview process allowed for open-ended discussion which resulted in findings on end-user needs, barriers to implementation, communication, culture and vendor relations.

Discussion

The primary findings indicate that a hybrid organizational structure is optimal in order to leverage the benefits of decentralization and centralization. The success of this structure depends largely on clearly defined roles and responsibilities. Regulations, policies and procedures can negatively impact decision making, timeliness and vendor relations. The prominence of supply management in the organizational hierarchy seems correlated to strategic supply management success. Strong and effective governance is critical to strategic decision making and impacts communication and transparency. Commodity categorization models were found to be the most effective tools at aligning institutional and procurement objectives through the deployment of strategic sourcing techniques.

Recommendations

- Formalize and leverage the benefits of the existing hybrid organizational structure by defining centralized and decentralized roles and responsibilities with the objectives of strengthening accountability and aligning existing resources towards a common and shared procurement strategy.
- Integrate existing central and decentralized purchasing resources to improve compliance, transparency, communication and succession planning.
- Increase the prominence of supply management in the organizational structure of the Vancouver campus which has the most material cost savings and efficiency opportunities.
- Streamline and improve existing procurement processes to improve efficiency, increase customer service, and allow central supply management to focus on strategic procurement.
- Review policies and regulations to ensure that the existing framework is not inadvertently preventing the most efficient and effective procurement strategies from being deployed.
- Establish a more effective governance model for decision making with the objective of focusing and aligning institutional and procurement objectives through cross functional participation.
- Identify key commodities for strategic sourcing to maximize economies of scale and other identified institutional objectives by allowing the institution to strategically focus procurement in areas which provide the most value.

Conclusion

In 2009 UBC identified supply management as an area with cost savings and efficiency opportunities. The objective of this report is to provide UBC with recommendations that enable a more strategic supply management landscape and practice at UBC. Research findings and best practices indicate that reforms to organizational structure and decision making were essential in achieving more strategic supply management. Interview findings of key UBC stakeholders provide a cross functional perspective and specific context with which to integrate best practices into specific and applicable recommendations for UBC. The implementation of these recommendations has the potential to overcome existing barriers in UBC's supply management landscape. In addition they would formally align institutional, supply management and end-user objectives through organizational and decision making structures and practices to optimize cost-effectiveness and strategic supply management outcomes at UBC.

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1. INTRODUCTION

A report from McKinsey (Husted & Reinecke, 2009) indicates that improvements to supply management in the public sector have the potential to yield savings averaging 28% of purchasing budgets.The primary objective of this report is to provide the University of British Columbia (UBC) with recommendations that can be applied towards the establishment of more strategic, efficient and cost effective supply management. The research findings, discussion and recommendations centre around two main themes, organizational structure and decision making. The project analyzes best practices, strategies, and principles for instituting or reforming supply management strategies. The project focuses on applicability to UBC, and draws from the private and public sectors and the higher educational industry.

The deliverable is in the form of a report which:

- Presents UBC's current state and identifies existing barriers inhibiting supply management reform;
- Identifies best practices through a literature review;
- Reviews case studies for evidence of best practice and other practical applications;
- Presents interview findings of key UBC stakeholders;
- Discusses the research findings in order to derive common themes and critical success factors that could be applicable to UBC recommendations;
- Includes recommendations for a reformation and establishment of strategic, efficient and cost effective supply management at UBC.

Following this section, the report consists of eight sections, structured as follows, Section two provides general background information on UBC, UBC's supply management environment and detail on a specific institution-wide supply management strategy that UBC has recently adopted. Section Three provides the methodology used in this report. Section four focuses on key best practices found in the literature review, while section five presents successful practices and applications as observed in case studies. Section six presents and summarizes interview findings of key stakeholders in UBC's supply management environment. Section seven summarizes and discusses the themes and parallels of the research findings. The final section makes recommendations to UBC based on the findings of the literature review, case studies and key stakeholder interviews with the objective of achieving more strategic supply management at UBC.

2. BACKGROUND

2.1 UBC Context

UBC has been providing undergraduate, graduate and adult learning education through teaching and research since its inception in 1915. As of 2010 UBC is ranked 35th in the world and is one of Canada's primary research universities with more than 43,000 students on two campuses in Vancouver and Kelowna, two satellite locations, and a distributed medical program in institutions and hospitals throughout the province. UBC contributes approximately $10 billion to the BC economy and generates approximately 40,000 jobs. Like many post secondary institutions in North America, UBC is facing increased pressure to improve efficiency, reduce costs and seek additional opportunities for revenue and funding. In 2010, the university had an annual operating deficit of approximately $20 million. As a result, the Executive identified strategic initiatives through an economic sustainability task force with the ultimate objective of eliminating the annual operating deficit while bringing UBC closer to its objectives set out in its strategic plan. One of the strategic initiatives identified was that of administrative savings, with a focus on strategic supply management execution in order to optimize savings, improve operational efficiency and leverage strategic external partnerships.

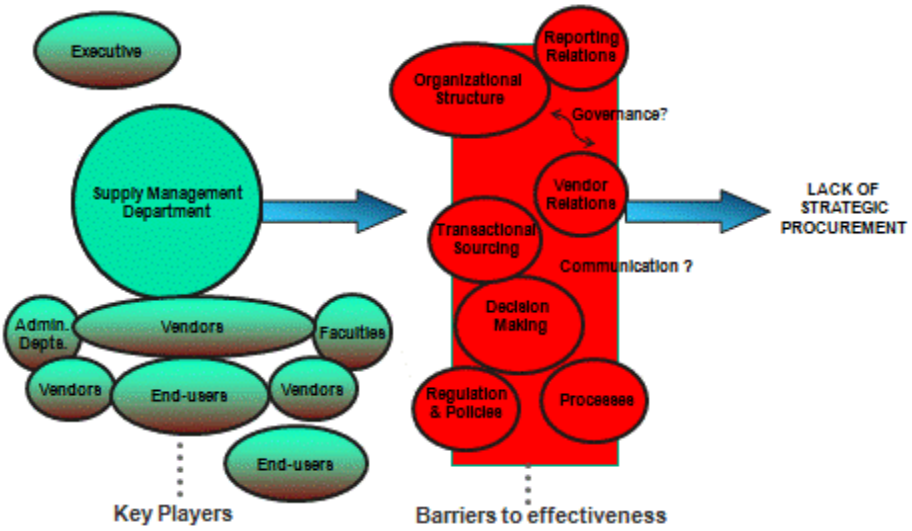
2.2 UBC Supply Management Context

UBC is a decentralized institution with a high degree of academic and administrative freedom. Procurement of annual goods and services (commodities) exceeds $280 million. In the past, institution-wide agreements with major vendors such as Coca Cola and Telus have not been successful. As of 2011, procurement activities are not being carried out strategically, efficiently or effectively. Procurement is transaction-based by virtue of the decentralized structure and administrative freedoms and fails to leverage economies of scale despite the fact that common suppliers are utilized by many departments and faculties. According to the economic sustainability task force, the implementation of a more cohesive execution of supply management strategies has the potential to save the university five to ten million dollars per year. This is modest in comparison to the application of the McKinsey Report findings (Husted and Reinecke, 2009) which indicate a savings potential of 28% or $78 million.

The illustration in Figure 1 attempts to visually depict the players as well as the barriers inherent in the existing supply management landscape at UBC. The existing barriers have a direct impact on effective governance and communication as it relates to supply management strategy. The figure illustrates that the central Supply Management Department (SM) is not interconnected with the faculties and administrative departments that they are intended to serve. In addition, vendor relationships that are created at the faculty and department level

tend to be stronger than those created by the SM. Executives can influence decision making but there is no solid accountability or governance model that links executive sponsorship to supply management decision making. Although the SM reports into the Vice President Finance Resources and Operations (VPFRO), the decentralized structure at UBC requires more than one executive sponsor for effective governance and decision making. The barriers or inhibiting factors are presented in red circles with overall governance and communication being impacted as a result of these barriers. The magnitude and multitude of barriers result in an inability to implement supply management strategically at UBC.

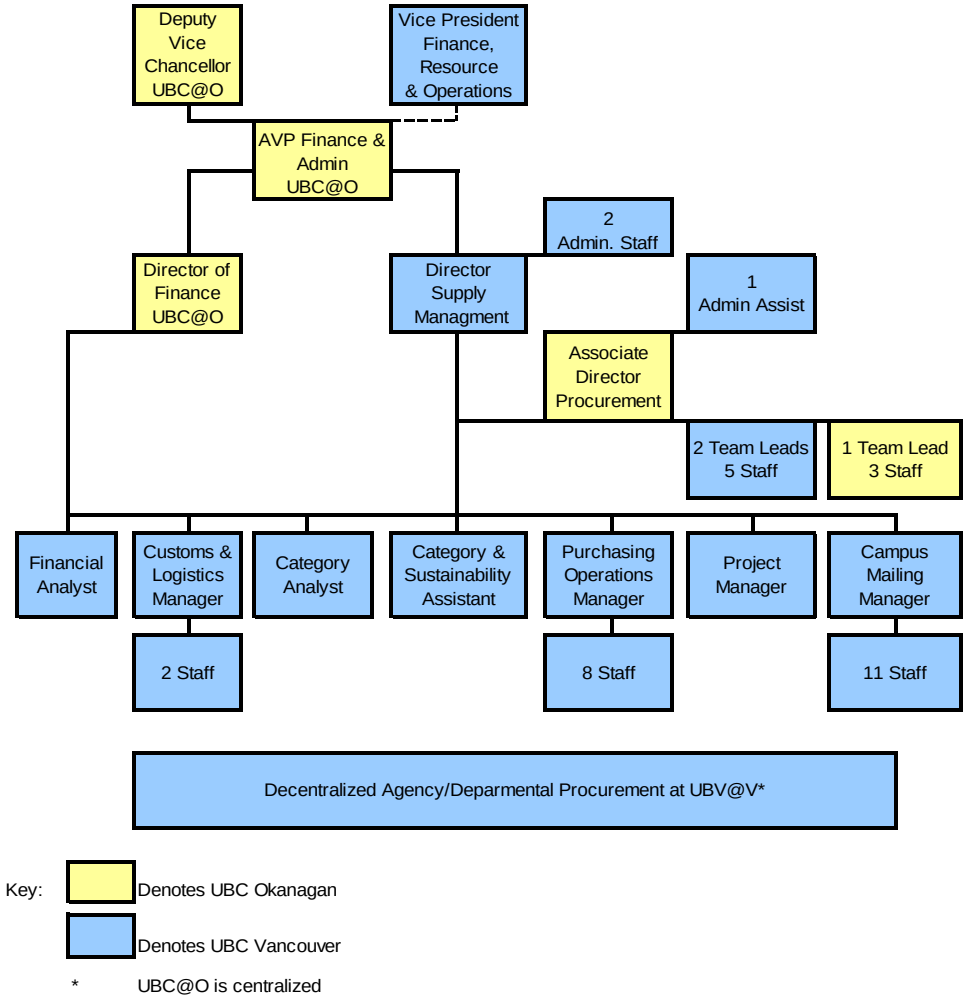
Figure 1: UBC Supply Management Landscape



The organizational structure of the SM has undergone numerous changes in the last five years. Prior to 2007, the Director of SM reported directly to the Vice President Finance at UBC Vancouver (UBC@V). An organizational structure change in 2007 resulted in a shifting of the leadership hierarchy which positioned the Director of SM three levels below the Vice President Finance. In 2009, a new VPFRO joined UBC and further re-organized the leadership portfolio. The Supply Management Director's reporting line moved one level up to an Associate Vice President, but replaced the UBC@V reporting line with one to the Kelowna campus (UBC@O). The UBC@O campus is geographically separated from UBC@V and represents only 5% of the overall system wide procurement budget. The organizational structure within the SM is not flat, resulting in additional hierarchical layering for end-users to navigate through. This complex organizational structure is further complicated by the fact that the Associate Director of Procurement, reporting into the Director of Supply Management, resides at UBC@O and primarily services this campus despite having a system

wide mandate. This leaves the Director of Supply Management relatively isolated at UBC@V, which is the campus with the largest opportunity to improve efficiency, effectiveness and reduce costs because of the volume of procurement and number of related transactions. In addition to the SM, other procurement staff are scattered within faculties and departments and have no reporting line or integration into SM. The organizational chart in Figure 2 delineates the reporting relationships of the SM.

Figure 2: Supply Management Organizational Chart



Although supply management is a system-wide function across both campuses, the positions are primarily responsible for procurement in the geographical area where they reside. The boxes in yellow denote positions held at UBC@O, while those in blue denote positions held at UBC@V. The dotted reporting line between the AVP Finance at UBC@O and VPFRO at UBC@V indicates that the AVP Finance has a dual report with the primary reporting line to the Deputy Vice Chancellor and a secondary reporting line to the VPFRO. This chart also shows that there are no reporting lines between the decentralized purchasing positions and the central SM at the UBC@V campus.

Various leadership changes over the past five years have resulted in attempts to improve supply management at UBC. These include, but are not limited to:

- Aligning the purchasing offices at both the UBC@V and UBC@O campuses
- Assimilation of the PeopleSoft enterprise system, an integrated organizational structure and the alignment of common purchasing policies and procedures, across both campuses;
- Developing key performance indicators;
- Instituting a business process review forum and process;
- High level identification of key commodities for strategic sourcing opportunities;
- Organizational restructuring of the SM into various functional streams such as category management, operations, and processing.

Despite these changes, it remains difficult for the SM to be viewed or recognized for its valued contributions as a strategic partner within the UBC community.

2.3 Institution-wide Strategy: Document Management

In 2007, an attempt was made to focus supply management strategy and streamline procurement processes. Despite poor information technology systems tracking, the SM was able to identify sourcing categories or programs that warranted further review because of their potential impact on the institution and end-users in the areas of cost savings, efficiency improvements and sustainability. This process identified five key procurement areas: document management, travel, procurement cards, construction and procurement related to the Building Operations Department such as central stores, tool cribs and fleet vehicles.

Heavily decentralized decision making and a lack of executive alignment or support made it difficult for the SM to execute a strategic procurement strategy for the institution. The structure of the SM exacerbated the problem because it is not high in the organizational hierarchy and therefore not perceived to be a high priority. The new VPFRO leadership coupled with a financial crisis situation, whereby the institution was facing a material operating deficit, created a more supportive environment for cost reduction procurement strategies. Of the five identified areas, document management was selected as the first area of reform. This strategy was able to gain traction, not because of the SM's leadership or initiative, but because the VPFRO and the Senior Executive recognized and advocated the project's value and cost savings potential. Although changes to supply management have taken place under the leadership of a new Director of SM, no significant institution-wide strategies have materialized.

Document Management Strategy

The Document management strategy encompasses printing equipment, equipment support, print services, and graphic design. In 2009, UBC's document management practices were highly decentralized, with over 6,000 devices, dozens of vendors and service providers, and annual related procurement costs of approximately $17 million. This decentralized approach created fragmented and ineffective procurement strategies which did not allow for optimal pricing on enterprise wide volume or demand for services. In addition, the current mix of technologies and equipment did not allow for optimization of work processes, comprehensive or standardized support, supplies, or for a central repository and retrieval system for digital records.

In 2007, with the encouragement and support of the Senior Executive, the SM began collecting and disseminating information for an institution-wide document management strategy. In January of 2008 a request for proposal (RFP) was issued. The RFP was unique in that it provided UBC's vision and desired objective, but allowed vendors to explain how they would best achieve the vision. Key working groups and an executive steering committee were formed to evaluate vendors, increase transparency and ensure widespread and appropriate communication to end users. Led by the SM, the working groups comprised key users and functional leads while the executive steering committee consisted of key executive stakeholders including the Associate Vice President, Information Technology, Comptroller, President's Office, Deputy Provost, and other key members. The working groups and the Executive Steering Committee selected a vendor in the spring of 2009.

Prior to awarding the contract, the VPFRO suggested the implementation of a pilot with select departments and faculties. The objective of the pilot was to obtain end user buy-in prior to awarding the contract. Because UBC is heavily decentralized and does not mandate vendor agreements, the pilot was intended to help build end-user relationships, provide end-users with information for decision making and provide the vendor with business intelligence to assist in contract execution. The pilot took place over a four month period. However, the objectives of the vendor and the client were not clearly articulated and were not aligned. This misalignment caused future implementation issues and the pilot itself caused some unintended negative consequences with respect to work load and end user expectations.

After the pilot period, a contract negotiating team was developed. The negotiation team consisted of a lead negotiator (the researcher) from the Treasury Department, legal counsel, identified business owner, supply management, human resources and delegates from the working group and Executive Steering Committee. The negotiation team was not led by SM. The Chief Information Officer (CIO) was identified as the project business owner during the negotiation process and was an integral key team member throughout the negotiation

process. Key attributes and principles that guided the partnership agreement negotiations include: 1) mutually beneficial terms and conditions; 2) mutually agreed upon deliverables including volume targets and performance measures; 3) guaranteed cost savings which reside with the end-user; and 4) no target volume related penalties. These attributes were intentional features, established with the objective of assisting implementation and partnership success in a highly decentralized environment by making the agreement relatively risk free for the end-user. Traditionally, at UBC, institution-wide agreements had central benefits which were not transparent to the end user, resulting in mistrust of the central administration's objectives. The agreement obtained Executive and final Board approval on December 3, 2009. The SM is the contract owner and the CIO remains the business owner of the document management project. From both the end-user and vendor perspective, this dual-championing role has made it difficult to identify clear accountability and responsibility which has impacted implementation and issue resolution. Appendix 1 details additional and more specific findings that emerged from the stakeholder interviews as they relate to the document management strategy.

The contract has been in place for just over one year and implementation has been slow and laborious. To date 20 departments have signed on to the agreement and achieved actual annual savings of approximately $100,000.

2.4 Summary

UBC lacks a cohesive supply management strategy largely because of the overarching complex organizational structure and high degree of decentralized decision making. The SM has attempted various reforms over the past five years but has not been able to strategically reform or alter supply management strategy or practices at UBC. As a result, procurement at UBC tends to focus on transactions that will immediately meet end user requirements as opposed to strategically ensuring end-user requirements are met within a larger context that provides institution-wide benefits. Although decentralized units purchase from common suppliers, there is little coordination to leverage cross functional requirements and maximize volume purchase discounts, let alone consolidate like suppliers to optimize economies of scale. In the summer of 2009, the UBC economic sustainability task force identified specific and material procurement savings opportunities. However, few of the suggested strategies have been enacted with the exception of the document management strategy which was initiated in October 2007 and executed in December 2009. The success and longevity of this strategy is yet to be determined.

3. METHODOLOGY

The methodology was designed to answer three primary research questions: What are the best practices that enable strategic supply management outcomes? What practices have been implemented in the supply management reforms of organizations similar to UBC? What practices do UBC stakeholders feel have been successful or unsuccessful, based on their experiences? Research was conducted using qualitative methods and was designed using three primary approaches in achieving its deliverables literature review, case studies and stakeholder interviews.

3.1 Literature Review

A literature review was conducted with the objective of determining best practices, key concepts and supply management foundations in both the private and public sector. Both the public and private sectors were researched as UBC possesses qualities that are akin to both sectors, yet does not precisely fit either sector in so far as procurement is concerned. Best practices were identified for further discussion and possible incorporation into recommendations for supply management reform and practice development for UBC. A preliminary review of the literature provided context which was used to formulate the questionnaires used in key stakeholder interviews.

3.2 Case Studies

Case study analysis, through document and literature review, was used to research how organizations achieved supply management reforms. Case studies were used to evaluate any environmental differences between the private and public sector and to examine barriers to implementation of supply management strategies and changes. Seven case studies and examples were researched, but only three were selected based on potential applicability to UBC and consist of University of Missouri, State of California and IBM. Findings were interpreted with the objective of applying the case study experiences towards applicable recommendations for strategic supply management practices at UBC.

3.3 Interviews

Interviews were conducted to provide information and gain perspectives directly related to UBC. Interviewees were key stakeholders, representing both internal and external perspectives in UBC's supply management environment. Interviewees were selected based on experience or expertise in the area of supply management and represented supply management practitioners, key end-users of the SM's services and strategic vendors to UBC. Seventeen persons were interviewed, fourteen of which were internal UBC stakeholders and three of which were external to UBC. The interview questions are attached in Appendix 2.

Interviews were approximately 45-90 minutes in length and were conducted in person at a location designated by the key stakeholder, but typically took place in the researcher's office or that of the interviewee. Notes were taken during each interview, after which a transcript was generated and sent back to each interview participant for review to confirm that the interpretation of the interview was acceptable to each stakeholder. The interviews were analyzed and summarized based on recurring themes and ideas, differences in perspectives noted and unique findings which resulted from a more open-ended discussion permitted at the end of each interview. These findings are presented in the Interview Findings section of this report. Relevant findings were used for context as well as for incorporation into the discussion and recommendations.

3.4 Methodology Weaknesses

There are several weaknesses associated with the adopted methodology. Because of the vast number of relevant publications associated with this topic and the researcher's intimate knowledge of UBC, researcher bias may influence the literature reviews and case studies selected. To mitigate these risks a variety of academic sources and documents were researched to identify themes and practices that were paramount in the literature reviewed.

Furthermore, there are associated disadvantages of using information obtained through interviews because of the quality of the interviewees, the manner in which the researcher conducts the interviews and the structure of the interview questions. These weaknesses are mitigated by selecting interviewees that are deemed to have relevant expertise by peers and colleagues, by developing a standard questionnaire to help analyze findings based on a common set of questions, and by providing transcripts back to all interviews for review to ensure the response findings were appropriately interpreted.

4. LITERATURE REVIEW

The objective of the literature review is to identify best practices and associated principles in both the public and private sectors that could be applied towards the recommendations for strategic supply management at UBC. Research consisted primarily of literature on supply management from academic journals, business magazines, and books. Various sources were used to search for relevant academic literature and included JSTOR, University of Victoria On-line library, and Google scholar.

The literature review is divided into two main themes organization and decision making. The first theme focuses on the impact of organizational structure and reporting relationships on the ability to strategically execute supply management. The second theme looks at decision making by examining the impact of regulations and processes on the decision making process as well as identifying concepts and models that can be applied to improve supply management decision making such as strategic sourcing and commodity teams. Public and private sector differences were mentioned where differences were noted otherwise no distinction was made between findings in each sector.

4.1 Organization

Research on the organization of supply management focuses on three primary organizational structure models centralized, decentralized and hybrid. Although Johnson and Leenders (2004) describe other organizational structures such as centralized coordinator and area planner, these are still in evolution and have not been included in the scope of this report. In addition to the primary organizational models, the organizational environment also encompasses hierarchical reporting relationships as they pertain to supply management departments and functions. A major challenge, as identified by Reed, Bowman, and Knipper (2005), is that organizational changes are extremely difficult to implement in the public sector because of collective agreements, budget constraints and funding allocation issues. In comparison, the private sector has been far more successful at utilizing reorganizations to achieve innovation and reform in supply management functions and strategy.

Centralized and Decentralized Organizational Structure

The works of Crandall and Crandall (2009) and Johnson and Leenders (2004) demonstrate that there are six primary drivers that move decentralized institutions towards centralized strategic supply management practices. The first is recognition that consolidated purchased commodities represent a major portion of the total costs and therefore savings potential in any given organization with over 50% in most companies and upwards of 80-90% in distribution and

retailing companies. Second, profit performance can be improved through procurement that leverages economies of scale. Third, efficiency and internal customer service can be improved through the adoption of centralized technology and centralized processes. Fourth, centralized vendor selection and evaluation enables supply assurance is it relates to quality and stability of vendors. Fifth, the need for standardized and specialized procurement skills, knowledge and training, and lastly the enablement of centralized and coordinated responses to external vendor, political and social environments. McCue and Gerasimos (2001) indicate that although public sector procurement is generally perceived as being centralized, the purchasing process is actually highly decentralized. The centralized aspect lies in the implementation of central purchasing regulations, policy and guidelines. However, they indicate that while centralized policy has been a characteristic of public procurement, it centres on policies and guidelines that enable purchasing to be conducted in a decentralized manner.

The literature also indicates that highly centralized institutions are moving towards a decentralized model. According to Johnson and Leenders (2008) and Malone (2004), a comparison between centralized and decentralized structures, found decentralized structures to have superior service and lower costs because decision-making responsibility was closer to the end-user and fostered closer working relationships between suppliers and end-users. They found that a decentralized structure increases opportunities for end-users to manage total cost of ownership, enhance motivation and creativity, increase cross functional collaboration and accommodate flexibility and individualization. Korosec (2003) found that decentralized departments were given minimal restraints and maximum feasible authority to make procurement decisions. Associated findings indicated that procurement professionals better understood and aligned the strategic objectives of the unit they served with procurement strategy. Korosec points out that this environment facilitates cross functional teams, which include procurement professionals, to develop acquisition strategies which meet end-user requirements, measure vendor performance, proactively forecast and plan for future needs. According to Crandall and Crandall (2009) this inclusive and proactive approach fosters accountability, and enables procurement staff to spend more time providing value added services and delivering results. They indicate that the trend toward faster decision-making and employee empowerment is what is encouraging centralized firms to decentralize purchasing.

Despite the potential benefits of decentralization, Johnson and Leenders (2004) indicate that some level of centralization has been found essential to enable and support strategic initiatives of the organization. Malone (2004) reinforces the need for some form of centralization through a review of case studies whereby in all cases, once the supply management function was fully decentralized, the units saw no need to coordinate purchasing initiatives with other areas within the organization. He cautions that essential practices for successful supply

management in a decentralized environment are the continuous and transparent sharing of information to ensure continual alignment between objectives and goals. As a result of the visible opportunities prevalent in both the decentralized and centralized organizational structures, a proliferation of hybrid organizational structures is emerging within organizations to balance the advantages inherent in both structures while mitigating the shortfalls inherent in adopting one rigid organizational structure.

Hybrid Organizational Structure

The hybrid structure is the most prevalent organizational structure, but in most cases it has developed organically as opposed to strategically. According to Johnson and Leenders (2004), although hybrid models are emerging as the optimal organizational structure from the perspective of both academia and professional practice, there is much debate around the level of centralization and decentralization of key functions. Malone (2004) indicates that the ideal solution is the creation of a customized structure that combines and uses alternative structures for different types of decisions. A compilation of the findings in the work of Johnson and Leenders (2004), Reed et al. (2005), and Crandall and Crandall (2009) has been summarized in Table 1 to provide a framework for the classification of roles and responsibilities in a flexible hybrid organizational structure.

Table 1: Elements of Hybrid Model

Centralize	Decentralize
Regulations, policies and guidelines	Local problem solving
Business processes (standardization)	Local processing where complexity and volume is low
Tactical or routine procurement functions through Enterprise Resource Planning (ERP) systems, such as replenishment.	Low volume low value transactions
Procurement systems, procurement tools and all related information technology	Unique and niche items where expertise is at the local level (regardless of value).
Resources to establish a “centre of excellence” with sophisticated knowledge and expertise, with a formal organizational link the decentralized purchasing resources.	Specific high value low volume transactions (such as professional services, consulting and software development) where expertise and deliverables are unique to the end user.
Decision making for commodities with material advantages with respect to economies of scale; (for example high volume and high value transactions	

Centralize	Decentralize
and high volume low value, if aggregate value is material)	
Key commodities where few people are capable of making good business decisions because special skills are required for decision making	

Reporting Relationships

According to Johnson and Leenders (2004), the six key drivers identified above, which encourage more centralized supply management are the same drivers which have resulted in reporting relationship changes with the objective of featuring supply management more prominently and cohesively within the organizational structure. Johnson and Leenders (2008) indicate that a major inhibitor of a successful strategic supply management strategy is the mis-alignment between the overarching institutional strategy and the supply management function. They further indicate that the single largest contributing factor towards this mis-alignment is the placement of supply management within the institution's organizational structure. Their research (2008) has found that organizations that have appropriately aligned purchasing with corporate strategy have resulted in superior performance in the areas of procurement cost, quality, dependability, innovation and performance. Johnson and Leenders' (2008) research, (which is based upon the findings Carr and Smeltzer 1999, Johnson and Klassen 2005 and Mills, Schmitz and Frizelle 2004) indicates that positioning supply management higher in the hierarchical structure, enables innovation, the leveraging of supply management opportunities, adoption of new technologies and supply chain collaboration is the increased visibility.

Johnson and Leenders (2008) found that the hierarchical level of most procurement department heads is predominately concentrated at two or three levels below the chief executive officer in a given corporation. They indicate that these findings were corroborated by research conducted by Maister (1977), Bowersox and Daugherty (1987), Bowersox, Daugherty, Dro¨ge, Rogers and Wardlow (1989) and Bowersox, Daugherty, Dro¨ge, Germain and Rogers (1992). In addition, Johnson and Leenders (2008) found that it is typical for the head of procurement to report to a senior executive who is not an expert in supply management. The findings in various case studies conducted by Johnson and Leenders (2004) demonstrate that in every case, changes in the purchasing organizational structure were the result of overall corporate reorganizations as opposed to being driven strategically by supply management strategies and desired objectives. None of the cases reported an organizational change in supply management which was based on the optimal structure for more strategic and effective supply management.

A distinction between the public and private sector was noted in the research of Reed et al. (2005). In the private sector, reorganizations generally resulted in strategic sourcing teams with a direct line to upper management to enable more strategic supply management strategies. It was determined that this reporting structure would enable strategic visibility in the organization's structure, promote collaborative cross functional teams and increase executive level decision making support. In the public sector, they found that institutions undergoing strategic supply management reform changed their mandates and strategies but did not undergo significant reorganization in order to carry out this new mandate.

Slaight (1999) also found that vendor relationships are strongly influenced by organizational structure. He cautions that vendor relationships are less effective if reporting relationships in the institution are not in place which elevate and demonstrate the strategic importance of vendor relationships within the organization. He stipulates that organizational structures that inhibit the fostering of strong vendor relations generally result in failed or far less successful strategic sourcing strategies. According to Slaight (1999), strategic partnerships are challenging but critical to strategic sourcing success in the areas of cost reduction and innovation. He indicates that the "purchasing and supply organization must align with the strategic objectives of the larger organization" (Slaight, 1999, para. 15) which is enabled through reporting relationships and an organizational structure that positions the supply management team within a sphere of influence.

4.2 Decision Making

The objectives of this section are two-fold, to focus on factors that influence procurement decision making and to demonstrate the role of commodity teams which have been evidenced to dramatically improve decision making within both the public and private sector. The impact of regulations, policies and processes was found to be inhibitors of effective decision making in both sectors, while more constraints of this nature were found in public sector institutions. The creation of commodity teams, primarily in large decentralized environments were found to be a successful governance model for decision making in order to execute strategic sourcing.

Regulations and Process

Regulations surrounding procurement differed between the public and private sectors. Thai (2001) indicates that the major difference is that procurement regulation in the public sector has the ability to significantly impact the economy of businesses, municipalities, cities and regions because of their sheer magnitude. Thai (2001) describes four major regulatory factors that impact procurement in the public sector environment as follows:

- dictation of contract style and format;
- constrained democratic framework, under multiple branches of government or bureaucracy;
- social programs that promote dispersion of wealth by providing economic opportunities for specific groups, such as small businesses for example;
- multiple stakeholders and regulatory agencies with the ability to exert influence at the expense or irrespective of an optimal procurement solution

According to Reed et al. (2005), public sector procurement professionals use regulations to conduct business at the local or unit level, at the expense of leveraging institutional buying power because public regulations tend to be written to enable decentralized or unit level procurement. Thai (2001) demonstrates that the objectives and outcomes of the public and private sector differ, with the private sector focused on cost and profit while the public sector focused on adhering to regulations, regardless of the expense. Thai (2001) also finds that the private sector is driven primarily by profit which forces continuous innovation. He goes on to indicate, that although private firms abide by professional ethics and commercial codes because they are concerned with their image or reputation, profits remain the most influential factor when making purchasing decisions.

With respect to processes, Thai (2001) finds that complex and fragmented organizational structures inhibit processing efficiency. Complex organizational structures coupled with more traditional, process driven values in the public sector, result in large, routine, “lethargic, cautious, bloated, expensive, unresponsive, [bureaucracies] … incapable of accepting new challenges” (Savoie, 1995, p.114). Savoie (1995) indicates that New Public Management, which focuses on accountability by results, as opposed to the process accountability of traditional public administration, may help move the public sector toward a more results based environment. The public sector remains slow to adopt new public management philosophies and values which de-emphasize processes in favour of strengthening “government practices…to make institutions perform their duties in the most productive way” (Charih & Rouillard, 1998, p. 32). The research of both Reed et al. (2005) and Thai (2001) found that reforms to the regulatory, policy and process frameworks were required in the public sector to allow for effective strategic supply management practice.

Strategic Sourcing

Research, conducted by the Aberdeen Group (CPR, 2007) provides actual results of mid-sized and large North American, European and Asian companies that have adopted strategic sourcing. The CPR (2007) findings indicate that strategic sourcing approaches have reduced direct unit price costs by 5-20%, have improved time-to-market cycles by 20-30% and have reduced sourcing cycle times by 10-15%. Strategic sourcing can be described as “a rigorous, systematic process by which the organization analyzes its expenditures,

evaluates both internal and external influences, and determines the appropriate supplier relationships necessary to support overall organizational goals" (CPR, 2007, para. 3). The objective of strategic sourcing is to obtain a consolidated view of a commodity and to determine the total cost of that commodity before making procurement decisions based on price alone. Total costs are described as including life cycle, quality and any direct and indirect costs that may ensue as a result of a procurement decision. Slaight (1999) emphasizes, supplier analysis, as one of the most critical components to strategic sourcing success. He recommends the identification of suppliers that have established strong, medium or poor relationships with the organization. Those suppliers identified with strong relationships should be considered key candidates for strategic sourcing relationships.

Rendon (2005) indicates that commodity sourcing strategies require a distinct strategic planning process as described by Lasseter's (1998) seven step commodity planning process (as cited in Rendon 2005, 9-10), as follows:

Step1- Procurement analysis: A documented analysis of past expenditures and a projection or understanding of the organization's future purchases for supplies and services, segregated by users and suppliers.

Step 2 - Commodity strategy: A commodity strategy entails an examination of the supply industry to determine the major suppliers of the specific supply or service by market share and geographical region. The analysis should consider the various competition dynamics, which include customer power, supplier power, inter-company competition, threat of substitution, and new market entrants.

Step 3 - Performances drivers: Performance metrics should be determined to measure the success of the agreement and to drive behaviour which helps encourage the achievement of targeted metrics. Metrics to consider include of cost, performance quality, level of technology, flexibility, and timeliness.

Step 4 - Supplier analysis: An identification of the type of suppliers required that would be able to achieve end-user needs as identified in the performance metrics determined in Step 3. This is analysis is possible by gaining a clear understanding end user needs and a determination of the strengths, aptitude and roles of potential suppliers.

Step 5 - Business processes: The determination of business processes which require realignment in order to achieve improved integration with suppliers. This integration demonstrates commitment towards a lasting and cooperative vendor relationship and ultimately creates a competitive advantage in the market place.

Step 6 - Savings quantification: The quantification of measurable savings targets as a metric for measuring the progress of the strategy and to gain support of senior management in the importance and impact of the commodity strategy.

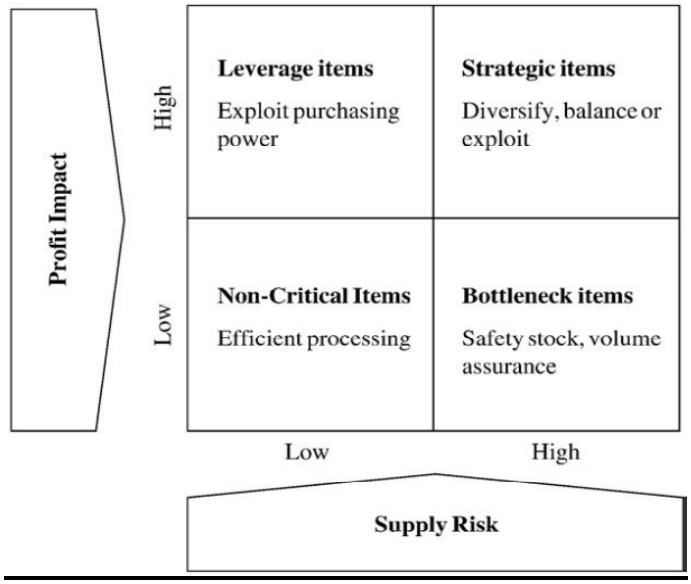
Step 7 - Plan and Implementation: Planning and implementation requires the translation of the strategy into an implementation plan. The plan should include a documented set of tasks, at the macro and micro level, which will result in the targeted savings and targeted performance metrics. The plan would also reflect activities, resources, and milestones for achieving stated targets.

Step one, the analysis of past and future projected procurement spending is the foundational starting point for strategic sourcing. Rendon (2005) found that a major challenge of implementing strategic sourcing in the public sector resulted from a lack of procurement data and difficulty projecting future procurement goals and needs. As such, the public sector finds it difficult to comprehensively complete

The following sub-section focuses on this first step in the strategic sourcing process, by elaborating on the use of categorization approaches or models to analyze supply management. The application of these models can be conducted at a high level, if detailed data is not available or reliable. Furthermore, Trautmann, Bals and Hartmann (2009) found that categorization models were especially critical in a hybrid organizational structure model whereby the identification of decentralized and centralized functions, commodity purchasing responsibility and accountability are critical to a successful and cohesive supply management strategy. Because most public sector supply management environments operate in a hybrid organizational structure, the use of categorization models is particularly important.

The objectives of portfolio models are to enable strategic recommendations for the maximization of savings and cost reductions. Trautmann et al. (2009) find that savings can be best achieved by leveraging and bundling critical commodities where value can be derived through a common procurement strategy. Similarly, they indicate that the identification of non-critical areas where central supply management need not focus is of equal strategic importance to ensure that resources are strategically re-deployed and non-critical areas are decentralized. Various commodity categorization models are provided in the literature and are primarily based on the Kraljic matrix, depicted in Figure 3. Commodities are categorized according to maximum leverage, non-critical, strategic and bottle neck, within a context of profit impact and supply risk. For example, areas of high profit impact and high supply risk are identified as strategic; while areas of low profit impact and low supply risk are deemed to be non-critical.

Figure 3: Kraljic's Categorization Matrix



(Trautmann et al., 2009, p.197)

Trautmann et al. (2009) and Rozemeijer (2000) have built upon Kraljic's model to develop complementary approaches in commodity categorization through the establishment of sub matrices depending on the institution's procurement objectives. These matrices are included in Appendix 4 for reference and illustrative purposes. In addition, Slaight (1999) found that Kraljic based matrices are not only used for commodity categorization, but are also the most common categorization models for supplier categorization. Similar to Slaight (1999), Trautmann et al. (2009) indicate that leading organizations that have implemented strategic sourcing have done so by categorizing procurement into areas of critical importance through the use of differing metrics for different levels of suppliers. These models categorize suppliers into four quadrants depending on the dollar amount and the criticality of the commodity with the most dollar value, most critical buys and the most complex suppliers ending up in the strategic quadrant. Overall, the use of these matrices can assist organizations to determine which commodities and which vendors are more strategic, requiring a centre-led strategy, and which are more effective decentralized.

Commodity Councils

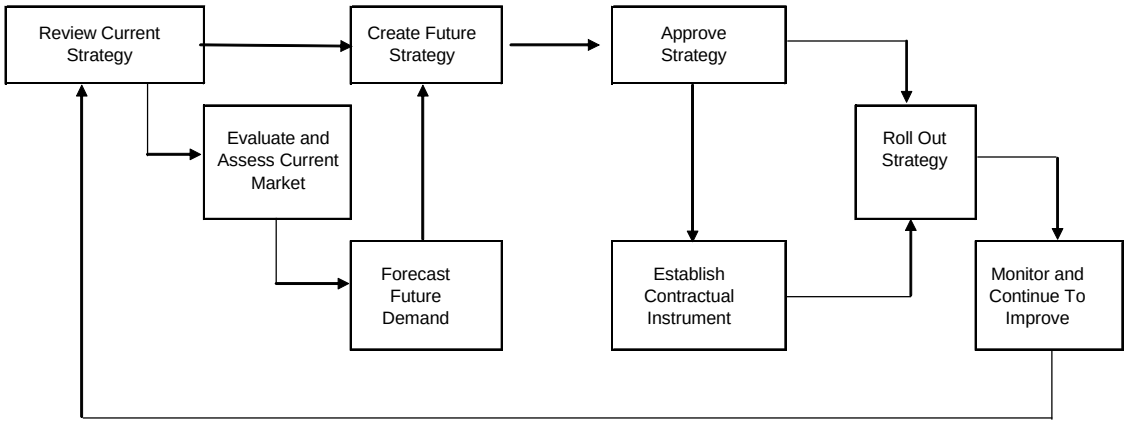
Reed et al. (2005) define a commodity council as a cross-functional sourcing team with the responsibility and accountability to formulate a centralized purchasing strategy and to establish centralized contracts for enterprise-wide requirements for a specifically selected commodity or commodity grouping. They indicate that the primary objective of commodity councils are to maximize cost-reduction opportunities by leveraging economies of scale through coordinated and combined buying power which enable volume discounts. They suggest that

commodity councils include market experts to formulate sourcing strategy and to establish strong and respected relationships with preferred suppliers that meet or exceed enterprise-wide requirements.

They further describe that commodity councils should identify critical commodities to be centrally managed and to develop a central strategy that would optimize value for the institution as a whole. However, once the strategy is developed the execution should be “implemented at the lowest level practical in the organization” (Reed et al., 2005, p. 272). Their research in the public sector, demonstrated that commodity councils enabled and facilitated a “transitioning from the traditional decentralized approach to a requirements generation process that includes a centralized strategy with decentralized execution” (Reed et al., 2005, p. 283). Figure 4 details the commodity team process which is summarized by Reid et al. (2005) through the following eight steps:

1. Obtain a solid understanding of how the commodity is currently sourced;
2. Assess current market conditions;
3. Forecast a demand and spend plan based on past and future indicators;
4. Document the strategy which includes the formulation of strategic and measurable targets;
5. Develop a communication plan and communicate the strategy to key stakeholders and users for approval;
6. Formulate contractual tools;
7. Execute the plan in accordance with the documented strategy; and
8. Monitor and measure its performance against the developed strategic targets

Figure 4: Commodity Team Process



(Reed et al., 2005, p. 274)

With respect to governance and enhancing the decision making framework, Reed et al. (2005) suggest that the entire commodity team process be managed by a cross-functional executive steering committee consisting of a senior

executive and commodity subject matter experts. The role of the senior executive is to champion the process and be accountable for any associated procurement, compliance and strategy on behalf of the organization in order for the benefits of the commodity team approach to be realized. In support of the champion, Reed et al. (2005) recommend the establishment of part-time and periodic working groups for each commodity team which is comprised of “buyers and other representatives within the organization that have a stake in the outcome of the acquisition strategy work with the executive steering committee to analyze the market environment, considering internal and external factors to make appropriate strategy recommendations” (p.273). Reed et al.’s (2005) research found that the commodity team approach enables large price discounts by leveraging institution-wide procurement agreements and cost savings through processing efficiencies. In addition, resources could be optimized by dramatically reducing the staffing support costs required to manage multiple vendor relationships and contracts. Standardization of equipment, technology and services was enabled through configuration simplification because of standardization achieved which lowers costs and increases productivity.

Commodity teams have been successfully used for decision making in the private sector, but some public agencies in the United States have also adopted the commodity team decision making approach, most notably the Department of Defense. However Reed et al. (2005) found that even with high level visibility, commodity councils in the public sector failed if the lines of authority and span of control were unclear because this inevitably led to the unwillingness of key functional stakeholders to participate in the commodity team.

4.3 Summary

The literature review identified overarching key best practices in both the public and private sectors, as follows: 1) ensuring sufficient executive sponsorship, and procurement authority through a hybrid organizational structure and reporting relationships; 2) establishing simplified and relevant regulations and policies through a re-examination of the existing legal framework; 3) implementing strategic sourcing techniques by aggressively identifying and managing key commodities; and 4) establishing cross-functional decision making teams through commodity teams or governance models. Public and private sector differences were noted. The private sector was found to be primarily driven by profit which forces innovation and change. In comparison public sector values encourage process driven over results driven objectives and faced greater regulatory barriers to implementing change. The public sector was found to be lacking in business intelligence because of its tendency to have highly decentralized procurement which impacts strategic planning through deficient and incomplete procurement data and understanding.

5. CASE STUDY FINDINGS

The objective of the case studies is to review supply management reforms that have been implemented in sectors that were applicable and relevant to UBC. Case studies were identified through a review of academic journals, business magazines and articles. Various sources were used to search for relevant academic literature and included JSTOR, University of Victoria On-line library, and Google scholar. American cases were studies and as such financial results and projections are in US dollars.

5.1 University of Missouri

Context and Approach

In 2000, the University of Missouri (U of M) commenced “a multi-level re-engineering of its system-wide procurement operations, transforming this critical service support function from independent, transaction oriented order shops into a unified and strategic supply chain management body” (Cooper, 2007, p. 2). The transformation was broken out into distinct phases which, as of 2007, resulted in savings of over $19 million dollars per annum**.** Cooper (2007) indicates that prior to the transformation process purchasing staff were focused on policy and regulation to the detriment of the academic, business and operational needs of the organization. Procurement policies were rigid and few alternative solutions were provided to the client to meet their supply and service needs. “As such, purchasing as an organization was at best viewed as a bureaucratic necessity that faculty and staff tried to maneuver around” (Cooper, 2007, p.4). The ideal outcome of the reform was to transform this view to one whereby supply management were recognized as a "highly valued partner in the University community” (Cooper, 2005, p. 4). The objective of the reforms were to create a structure and environment whereby supply management could become strategic; where policies and processes provided valued customer service; and where cost savings could be realized.

Cooper (2007) explains that a Procurement Review Committee (PRC) was established to evaluate supply management. The findings of the PRC were substantiated by an external and independent consultant. The PRC was charged with assessing the opportunity to reduce cost, streamline processes, improve systems and enhance customer service. PCR indicated that a decision making committee substructure be established to lead and implement operational changes and the e-procurement system. This substructure would be responsible for leading projects or initiatives, project plans, developing and pilot testing projects and implementation.

Organizational Re-structure and Strategic Sourcing

The PRC and consultant's reviews recommended an organizational restructuring. This restructuring included the elimination of services which did not have a perceived value to the university community. The PRC also provided recommendations with respect to the decision-making structure required to implement some its recommendations. The PRC (Cooper 2007) found that the most critical success factor of supply management strategy was user adoption. A re-structuring of the organization was recommended which consolidated all procurement activities under the leadership of a Chief Procurement Officer (CPO) with a reporting line into an Associate Vice president.

The restructuring also entailed additional resources for the hiring of strategic sourcing specialists; approximately $450 thousand per annum were expended for the CPO and Commodity Specialists. Contract specialists were to lead institution wide contracts for key commodities and would leverage the existing decentralized purchasing offices. The streamlining of activities of the purchasing department enabled the U of M to focus on high value transactions and customer service improvements which resulted in a net reduction of staff from 93 full time equivalents in 2000 to 46 in 2006 for an annual cost savings of approximately $700 thousand. Cooper (2007) estimated commodity cost savings through strategic sourcing to be between $11 million and $17 million. Price savings of $3 million were estimated to result from leveraging volume purchase agreements through the e-procurement system with a remaining 10-15% savings estimated on all remaining procurement classes.

Processes Improvements

Cooper (2007) indicates that the first phase of process improvements resulted in realized annual savings of $19 million. This was achieved through the streamlining of existing processes, such as the movement of accounts payable related duties from supply management to financial services and the elimination of central services which did not add value, such as all central stores and central receiving. According to Cooper (2007), the second phase of strategic procurement re-design, was the most critical and entailed the implementation of system-wide e-procurement. E-procurement was expected to improve customer service, user adoption and result in material cost savings through automation of manual processes. Cooper (2007) indicates that customer service was expected to improve by providing end-users with self-service options and ease of ordering from supplier catalogs at pre-negotiated discounted pricing. Direct and material cost savings were to be achieved through value added business intelligence for decision making, which would enable greater visibility of value and type of commodities procured, improved communications with suppliers, metrics and measurement tools for benchmarking and improved contract compliance. In addition, e-procurement was to leverage the benefits of their hybrid organizational structure by gaining centralized control and influence of the

purchasing process, while enabling decentralized procurement execution. Because the University had already invested in an enterprise system through PeopleSoft, the e-procurement system did not require substantial internal resources for ongoing maintenance. Cooper (2007) indicates that projected cost savings of the e-procurement phase are between $10 million to $17.9 million when fully deployed.

5.2 IBM: Commodity Teams

Context

The works of Rendon (2005) and Reed, et al. (2005) demonstrate how the use of commodity councils enabled IBM to achieve significant cost savings that prevented them from economic failure in the early 1990s. Reed et al. (2005) indicate that IBM, like many private sector firms experienced material cost reductions, increased productivity, improved quality and increased return on investment through the implementation of a commodity council process. With the implementation of commodity councils, IBM was able to “balance decentralized decision making with central strategy and common customer focus" (Malone, 2004, para. 6).

Organizational Structure

From an external perspective, IBM appears to be a unified corporate and centralized entity. Some procurement functions are truly centralized, such as procurement policies, practices, and business controls. However Di Carlo (2002) indicates, that prior to Lou Gerstner’s era as CEO in 1993, IBM was highly decentralized, whereby “its many parts were far-flung and operated independently, with little accountability. Rather than work together as a team, divisions competed against each other both internally and in the field” (Di Carlo, 2002, para. 12). According to Di Carlo (2002), and Rendon (2005), a transformational shift was required with respect to reporting relationships and the hierarchical structure of IBM’s supply management leaders to ensure strategic supply management execution and success.

Rendon (2005) describes that after the organizational restructure it became self-evident that supply management was deemed to be mission critical which is what enabled strategic supply management success. As part of its restructuring, IBM established six procurement executives at the Vice President level, in part, to demonstrate executive alignment, priority and support. The established decision making authority also helped ensure institutional and procurement objectives were in continuous alignment. Malone (2004) indicates that IBM required a stronger alignment and maintenance of decentralized responsibilities in order “obtain the benefits of smallness that it sorely needed—things like flexibility, speed, and entrepreneurial motivation” (para. 2). However he found that IBM

may have veered too strongly towards centralization at the expense of striking a critical balance between a central strategy and the decentralizing of functions.

Decision Making

Commodity councils and strategic sourcing were described in detail in the Commodity Council sub section of the Decision Making section of the literature review. As such, the IBM case study does not elaborate further on the commodity council or strategic sourcing process, other than to indicate that the framework and principles described in the literature were applied and implemented at IBM. According to Reed et al. (2005) the utilization of commodity councils at IBM saved the company a large (but unspecified) savings on a total procurement production base of $17 million.

Rendon (2005) describes IBM's implementation of strategic sourcing to include the centralization of its purchasing function and the creation of 17 commodity councils. IBM (2011) indicates that the Global Procurement Department purchases commodities through three major areas General Procurement, Systems Production Procurement and Technology Group Procurement. The nature and grouping of commodities in the General Procurement area is provided in Appendix 5 for illustrative purposes to demonstrate the manner in which commodities can be grouped for strategic sourcing purposes. The commodity councils combined the requirements of all of IBM's divisions and negotiated long-term contracts with suppliers. Computing software was immediately identified as an opportunity which could result in material savings to the organization.

According to Reid et al. (2005), the overall result was lower prices and a major reduction in IBM's supplier base, with further related cost savings. To illustrate the magnitude of change in the supplier base, IBM's production suppliers fell from approximately 4,900 to 50 suppliers after the implementation of commodity teams and strategic sourcing techniques. Reed, et al. (2005) provide statistics that demonstrate the impact of supply management reforms. These included an increase in IBM's outsourced components from 28% in 1986 to 51% in 1998, which realized pricing discounts between 5-10%. Although these discounts are below the industry average, they represented material cost savings to the organization. Reed, et al. (2005) stipulates that collaboration and knowledge transfer across organizational lines is critical and is what allows commodity council to be successful.

5.3 California: Procurement Reform

Context

The State of California procures over $10 billion annually on commodities. In 2007, the State commissioned a procurement review, whose findings and results formed the California Procurement Report (CPR). The CPR (2007) describes the acquisition process to include detailed identification of the business need,

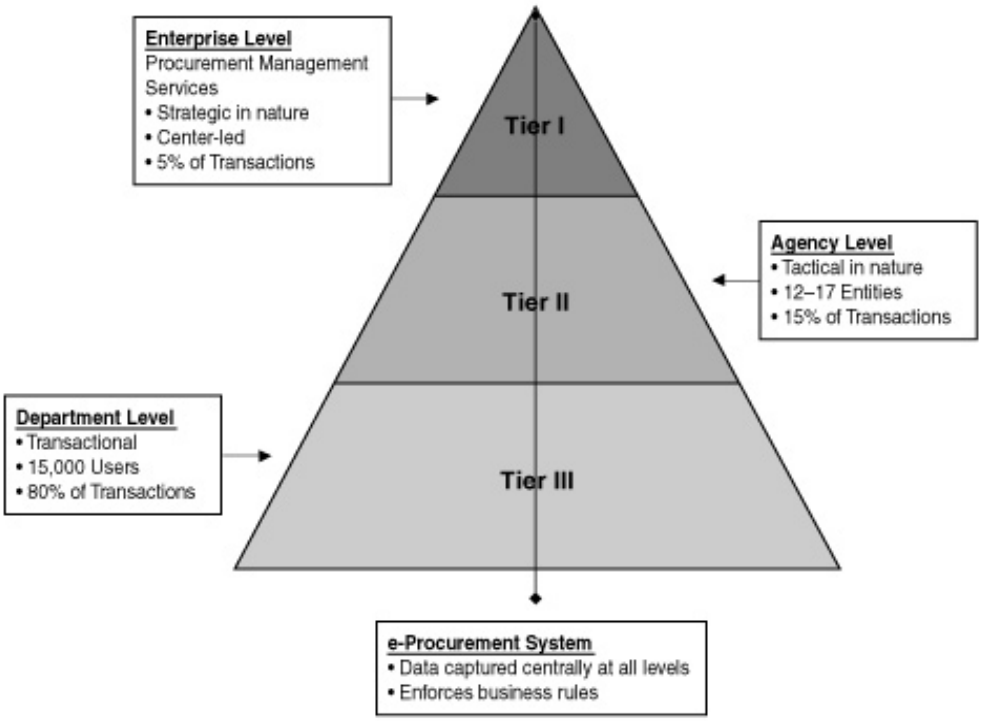
development of contract requirements, and efficient and effective procurement methodologies to ensure the state receives best value and timely availability of funding. Previous external and internal reviews of the state of California conducted prior the release of the CPR had also recommended acquisition reform and a complete overhaul of the procurement process.

Organizational Structure

California's procurement functions are characterized as being highly decentralized with a central focus on transactions, processing and control. The CPR (2007) recommended two fundamental changes to the organizational structure which it deemed essential in transforming procurement from an obstacle or inhibiting factor into a strategic player in the business management of the State. The first change required was to re-design the centralized organizational structure and responsibilities to provide central authority, provision of expertise and management of processes. The central authority would be accountable for the overarching simplification, streamlining and standardization of procurement processes as opposed to actually processing transactions. To this effect, the second major reform was the decentralization of routine process, where the centre offered little value-added functionality.

Figure 5 below from the CPR (2007) depicts the recommended hybrid organizational structure which is broken down into three key tiers. Tier 1 or the Strategic level is the establishment of a procurement unit at the Department of General Services level with staff that has procurement education and experience. This primary objective of this new unit is to provide professional services, leadership, knowledge and expertise to meet customer needs. The unit is to be a centre-led, strategic, customer centric that creates the lines of business, leverage buying and the tools to be utilized at the Tier 2 and Tier 3 level. CPR (2007) provides examples of key core competencies of this function, which include: consultants to departments, innovators, performance based contracting, vendor management, strategic sourcing, enterprise programs, policy and procedures, training, procurement card program, and legal counsel for procurement. Tier 2 is described as the Tactical Level. The second tier is comprised of procurement staff from the department procurement organizations that are consolidated into a shared services model to meet the business of each agency. Examples of core competencies functions at the Tier 2 level include: tactical procurement planning, subject matter experts, preparation of requests for proposals and invitations for bids, awarding contracts, and collaborating with departments to meet tactical needs. The Tier 3 or Operational Level consists of procurement staff with procurement activities at the operational level that are embedded in various programs. Procurement skill requirements at this level are basic and meet day-to-day requirements. Examples of core competencies include: transactional processing, placement of orders from established contracts, routine day-to-day procurement, and use of procurement card.

Figure 5: State of California Procurement Organization Structure



(CPR, 2007, SO6O: Exhibit 1)

The objectives of the proposed hybrid organizational structure are to centralize roles and responsibilities that retain control of complex, high risk, high-dollar transactions wherein trained experts add value. In this manner the centre is charged with developing innovative procurement vehicles that maximize buying power; systems automation and process streamlining, and facilitating life cycle procurement techniques. In addition, the Tier 1 function is responsible for the training of central professional procurement managers to act as consultants, instructors, business process designers and problem-solvers for the entire system. With respect to the decentralized functions, the CPR (2007) suggests the development of a shared services model which vests authority in decentralized agencies with the objective of increasing accountability, decreasing central involvement in individual procurement transactions, decreasing bureaucracy and enabling purchasing to occur as close to the end user as possible to improve purchasing decisions.

Decision Making

The CPR (2007) found that the procurement system wasted the time of users, suppliers, and procurement professionals with laws, policies and procedures that were not cohesive or conflicting. The regulatory, policy and process environment prevented procurement from being conducted efficiently or cost effectively. Table 2 below highlights is based on the CPR (2007) findings and recommendations

which demonstrate the impact of the regulatory environment on effective decision making.

Table 2: CPR Summary: Impact on Decision Making

Findings	Recommendations
Many regulations are no longer effective and/or are not enabling the original intent of the regulation	- Review regulations for relevance and complexity; Determine if the legislation results in the originally intended desired outcome based on an overarching state perspective
Regulations are complex, inconsistent and conflicting because they have been developed in a piecemeal manner	- Reorganize, simplify and streamline state statutes into a single, uniform and understandable code to eliminate unnecessary complexities
Regulations were developed with the ultimate objective of establishing and ensuring equity amongst suppliers	- Develop a performance based rating program to evaluate and screen vendors on product offerings, quality, service, financial viability, technical expertise and past performance

With respect to the last finding in the table as it relates to supplier equity, two issues emerged from the review. The CPR (2007) did not find evidence that the complex regulations established to achieve supplier equity actually resulted in equitable practices. In addition, the CPR (2007) found that the cost benefit of achieving actual or perceived levels of supplier equity, with respect to the infrastructure, administration and resources deployed to achieve this objective, had not been demonstrated. The CPR (2007) findings indicated that the excessive use of funds and resources deployed towards these objectives actually put interests of suppliers ahead of taxpayers' interests.

Procurement processes were characterized as fragmented, complex, and opaque. The CPR (2007) stresses the need to modernize procurement systems because of processing issues and their impact on decision making and cost effectiveness. The CPR (2007) found that savings in the range of 5% to 15% of total procurement spending could be achieved through the deployment of an e-procurement system solution. It was recognized that the current processes and system ineffectiveness is compounded by inadequate training provided to end-users to increase user competency on existing systems and processes. A few illustrative examples of the impacts of existing processing processes are described in the CPR (2007) as follows:

- Intricate information technology processes which result in systemic failures of acquisition practices primarily with respect to approval processes which cause lengthy, contract award timeframes that can exceed one year;
- A general lack of transparency, resulting in both real and perceived abuse and unfairness;
- Excessive bureaucracy which delays acquisition processes without adding value;
- Non competitive bid processes that interfere with programs and their ability to provide services to the state;
- Slow procurement payment processes resulting in approximately $5 million per annum in late payment fees and an inability to take advantage of prompt payment discounts offered by suppliers.

The CPR (2007) indicates that rather than streamlining receiving and accounts payable processes, the costs have been absorbed and passed on to the tax payer. The CPR (2007) strongly recommends the streamlining of invoice and paper payment processes through the implementation of an e-procurement and statewide accounting system.

Strategic sourcing

By comparing the actual results of other companies and organizations that implemented strategic sourcing, the CPR (2007) found that strategic sourcing could save the state of California at least $200 million dollars per year on an annual procurement base of approximately $10 billion. The CPR (2007) explains that the current environment inadvertently encourages suppliers to maximize short-term gains as opposed to investing in long-term and mutually beneficial business relationships because of the lack of strategic vendor partnerships and a mechanism of evaluating and strategically impacting vendor performance.

The CPR (2007) recommends the use of strategic sourcing categorization techniques to implement strategic sourcing of key commodities. A commodity immediately identified for strategic sourcing opportunities based on experience and business intelligence was computer software products. This was described as a quick-win strategic sourcing opportunity to materially reduce associated costs for all state entities and agencies. The opportunity entails the expanding site licensing/strategic sourcing opportunities for software, renegotiating existing software licensing programs; and by reducing limitations on the purchase of used software. In addition, the CPR (2007) recognized that further efficiencies and savings could be obtained by expanding the sourcing strategy beyond the state of California by cooperating with other states and the federal government.

Summary of CPR Recommendations

The CPR (2007) consisted of twenty one subsections on procurement reform. A high level summary of relevant recommendations are included below, as follows:

- Establish a central procurement unit at a level that replaces central responsibility and resources from a transaction role to a strategic sourcing mode, with central oversight with a greater emphasis on user enablement;
- Develop a shared service model for decentralized procurement resources to centralized locations within each department to further facilitate the efficiency of processing and training;
- Utilize progressive procurement strategies and tools to increase value by strategic sourcing and performance-based contracts;
- Redefine supplier relations and develop strategic vendor performance management mechanisms;
- Review and change statutes and regulations to facilitate a modern procurement system and enable the appropriate management of the state's acquisition of goods and services; adopt legislation to reform and streamline the protest process;
- Replace existing processes with streamlined and simplified processes; including the implementation of a single statewide e-procurement system to collect all state procurement and contracting information to enable and facilitate strategic sourcing.

5.4 Summary

Findings from three case studies show that procurement reform entailed changes to organizational structure, and decision making practices, which included changes to the legal and policy frameworks. In the case of U of M the supply management department was re-structured in order to provide visibility and executive sponsorship by creating a Chief Procurement Officer position. A formalized hybrid organizational structure was established by re-defining central and decentralized roles and responsibilities. Cross functional governance models were established through committee structures and commodity specialists were retained to lead strategic sourcing initiatives. Processes were centralized and streamlined through the implementation of an e-procurement system and duplication of processes was streamlined with the finance department. IBM's case study focused on the establishment of a more centralized organizational structure, by identifying key commodities for strategic sourcing and forming commodity councils to lead strategic sourcing initiatives. In addition, IBM recognized the importance of increasing the prominence of procurement within the organizational hierarchy and established executive level positions, through the creation of vice president positions for supply management. The State of California's case study identified reforms which focused primarily on organizational structure, regulatory and process reform and strategic sourcing through the identification of key commodities to be centrally and strategically sourced.

6. INTERVIEW FINDINGS

Key stakeholders are defined as subject matter experts comprising of practitioners, end-users or vendors involved in UBC's supply management. Key stakeholders were interviewed using the questionnaire provided in Appendix 2. Seventeen persons were interviewed, fourteen of which were internal UBC stakeholders and three of which were external to UBC. The responses were compiled, grouped and summarized under common themes, differences noted and unique findings. Overall responses to the questionnaire were in general consensus and common themes emerged with respect supply management perspectives. These responses are grouped under the Common Themes sub section.

There were instances where the interviewees expressed perspectives, experiences and ideas that differed significantly from the general consensus. If one or more of the interviewees expressed a difference of opinion in response to the standard questionnaire, the findings are summarized in the Difference Noted section. Unique findings represent discussions which were ancillary to the standard questionnaire and were the result of a more open-ended discussion that was permitted after the standard questionnaire was completed. Because the discussions were not prompted, the findings were unique to each particular interviewee. However in some cases, as noted in the Unique Findings section, several interviewees coincidentally discussed common themes and shared similar responses

6.1 Common Themes

The interviews findings demonstrated commonality in perspectives and experiences within seven of the thirteen interview questionnaire responses. Common themes have been summarized and grouped in the following eight areas: strategic supply management definition; decentralized and centralized environments, public and private sector environments; agreement types; general principles, strategic supply management failures and ideal structure for UBC.

Strategic Supply Management: Definition

In general all responses understood strategic supply management to imply the strategic acquisition and delivery of products and services that should be based on long term planning, in alignment with the organization's overall objectives. When elaborating on this question, responses included supply management to encompass standard procurement approaches, performance management through the active measuring of vendor and operational results and strategic vendor partnerships. All interviewees framed the objective of supply management as achieving the greatest value in the most cost effective manner to meet or exceed the supply management needs of an institution.

Decentralized and centralized environments

A centralized environment was found to enable economies of scale in a manner which is easier to execute and implement than a decentralized environment. However, in all cases interviewees noted that a centralized environment poses a greater failure-risk with respect to the ability to consistently meet end user requirements because the centre is not the end-user of the procured services. In all cases, interviewees felt that at UBC, specifically, there appears to be a tendency for end-users to avoid the Supply Management Department SM because they do not feel that their supply management needs are consistently met.

With respect to a decentralized environment, findings indicated that it was more difficult to achieve a cohesive strategy, resulting in more complex execution strategies. Responses indicated that in a decentralized environment, it generally takes longer to execute and implement procurement strategies because the decision requires time to obtain executive and end-user support. One of the key success factors noted in a decentralized environment, was the criticality of partner selection because of the need to select vendor partnerships with the ability to interface at all levels of the organization. As such, it was believed that procurement strategies require stronger and more scrutinized business cases in a decentralized environment than in a centralized environment to be successful. Benefits of a decentralized environment included ownership and accountability.

Overall responses indicated that a hybrid organizational structure which is adaptable and integrated would be best suited for UBC. The interviews indicated that a formalized hybrid structure would enable succession planning and career mapping, thereby enabling greater attraction and retention of procurement professionals.

Respondents described UBC's current state by indicating that despite the SM's attempts at being strategic, strategy in such a decentralized decision making environment seemed possible at UBC through a top-down approach with end-user and other bottom-up inputs. Respondents unanimously felt that ideas which were sponsored by the Executive had more momentum. Suggestions included changing the organizational structure of SM or the way in which decisions are made to ensure Executive alignment, visibility and support.

Public and private sector environments

With the exception of one interviewee, all felt that the public sector is driven by process rather than outcomes and results while the private sector ignores process and is concerned with outcomes and profitability. All responses indicated that UBC lies somewhere in mid-spectrum between the public and private sectors with respect to the balance between process and results but is impeded by other barriers. In addition, the resounding theme was that although UBC is

process driven, end-users generally found ways of working around these processes and the SM instead of working with them in order to meet their procurement needs.

Agreement Types

There was no strong opinion on agreement type, other than the fact that agreement types should be flexible and catered or dependent on the commodity type. Although specific agreement types were not mentioned, three high level principles emerged with respect to agreement characteristics: 1) should encourage use, rather than penalize non-use; 2) were to avoid exclusivity clauses; and 3) should ensure service and sustainability gains which are at least equal to financial gains. Although not all responses included each of these three principles, each response included at least one principle, six responses included two of these principles and three included all three principles.

General Principles

General principles emerged from the responses to two interview questions, numbers ten and twelve, provided in Appendix 2.These two questions allowed for a discussion on successful supply management agreements and an ideal framework for UBC. In three interview responses, principles were not discussed. Although not all responses included each of the principles listed below, each of the fourteen remaining responses included three or more of the following general principles for strategic supply management to be successful:

- Functioning and formal decision making or governance structure
- Hybrid organizational structure
- Strategic category management
- Vendor relationship and partnership strategies
- Communication and transparency
- Direct end-user benefits and incentives

Functioning and formal decision making or governance structure: Interviewees found that UBC lacks effective supply management governance. Because UBC is a complex multi-faceted and multi-stakeholder environment the lack of effective supply management governance was found to negatively impact supply management strategy and decision making. Interviewees indicated supply management was not strategic and attempts to be more strategic had failed. Although not all interviewees provided a solution to the governance issue, some indicated that the creation of a committee structure with key institutional stakeholders could be an approach to consider. A model which allows for broad end-user input prior to decision making was also cited as a key principle. The majority of interviewees found that any decision making model that formalizes and improves cross-functional participation, aligns cross functional objectives

with those of the institution and has decision making authority would be an improvement over the status quo.

Hybrid organizational structure: Interviewees acknowledged that UBC's existing organizational structure was in essence a hybrid structure. The challenge at UBC is that this structure did not develop strategically thereby creating inconsistent and unclear roles, responsibilities and accountability. For example, responsibility and accountability for strategic commodity planning, end-user requirements, implementation and operational execution vary considerably at UBC depending on the end-user in question. Overall, respondents were in accordance with a hybrid structure but differed slightly on the interpretation of this structure as described in Differences Noted section.

Strategic category management: this was defined similarly to strategic sourcing with respect to the selection and proactive management of key commodities based on institutional and end-user objectives. The ineffective governance structure was cited as the leading barrier in achieving strategic category management because of the inability to strategically align objectives cross functionally and at the institutional level.

Vendor relationship and partnership strategies: Interviewees that discussed vendor relationships found that UBC's vendor relations were stronger at the decentralized level than at the centre which made institution-wide vendor selection more difficult. These interviewees indicated that, in their experience, vendor relationships were a major key success factor. In such cases interviewees indicated that vendors that did not share the same values and objectives as UBC would likely not succeed. From an agreement perspective incentives and objectives should be contractually and mutually aligned in order to ensure vendors are treated as partners rather than as external service providers.

Communication and transparency: Interviewees found that poor communication and a real or perceived lack of transparency created a culture of mistrust with respect centre-led initiatives. Although the majority of interviewees felt this was critical principle for success there were no suggestions on how this could be improved. In addition, interviewees did not directly link the establishment of more formalized cross functional governance structures as a means to achieve more effective communication and transparency.

Direct end-user benefits and incentives: Interviewees that commented on incentives found that central-led initiatives in highly decentralized environments require end-user incentives for adoption. This was largely discussed in the context of the culture of real or perceived mistrust of central administration at UBC. Interviewees found that if agreements were structured to primarily incent and benefit the end-user then end-user adoption would be facilitated. This approach was preferred to and viewed as an alternative to mandating adoption in the UBC environment.

Strategic Supply Management Failures

Although the interview responses varied with respect to personal experiences and specific agreement types, overarching causes of agreement failures surfaced through the interview findings. Key strategic partnerships with vendors tended to emerge with the objective of solving an immediate problem or to achieve a specified objective, rather than through a strategic commodity categorization process. Because of this, changes in the original motivation or intent of the agreement or partnership were found to have caused agreement failures. For example, in one case a strategic partnership was formed in response to regulation changes in the industry. During the term of the agreement, regulations changed making the partnership and its success less critical thereby losing executive and key stakeholder support and visibility. Unforeseen market condition changes were also found to cause agreement failures where agreements were formed with the objective of mitigating market risks. In these examples, the market conditions changed dramatically during the term of the agreement to the point that the agreement was no longer financially mutually beneficial to one or both parties. As discussed above, under general principles, fragmented, inadequate or poor governance was cited as a leading reason for agreement failure. In some cases the agreement tended to fail shortly after contract execution because end-users did not feel represented or consulted. In other cases, ineffective governance did not allow prompt resolution of implementation issues which overtime became insurmountable. Agreement failures were also found to be caused by an erosion of partnership relations. In such cases, the values and culture of the partners were not in alignment. In few cases the actual contract was found to be the cause of an agreement failure. In these cases, contracts that inadequately addressed identified risks and contracts which were not inherently mutually beneficial resulted in failure. Lastly, supply management failures were found upon contract execution due to insufficient vendor knowledge of client's business, inability to obtain this knowledge or divergences in culture.

Ideal structure for UBC

A hybrid organizational structure was considered to be the optimal organizational structure in order to leverage the existing centralized and decentralized structure at UBC. Interviewees interchangeably used the terms shared services and an integrated and distributed model. The term shared services was used to refer to a centrally managed model whereby the centre manages the overarching strategy. The agencies or departments are connected to the central procurement body but have flexibility and independence to carry out tactics and transactions. All respondents indicated that the SM should be responsible for regulation, policies, procedures and processing systems. The interviews indicated that the shared services model would enable succession planning and career mapping, thereby enabling greater attraction and retention of procurement professionals.

Not all interviewees were in accordance with the details of how this model would be achieved and implemented at UBC, as discussed in the following section.

6.2 Differences Noted

The primary differences in interview responses centered mainly on what the key stakeholders believed would constitute the ideal supply management structure and framework for UBC. Although all responses recommended a hybrid organizational structure there were different interpretations of what the centralized and decentralized structures would be responsible for and what the reporting relationships could look like. In addition, a distinct difference was noted in the response to public and private sector environments. The key differences noted have been grouped as follows: roles and responsibilities, reporting relationships, governance model and public and private sector environments.

Roles and Responsibilities

There were difference of opinion on the roles and responsibilities of the centralized and decentralized supply management functions with respect to vendor selection and requirements definition. Three of the interviewees felt that decentralized units should be responsible for requirements definition and vendor selection, irrespective of commodity type. Two of the interviewees felt that this should be centralized responsibility; and the remaining interviewees did not offer a strong opinion either for or against centralization or decentralization in this regard. There were differences of opinion on the roles and responsibilities around purchase orders but the findings were not conclusive because interpretations around what the requirements are for purchase orders was not consistent.

Reporting Relationships

Of the 17 interviewees, one believed that an organizational structure which established a dual reporting line from the decentralized purchasing officers into the SM and the decentralized department was an ineffective structure. Eight of the interviewees believed that the shared services model, which establishes a reporting line from the decentralized purchasing officers into central SM, is an essential and critical component of a hybrid structure. The main benefits of a shared services model include improved communication, cross functionality, knowledge transfer and succession planning. The remaining eight interviewees recognized the importance of and need for a shared services model, but felt that more strategic changes at UBC would be required before a shared services model and hybrid organizational structure could be successfully adopted. The primary reason against the implementation of this model was the layering of additional organizational complexity upon the already complex organizational structure. They felt that a shared services or matrix structure may add both complexity and further bureaucracy into the procurement process.

Governance Model

All of the interviewees felt that there should be a single point of procurement decision making. However there were differences in opinion and interpretation as to how this could be achieved. One of the interviewees felt that a federated governance body should be established to represent the needs of the institution, which includes Deans and Vice Presidents. The SM was recognized as a participant and not the chair or leader of this governing body. Three interviewees felt that the there should be a SM lead committee made up of key appointed and rotating stakeholders. Three interviewees felt that the SM should be responsible for all procurement decision making. One of these interviewees indicated that no formal governance body needed to be established, but that a change in the reporting relationships to enhance the authority, prominence and importance of supply management within the organization should be implemented. The remaining nine interviewees felt that governance was required but did not offer a strong opinion on a decision making governance structure. With respect to execution, one interviewee felt that there should be a central authority for the execution of all procurement agreements with BC Hydro provided as an example of a centralized execution model. One interviewee felt that the existing governance model and principles are in conflict with the rest of the governance that is in place at UBC.

Public and private sector environments

While the majority of interviewees felt there was a distinction between public and private sector environments, one interviewee opined that supply management departments are driven by processes in both the private and public sectors. Although the private sector may act more quickly to rectify and reform supply management if there is an impact on profitability, the actual supply management departments tend to focus primarily on process. This interviewee also felt that private sector supply management departments are equally not viewed as a value added partner but a bureaucratic process with staff that is more concerned with checklists and formalities than results. This interviewee felt that in general supply management departments are inflexible and unwilling to accommodate unique commodity procurement needs.

6.3 Unique Findings

At the end of each interview the interviewees were invited to discuss and provide any additional information that they felt would be relevant to the interview. Unique responses resulted from this open-ended discussion. If more than one interviewee expressed a similar opinion, it is noted in the table. Otherwise, as not all interviewees commented on similar themes in the open-ended discussion, each of the findings presented below represents the view point of an individual interviewee.

Table 3: Unique Interview Findings

Unique Findings	Interview Responses
Mandating and Culture	Four interviewees discussed UBC's inability or unwillingness to mandate, enforce, or control procurement. They indicated that there is neither the political will or in some cases, the ability to enforce, monitor or control spending that takes place outside preferred vendor agreements and centralized supply management strategies. Inability to affect change was discussed in the context of the culture of individual as opposed to institutional objectives. Two interviewees felt that because administration is not part of a university's core mission, it generally fails to be addressed despite the fact that administrative inefficiencies are relatively easy to correct and the cost savings potential are material.
Reporting Lines	Four of the interviewees indicated that the existing reporting line to UBC@O is not strategic and does not allow UBC@V opportunities to be maximized.
End-user needs	UBC is not able to optimize end-user requirements because of the current decision making process for institutional agreements, which is ad-hoc, lacking in transparency, cohesiveness and not consistently representative of key stakeholders and subject matter experts. The following findings represent the view-point of three interviewees: E-procurement tools at UBC would dramatically improve existing procurement processes for the end-user by decentralizing transactions for greater efficiency. This would also benefit the SM by enabling centralized data collection and allow the re-deployment of central resources to focus on strategy and oversight rather than processing.
Incentives and communication	Three interviewees commented on incentives and communication. Overall they indicated that UBC has failed to effectively provide incentives which change or influence behavior and that the communication of potential benefits of centralizing and coordinating procurement is inadequate. Two interviewees indicated that historically, the budgeting and funding allocations were not transparent resulting in distrust in central administrative objectives.
Vendor relationships	The following two findings were from two different interviewees: 1) UBC treats partners on a commoditized and an antagonistic basis as a result of ill-suited vendor partnerships. Vendors do not or are perceived not to have the same overarching objectives at UBC.

Unique Findings	Interview Responses
	2) The previous 15-17 years with UBC had been tactical with no overarching strategy. Vendors are able to take advantage of the lack of central strategy by overselling and over pricing at the department level.
Existing Barriers	Barriers to effective supply management at UBC are poor disclosure and transparency, highly decentralized decision making, high level of intelligence with the ability and desire to critique administration and a sense of entitlement whereby academic freedom is confused with administrative freedom (three interviewees shared this last point).

6.4 Summary

The stakeholder interviews enabled a cross functional perspective and validation of the current state perspective of supply management at UBC. Despite the relatively small sample size, the results demonstrated overwhelming consensus in seven of the thirteen questions. Common themes were evident with respect to the interviewees' understanding and interpretation of strategic supply management, impacts on strategic supply management as they relate to sector and organizational structure, as well as key success factors and principles. The interview responses provided a wide range of perspectives and recommendations that were directly applicable to UBC.

Differences were noted in the areas of public and private sector environments, the structuring of hybrid organizational structure, the roles and responsibilities inherent in a hybrid structure as well as differing opinions on ideal governing structures. In addition, the interviews resulted in unique findings that were not directly related to the interview questionnaire. All interview responses provided additional context to the UBC environment and served as a foundation for determining potential recommendations. The perspectives of key stakeholders were considered when developing recommendations to help eliminate or reduce barriers towards more successful and strategic supply management.

7. DISCUSSION

This section draws on the key themes and practices researched through literature review, case studies and interview findings. The purpose of this section is to integrate and discuss these findings with the ultimate objective of applying the combined research findings towards recommendations and options for improving UBC's supply management strategy and execution.

7.1 Organization

Structure

The hybrid organizational structure described through the works of Johnson and Leenders (2004), Reed et al. (2005), Crandall and Crandall (2009) and the State of California case study outline the merits of a hybrid organizational structure as compared to centralized and decentralized models. The UBC interview findings also suggest the establishment of a hybrid organizational structure at UBC. The existing structure at UBC is currently operating in a hybrid form with both decentralized and centralized players. However, it has developed informally and lacks clarity of roles, responsibility and accountability. To this point, the challenge prevalent in all hybrid structures is the determination of what elements should be centralized or decentralized.

The research conducted, including the interview findings, recommended centralization for strategic sourcing decision making, systems, regulations, policy and processes. The findings suggest that regulations, policies, practices and systems should be centralized in order to ensure compatibility, standardization and transparency. Decentralization was suggested for transactions and tactical procurement functions. Both the literature reviews and the State of California case study suggest similar approaches to the delineation of more detailed responsibilities within a hybrid structure. Although not all processes involved categorization models, in most cases such tools were found to be critical in the determination of responsibilities in a hybrid structure to ensure supply management roles and responsibilities were in alignment with organizational objectives.

Within the hybrid structure, both the U of M and State of California case studies adopted the shared services model whereby all procurement activities were consolidated under the leadership of a CPO in order to leverage the decentralized or agency purchasing offices. Some of the interviewees recommended a shared services model whereby de-centralized purchasing functions are linked through a reporting structure to the SM. The interviews indicated that a by-product of the integrated and distributed structure would enable succession planning and career mapping, thereby enabling greater attraction and retention of procurement professionals.

Reporting Relationships

The literature review findings of Johnson and Leenders (2004), and Johnson and Leenders (2008) and the IBM case study provide evidence that organizations that have strategically positioned supply management higher in the hierarchical structure of the organization have successfully changed procurement strategies and operations to reduce costs, and increase performance, customer service, quality, dependability, vendor relations and innovation. Despite this, Johnson and Leenders (2008), found that that the level of most procurement functions is predominately concentrated at two to three levels below the CEO and reporting to a senior executive that does not have expertise in supply management. This is evidenced in both the U of M case study and UBC's current state.

U of M's procurement reform established the position of CPO but retained the hierarchy of the position three levels below the President. The CPO's direct report is to an Associate Vice President with little supply management expertise and with supply management being a very small part of that executive's overarching portfolio. U of M seems to have mitigated this through the use of cross functional committees and strategic sourcing experts with the responsibility and accountability to strategically source key commodities. Similarly, as described in the Background section, UBC's Director of Supply Management reports three levels below the President, to an AVP at UBC@O which is geographically removed from the UBC Vancouver campus. Interview findings indicated that the reporting line to UBC@O is not strategic and does not allow UBC@V opportunities to be maximized.

Based on the research findings there is evidence of a correlation between reporting relationships and supply management strategy, governance, executive support, end-user acceptance and execution. Thai (2001) also found a correlation between fragmented and complex reporting relationships and processing inefficiency. The hierarchical structure and complex reporting relationships at UBC may be impacting the realization of timely and effective supply management strategies.

7.2 Decision Making

Regulations and Processes

Although the literature recognizes the need for legal frameworks and regulatory systems practical applications, the case study and interview findings indicate that they can only be effective if everyone in the organization is participating and adhering to them. The State of California case study found a significant amount of non-compliance in the regulatory and process frameworks. The major contributing factors for non-compliance include regulatory complexity, misinterpretation of policies and regulations, regulatory inconsistencies, practice

and precedents, and laborious processes. The State of California case study found that the complexity of regulations and policies resulted in a lack of transparency causing both real and perceived abuse of and unfairness in procurement processes. Recommendations included a regulatory review with the objective of reforming legislation and policies that negatively impacted the procurement process. The U of M case study and UBC stakeholder interviews found that the central supply management function was largely viewed as a bureaucracy that faculty and staff tried to maneuver around in order to meet procurement needs.

The literature review, the U of M and State of California case studies and UBC interview responses found the public sector to be fundamentally process driven, at the expense of efficiency, effectiveness and cost savings. In both the State of California and U of M case studies it was found that regulations and processes were inflexible, inefficient and ineffective. In these two cases, processing issues were deemed to be one of the largest barriers to efficiency, cost savings, and meeting end-user needs. The U of M case study demonstrated that process improvements resulted in savings of approximately $19 million in the first phase of implementation, with an additional $10-18 million expected in further savings once e-procurement tools were implemented. The process improvements reduced the workload of the centralized purchasing practitioners, enabling them to focus on obtaining greater value for the institution by focusing on high value transactions. Furthermore, process simplification enabled greater compliance and end-user adoption which provided central procurement with the business intelligence originally impeding strategic procurement from being realized. Similarly, the State of California recommended the adoption of an e-procurement system and regulatory reform to streamline and simplify processes and enable strategic planning and management of state procurement.

The interview findings suggest that results and process driven extremes can be equally detrimental to procurement success. These findings indicated that the balance likely falls somewhere in between, where the landscape provides a degree of flexibility while still maintaining due process. Unique findings from the stakeholder interviews indicated that e-procurement tools at UBC would improve existing procurement processes by decentralizing transactions and execution while enabling centralized influence and oversight. The U of M embarked on an e-procurement strategy through the establishment of multi-disciplinary stakeholder committees, the development of a feasibility study and a business case for an e-procurement system. The end-user and executive committee approach seems to have effectively governed and enabled the implementation of an e-procurement system in an environment similar to that of UBC.

Although e-procurement appears to be a common recommendation within the case studies and interview findings, the literature review and U of M case study found that further process improvements could be achieved through a redefinition of roles and responsibilities, the elimination of duplicate processes between the

supply management and finance areas and an alignment in the reporting relationship between procurement and finance to enable processing synergies. These findings could be applied to UBC as supply management and financial services are distinct departments with similar processing requirements and processes.

Commodity Councils

The literature review specifically that of Reed et al (2005), and the U of M and IBM case studies indicate the merits of a commodity council structure for decision making of strategically selected commodities. They indicate that commodity councils would leverage economies of scale, establish strong vendor relationships, and meet or exceed organizational and end-user requirements. The findings suggest that each commodity council should be supported by an executive sponsor and led by a commodity expert. Reed et al (2005) found that the establishment of commodity teams actually enabled and facilitated the transition "from the traditional decentralized approach to a requirements generation process that includes a centralized strategy with decentralized execution" (p. 283). A hybrid organizational structure was found to best enable a commodity council concept because, by design, commodity teams are intended to develop the strategy while the execution is intended to be implemented by the end-user.

In the case of U of M, additional resources were provided to engage commodity specialists. The U of M realized actual cost savings averaging $14 million on commodities as a result of their application of strategic sourcing techniques. IBM's strategic sourcing categorization resulted in the identification of three key commodity groupings all of which are governed by subject matter experts through a commodity council structure. The cost savings derived by implementing commodity councils were instrumental in the financial viability of IBM during a time of near insolvency. The literature cites many private sector examples, whereby the use of commodity councils have successfully and materially led decision making with dramatic financial success, IBM being the most known industry example. However, in the public sector, findings show that commodity councils failed when the lines of authority and span of control were unclear. In the case of U of M the establishment of a CPO with clear authority and accountability seems to have facilitated the success of a commodity team concept. Although the UBC interview findings did not indicate that commodity teams be implemented, they almost unanimously indicate that current governance models are ineffective, inadequate and fragmented preventing effective and timely decision making from taking place.

Strategic Sourcing

Both the literature review and case studies reviewed provide evidence that strategic sourcing through category management dramatically reduces

procurement costs. Rendon's (2005) research (citing Lasseter, 1998) on the seven-step balanced sourcing model forms the basis of strategic sourcing planning models. Within this planning model, Slaight (1999) and Trautmann et al. (2009) provide evidence that strong vendor relationships are a key and critical success factor for strategic sourcing. Similarly, the State of California also cites the establishment of strategic vendor partnerships, which are to be evaluated against established performance criteria, as a key success factor. UBC's past experience establishing strategic vendor partnerships has not been successful largely because of poor governance and decentralized decision making. These barriers make it difficult for the institution to form strategic vendor relationships with key vendors to ensure mutual understanding and alignment of objectives.

Trautmann et al. (2009) emphasize the criticality of portfolio modeling, especially in a hybrid organizational structure model whereby the identification of decentralized and centralized functions, as they relate to commodity purchasing responsibility and accountability, are essential to a cohesive strategy. The State of California case study recommended the use of matrices, similar to the Kraljic matrix, to categorize commodity portfolios based on risk and financial impact to determine which portfolios are to be strategically sourced at the Tier I, enterprise level. The State of California study estimates that strategic sourcing could realize savings that exceed $200 million dollars annually. Both the IBM and the State of California case studies identified computer software products as an immediate cost reduction strategic sourcing opportunity. Rendon (2005) found that public institutions are more likely to face challenges in the adoption of a strategic sourcing planning process because they lack the systems and business intelligence data to thoroughly analyze the procurement activity in the past and the future procurement needs. The UBC Background section points out the difficulty that the SM has experienced trying to obtain data to analyze procurement spending because of the decentralized decision making and lack of system compliance. The interview findings suggest that at UBC there is difficulty in accepting the difference between academic and administrative freedoms. The lack of a formal strategic sourcing process and category management at the institutional level further drives decentralized decision making which generally benefits the end-user without consideration of institutional impact.

7.3 Summary

The best practices identified in the literature review were also identified as critical practices and areas of reform in the case studies. The interview findings provided a greater understanding of the UBC context and a stakeholder perspective of key issues. The primary findings indicate that a hybrid organizational structure is optimal, but that its success depends on a clear and defined delineation of the roles and responsibilities. The prominence and visibility of supply management in the hierarchy of the organization seems correlated to strategic supply management success largely because it enables greater alignment between supply management and the overall objectives of the institution. Ineffective and

complex regulations and policies negatively impact decision making, compliance, timeliness, and vendor relations. Non-compliance puts the institution at risk, inhibits transparency and decision making and negates the originating rationale for the existence of such a framework. The streamlining and automation of processes were found to have a material cost savings impact and improved efficiency and customer service for the end-user. Strong and effective governance, with commodity councils used as an example, were found to be critical to strategic decision making. In some public sector cases strong cross functional governance structures were able to achieve the same success as elevated hierarchy which demonstrates the importance of effective decision making structures in complex environments. With respect to strategic sourcing, commodity categorization models were found to be the most effective tools at aligning objectives with outcomes resulting in the most material cost savings opportunities and the strongest vendor partnerships.

8. RECOMMENDATIONS

This section provides UBC with recommendations based on researched best practices, principles and applications identified within the context of the interview questions and background knowledge of UBC's supply management environment. In addition to the recommendations, a potential new model for UBC's supply management landscape is depicted to illustrate the impact of recommendations if they were to be applied and implemented.

The new supply management landscape is based on the application of seven key recommendations to reform supply management at UBC as follows:

Recommendation 1: *Formalize a hybrid organizational structure which leverages the benefits of both centralized and decentralized structures by defining roles, responsibilities to strengthen accountability and to align and deploy existing resources towards a common procurement strategy.*

Recommendation 2: *Integrate existing central and decentralized purchasing resources to improve compliance, transparency, communication and succession planning.*

Recommendation 3: *Increase the prominence of supply management in UBC@V's organizational structure in order to obtain increased executive and end-user focus and support on supply management reform at UBC@V which has the most material cost savings and efficiency opportunities.*

Recommendation 4: *Streamline and improve existing procurement processes to improve efficiency, increase customer service, and allow the SM to focus on strategic procurement.*

Recommendation 5: *Review existing supply management policies and regulation to ensure that the existing framework is not inadvertently preventing the most efficient and effective procurement strategies from being deployed.*

Recommendation 6: *Establish a more effective governance model for decision making with the objective of focusing and aligning institutional and procurement objectives through cross functional participation in order to focus on key commodities, improve vendor relations, and increase end-user satisfaction.*

Recommendation 7: *Identify key commodities that should be strategically sourced to maximize economies of scale and cost savings as well other identified institutional objectives by allowing the institution and the SM to focus centralized procurement in the areas which provide the most value.*

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The impact of applying these recommendations on UBC's existing supply management landscape is depicted in Figure 6 below. In contrast UBC's existing supply management landscape, as described in the Background section, is provided in Figure 7. This new model for UBC has the potential to mitigate or reduce existing barriers that are preventing successful and strategic supply management at UBC. The new model for UBC utilizes the CPR's (2007) recommendation for the State of California's organizational structure model as its foundation.

Figure 6: Recommended Supply Management Landscape

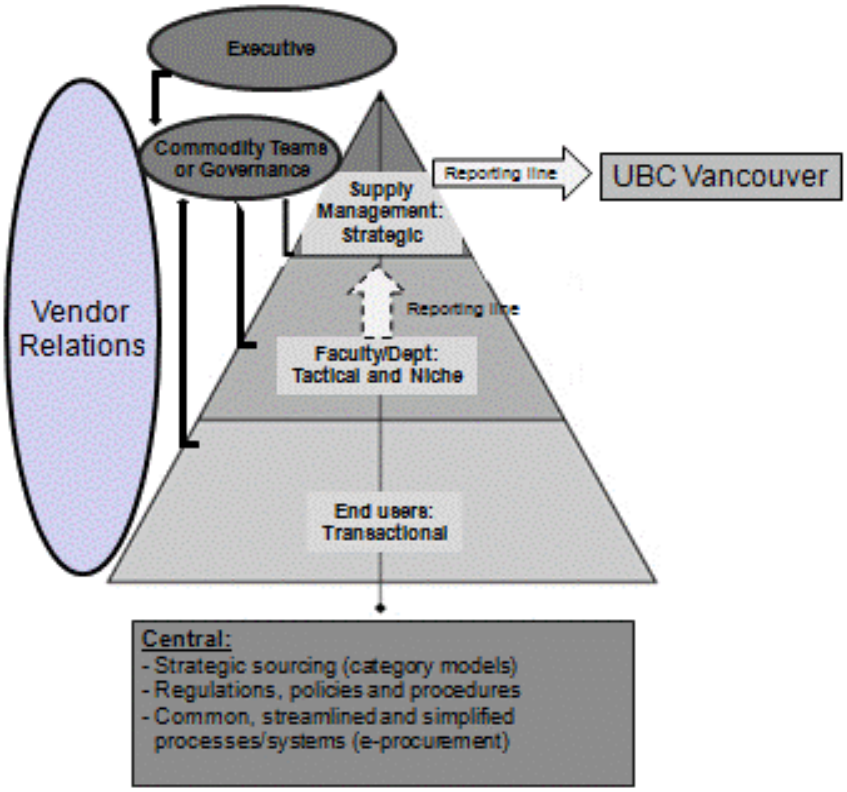

Figure 7: UBC Supply Management Landscape

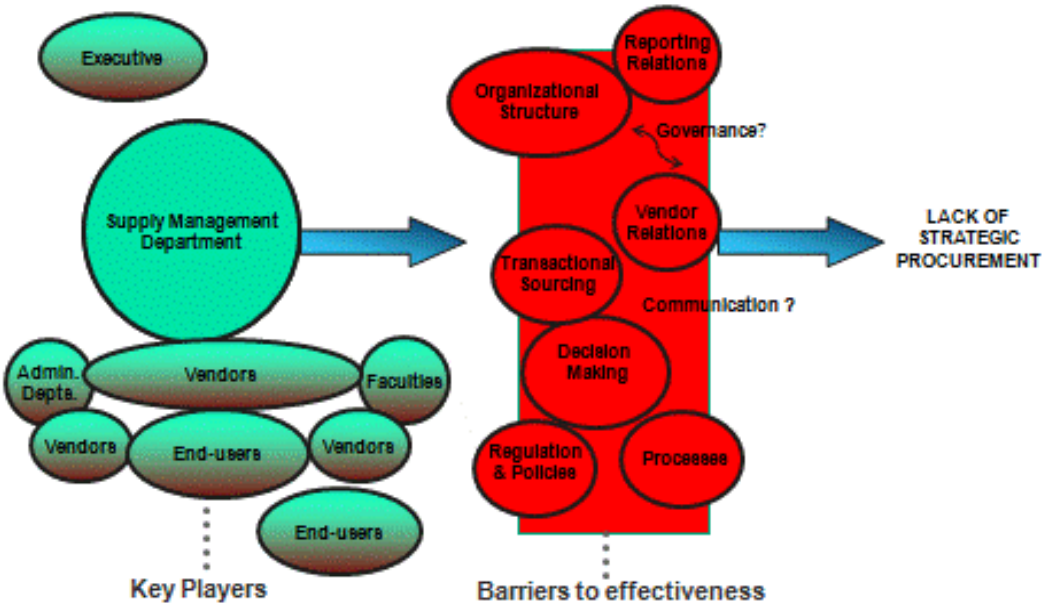

Figure 6 illustrates a connection between the Supply Management Department (SM) and the faculties or departments that it is intended to serve through a dotted and matrix reporting structure. Communication and clarity is facilitated through this reporting line which also improves compliance. The SM's reporting line has been re-organized to UBC@V in order to better lever supply management opportunities and increase supply management visibility in Vancouver. Roles and responsibilities are outlined at a high level with central accountability for key system-wide supply management functions. A commodity team or some form of governance model has been established for strategic sourcing decision making which includes representation from end-users, departments/faculties, the SM and the Executive. Executives are able to support and influence decision making through a more formalized and transparent governance structure. Lastly, vendor relationships are created at all levels with the most strategic vendor relationships closely linked to commodity teams or other governance structures that have been established for key commodities.

9. CONCLUSION

A UBC economic sustainability task force, established in 2009 identified supply management as an area of administrative reform which had the potential to materially provide cost savings to the institution in a time that UBC faced a material deficit position. This report was written for UBC with the objective of providing recommendations to reform supply management. Research findings indicated that reforms to organizational structure and decision making were essential in achieving more strategic supply management which resulted in improved efficiency, increases end-user satisfaction and material cost savings.

Literature review and case studies demonstrated that successful and strategic supply management consistently followed certain key best practices. The interview findings enabled a cross functional perspective, support to the current state perspective of supply management at UBC and allowed recommendations to integrate best practices with UBC specific perspectives. The report provides seven recommends for UBC to achieve more strategic supply management. The primary objective of the recommendations is to align institutional, supply management and end-user objectives in a manner that coincides with the organizational structure, resources and decision making to optimize cost-effectiveness and strategic supply management outcomes at UBC.

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APPENDIX 1: Document Management Strategy

The following table summarizes interview findings specifically related to the UBC system-wide document management strategy. These findings were extrapolated from the interview responses and be used for reference when considering future institution-wide agreements at UBC.

Table 5: Document Management Interview Findings

Description	Feedback
Impacts of decentralization	Three of the interviewees commented on impacts of decentralization. Because UBC is decentralized, any solution requires a degree of customization for each key stakeholder and a value proposition to each end user. The agreement tried to accommodate this through individual “statements of work’ at the departmental level, but the administration of this process is more time consuming.
Leadership	Three interviewees discussed leadership challenges. A champion and clear accountability for the document management project is unclear. The business owner has been defined as the IT Department while the contract champion is deemed to be SM and the AVP Finance at UBC@O. What this actually means with respect to leadership and accountability is not clear.
Incentives	The vendors interviewed found the incentive structure challenging. They found that in addition to end-user incentives, there should be central incentives or incentives to the business or contract owners. As such, they felt if these incentives were in place this may have encouraged accountability, cohesion in the champion role. They found that the champion role may have been compromised in order to provide sole benefits to end-users. In addition two responses found that the decentralized nature of budgeting at UBC made it difficult to maximize savings or synergies. They found that no incentives were provided to end-users to consolidate or centralize their document management budgets centrally.
Negotiating team	Five of the respondents discussed the negotiation process. All five responses found that the establishment of a negotiating team with key stakeholder representation was critical to success, however that that business owner was identified too late in the process which may have created ownership and accountability issues that remain evident.
Pilot test phase	Four responses discussed the pilot test phase prior to contract negotiation. Overall the concept was considered to be an excellent approach for institution wide agreements as it enables end-user input, allows for a soft launch, furthers communication and enables buy-in. However all responses found that the pilot was not carefully thought out and was implemented in haste. The result of which did not enable proper planning, vetting of key objectives between parties nor did it allow departments to

Description	Feedback
	adequately allocate resources. As a result, departments that were selected or volunteered for the pilot became overwhelmed with the volume work and velocity within which the testing was to be conducted. In order to alleviate pressure, sample selections were permitted as opposed to assessing entire departments. Because of the work load, pressure and time restraints put on Departmental resources, a negative sentiment emerged in relation to the document management strategy. In addition, because only sampling took place as opposed to full assessments, pilot-assessed departments needed to be re-assessed once they officially signed on to the agreement a few months later. As a result, additional workload was placed on these departments and many errors were uncovered once the departments agreed to participate. This contributed to negativity and frustration on both parties in the initial implementation phase. Clarity of objectives and communication would have mitigated the negative outcomes of the pilot project.

APPENDIX 2: Interview Questionnaire

The questionnaire used in the interview process, Table 6 below, was approved by the project supervisor, the University of Victoria ethics committee and was tested on two key subject matter experts representing academia and practitioners to ensure the questions were clear and relevant.

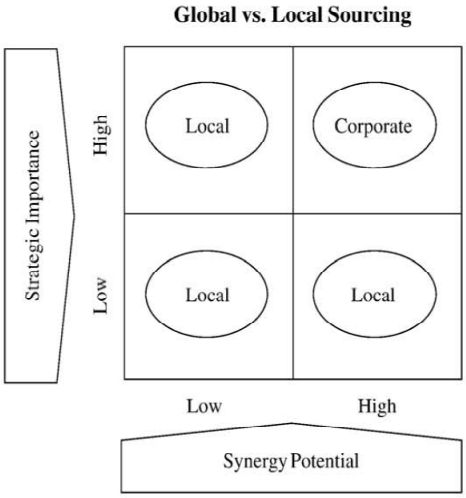
Table 6: Interview Questionnaire

1	Can you tell me about your experiences with respect to strategic supply management execution? Ie what was the experience, what was your role (s).
2	How would you define Strategic Supply Management Execution?
3	To what extent do you think there are differences between strategic supply management execution in a decentralized institution and a centralized institution?
4	To what extent do you feel there are differences between SM strategy in a public or private institution?
5	Can you describe factors that influence the relative effectiveness of UBC with respect to SM strategy (ie: structural, cultural barriers)
6	Can you identify factors that contribute to the success of centralized or decentralized supply management function?
7	Do you feel there is a particular contract or agreement type that is better suited for decentralized environments (ie PPP, shared service?)
8	What general principles do you feel are critical to successful supply management execution in a centralized and decentralized environment?
9	To what extent, if any, do you feel there is a difference between SM strategy in a public versus private institution?
10	Can you describe the most successful agreement process that was put in place in an institution (either by experience or case study). *What functions were involved?* Why do you think it was successful?
11	Can you describe an agreement failure (again, either by experience or case study). Why and what stage did it become a failure?
12	If you were able to establish an ideal framework and structure for UBC with respect to strategic supply management execution, what would it look like? a) What barriers, roadblock or caveats do you for see (if any) with this approach?
13	If you have personally been involved as a player in strategic supply management execution, is there a particular approach, style or methodology that you have adopted which you think has contributed to success, regardless of structure, agreement type, etc.

APPENDIX 4: Category Management

Trautmann et al. (2009) provide various matrix models that can be applied to strategically categorize commodities based on the supply management and institutional objectives. Figures 7 through 10 below are provided for illustrative purposes. They are not elaborated on in detail and have been provided merely to demonstrate the various matrices available as tools to align institutional and procurement objectives.

Figure 7: Global versus Local Sourcing

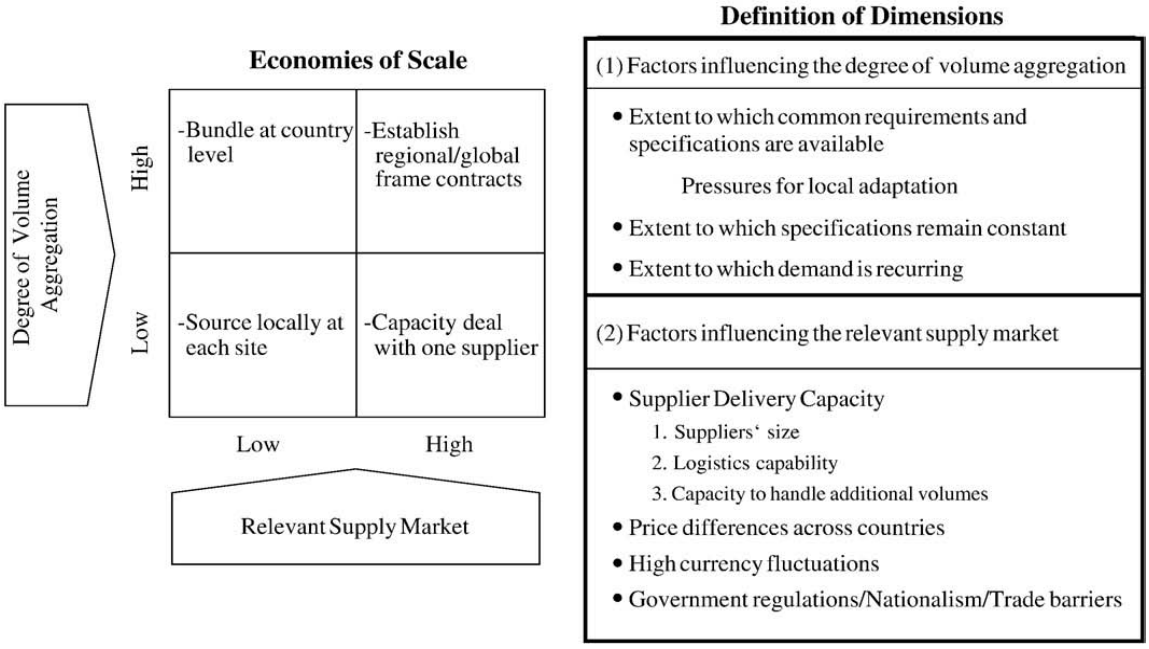


Factors influencing the Strategic Importance (y axis)
• Competence Factors 1. Extent to which a purchase is part of firm's core competency 2. Purchase yields technical or knowledge advantage
• Economic Factors 1. Total spend volume of purchase 2. Impact of purchase on final product with high value added 3. Extent to which a purchase is part of product with high profitability

Factors influencing the Synergy Potential (x axis)
• Economies of Scale 1. Degree of volume aggregation 2. Relevant supply market
• Economies of Information & Learning 1. Purchase difficulty 2. Supply risk
• Economies of Process 1. Transaction volume 2. Process complexity

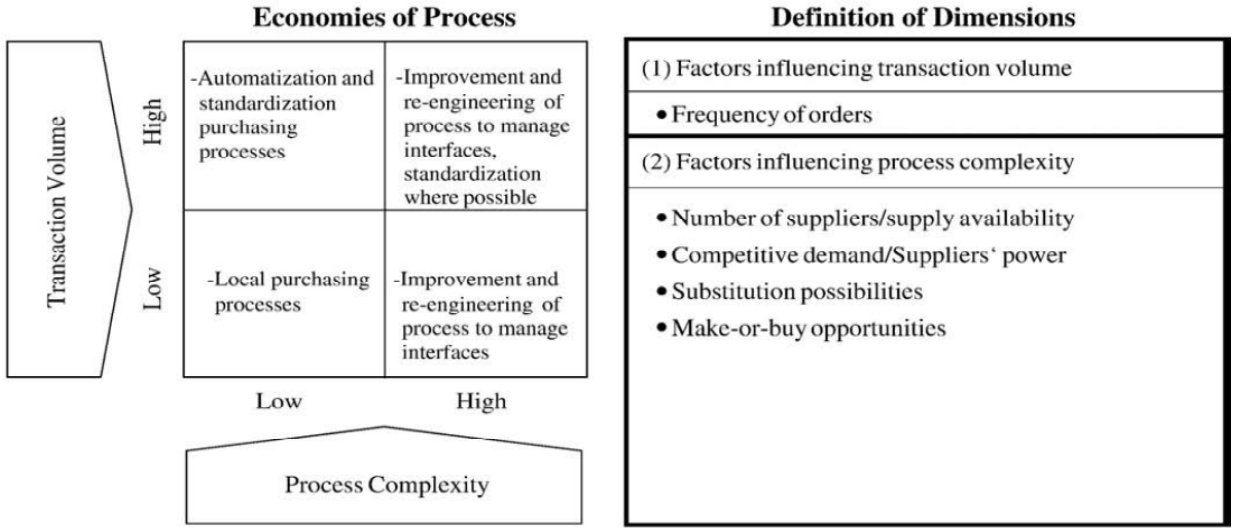
(Trautmann et al., 2009, p.198)

Figure 8: Economies of Scale



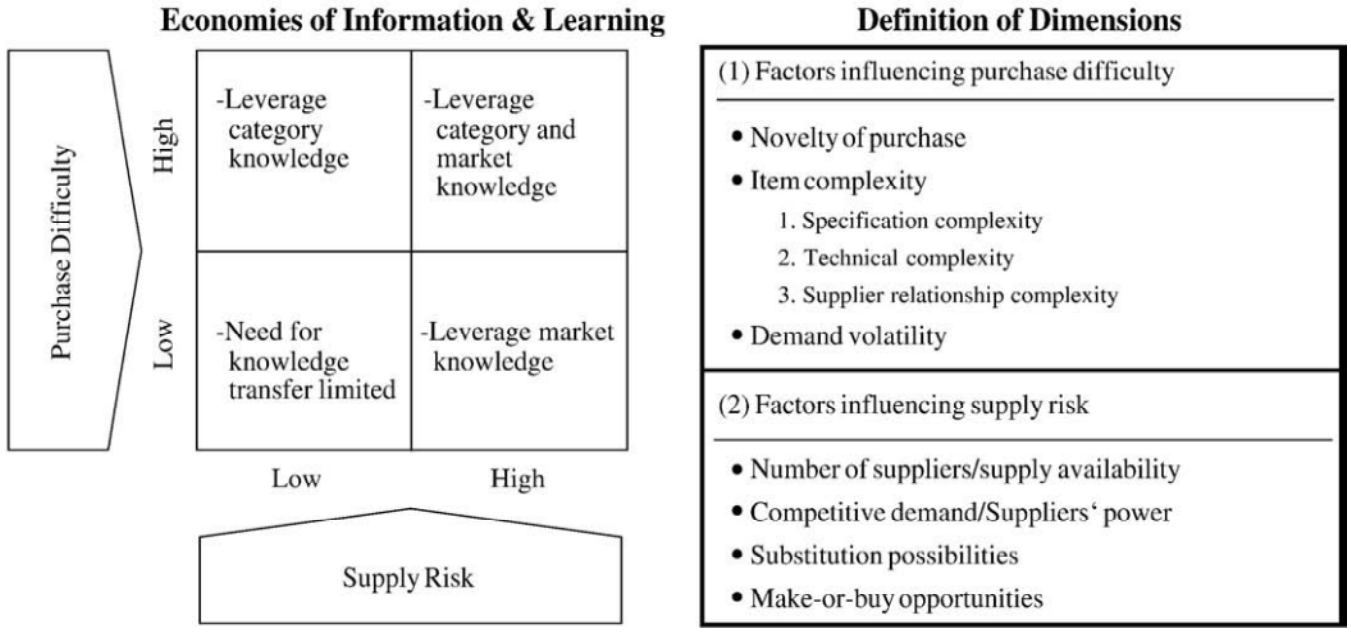
(Trautmann et al., 2009, p.199)

Figure 9: Economies of Process



(Trautmann et al., 2009, p.200)

Figure 10: Economies of Information and Learning



(Trautmann et al., 2009, p.199)

APPENDIX 5: Commodity Groupings: IBM Example

General procurement for Global Sourcing

Business services: Consulting/professional services performed in the areas of business consulting, market intelligence, education, and Human Resources benefit and support programs.

Complementary workforce services: services that require administrative or clerical activities to be performed by a contractor or temporary staffing for call centres, help desk, mail rooms, reproduction services, graphics, drafting or other temporary administrative services.

Connectivity: Networking hardware and services, including related supplies.

Enterprise services: Facilities management and operations (FMO): Operations and facility maintenance services, cleaning for office projects and data centre/manufacturing projects; provision of security, environmental, maintenance repair operations (MRO), office supplies, and cafeteria. Facilities design and construction (FDC)

Information technology (IT) products, services, and maintenance: Information Technology (IT) equipment hardware and maintenance.

Marketing communications: Services in support of internal and external communications, marketing and advertising.

Print services: multicolor printing, brochures, pamphlets, catalogs, annual report printing, printed graphics, all web and sheet-fed offset printing, CDs and all paper used in the production of printed material.

Software: Commercially established catalog software; custom software; and developer-provided maintenance services associated with licensed software.

Telecommunications: Local and long distance phone services (including data traffic), audio and video conferencing, pagers, cellular phones, calling cards.

Travel: All business travel services. Regional contacts include airlines, automobile rental, hotels, purchase cards, travel agency services and travel charge cards.

Technical services: All temporary technical services performed by a contractor to satisfy current and future business requirements.

(IBM, 2011)