

MEASURING AND REPORTING BENEFITS OF STRATEGIC SOURCING OF TECHNOLOGY: A CASE STUDY

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ABSTRACT

A key challenge to enterprises is the quest to remain competitive. This may inter alia require coordination of cross-functional and cross-divisional activities that support the core competencies of the business.

Strategic Sourcing is a cross-functional process and involves managing, developing and integrating with supplier capabilities to achieve a competitive advantage. Through Strategic Sourcing a company may realise a number of monetary benefits through costs avoidance and through costs containment in effect being able to “buy better” and “consume better”.

This paper outlines a case study on a large chemical company’s Strategic Sourcing activities in a bid to achieve the above mentioned objectives.

This company has existing methodologies and processes to monitor and report on these benefits but some of these benefits are not optimally accounted for or reported on due to shortcomings in the current processes. These existing processes and methodologies are based on a set of ground rules as set out in the paper.

The aim of the research was to develop a model to improve processes and improve the methodology for tracking, measuring and reporting benefits. These are then articulated as a new set of ground rules for the company.

The proposed model was tested on two strategic sourcing contracts with high value and high criticality in plant operation; this was a Pressure Transmitter contract and a Process Automation contract.

The new set of ground rules and principles developed in this paper may also prove to be useful to a wider audience where approach may be useful to other companies as this outlines a process to effectively realise and track value add of strategic sourcing to improve business competitiveness.

Key words: Strategic Sourcing, Benefits, Technology, Procurement, Life-cycle

INTRODUCTION AND LITERATURE REVIEW

Companies seek growth through maximising profits and to retain competitiveness in their respective industries. This includes a requirement to engage in cross-functional and cross-divisional activities that support the core competencies of the business. Strategic Sourcing (SS) is one of these activities and has been widely used as a strategy in the procurement function as a supply-chain management process that is aimed at simplifying procurement processes, reduce spend, ensure partnering with most appropriate suppliers and most importantly reduce the Total Cost of Ownership (TCO) of a strategic commodity.

Drawing on Hugo (2006) a range of definitions for SS has been suggested in the literature (see Table 1).

Table 1: A summary of perspective on the concept of SS (WMJ Hugo, 2006).

Strategic sourcing is.....	Source
The design and management of supply base in line with firm's strategic objective.	Burt et al, 2003
A cross functional process and involves managing, developing and integrating with supplier capabilities to achieve a competitive advantage.	Monczka et al, 2002
A process driven an identified goal or need consisting of <ul style="list-style-type: none"> Evaluating current and potential sourcing opportunities and relationships. Assessing their value and relevance to long term organizational goals and overall business and supply management objectives. Formulating and applying action plans and processes for critical commodities or supply networks. 	Institute of supply management in Roberts, 2002
A periodic event that includes the identification and selection of initial commercial arrangements with a selected supplier that either creates or resets a relationship. It consist of the identification of strategic products/services and developing strategies for their procurement.	Kauffman and Crimi, 2000

From the above it can therefore be concluded that SS can encompass a range of tactics for acquiring services and products in a more effective and efficient manner (USA government, GAO. 2012: 6). This methodology of sourcing technology and or related services is commonly used in high-risk, high-value and high-priority multi-year agreements.

Strategic Sourcing, if properly structured, can effectively combine the skills and capabilities of the supplier with that of a firm to yield an amount of quantifiable and non-quantifiable benefits (Khan, K & Pillania, K, 2010: 2). Kausik M & Mahadevan B (2011: 3) further says Strategic Sourcing consists of processes of planning, evaluating, implementing and controlling all sourcing activities undertaken by an organization to achieve its short, mid-term and long term goals. The literature also revealed that all companies managing critical commodities strategically derive a model to serve as a guideline.

Managing commodities through Strategic Sourcing principles should result in costs savings and/or costs avoidance, referred to as benefits. Benefits are measures used to base decisions on and therefore accurately reporting on them is crucial.

According to Eakin (2003:1) benefits can be classified into three categories namely:

Table 2: Categories of benefits

Category of benefits	Description
Hard Benefits	These benefits are directly measurable and are a requirement to deliver enhanced shareholders value. Savings and cost reduction are two examples of such benefits.
Soft Benefits	These are indirectly measured benefits and are difficult to quantify. An example of such is improved quality
Intangible Benefits	These benefits are hard to quantify accurately but crucial to Strategic Sourcing and to Company X strategy. Examples of such benefits are better relations with suppliers, culture change, better usage of processes and technologies and better governance.

The benefits discussed above could be realized in one of the following ways (Mathew & Katz, 1998):

Firstly, *buying for less* could result in savings for Company X. A corporate company may leverage its buying power by centralizing the decision making control of procurement of all strategic commodities. This centralized decision making offers a company to buy in bulk and yield discounts.

Secondly, *buying better*, through good relationships between a supplier and a buyer can reduce overall supplier-buyer transaction costs through initiatives such as streamlining bidding processes, optimizing logistics flows and making early stable commitments to enable efficient supplier production and investment.

Thirdly, to *consume better* as value engineering, reduced complexity and corporate consumption management are examples of how Strategic Sourcing initiatives may benefit the company

All of the above-mentioned benefits are encountered in the Strategic Sourcing efforts of Company X Group Strategic Sourcing department but not all of them are currently measured and reported.

The best measures are those that align with an organisations performance system and strategy (Chenoweth D, 2001:15). Van Wyk R & Crafford J (1999: 10:5) mention the following objectives for calculating benefits:

1. Quantification of benefits targets.
2. Enabling tracking and measurement of all benefits.
3. Ensure integrity and auditability of reported Benefits.
4. Ensure sustainability of improvements.

These benefits are critical KPIs that used to defend Strategic Sourcing value proposition and are also used to investments decisions.

PROBLEM STATEMENT

Company X is a group of diversified chemical plants that has a huge team involved in Strategic Sourcing and reporting of Strategic Sourcing benefits thereof. Strategically sourcing technology poses a different challenge to sourcing generic and logistical commodities because technology is

usually sourced in the project phase and needs to be supported through the lifecycle phase. Strategic Sourcing within Company X combines and aligns the Company sourcing requirements at Project and Maintenance Repair and Operation (MRO) phase to leverage volume discounts on products and services.

Drawing on the best practice mechanisms as outlined by Van Wyk R & Crafford J (1999: 10:5), the stated objectives of strategic sourcing are only achievable if all the business functions involved are committed to SS initiatives and they can lead to quantifiable benefits. Currently at Company X the strategic sourcing team split the classification of benefits as shown in the diagram in figure 1 below, distinguishing between sustainable and once-off benefits:

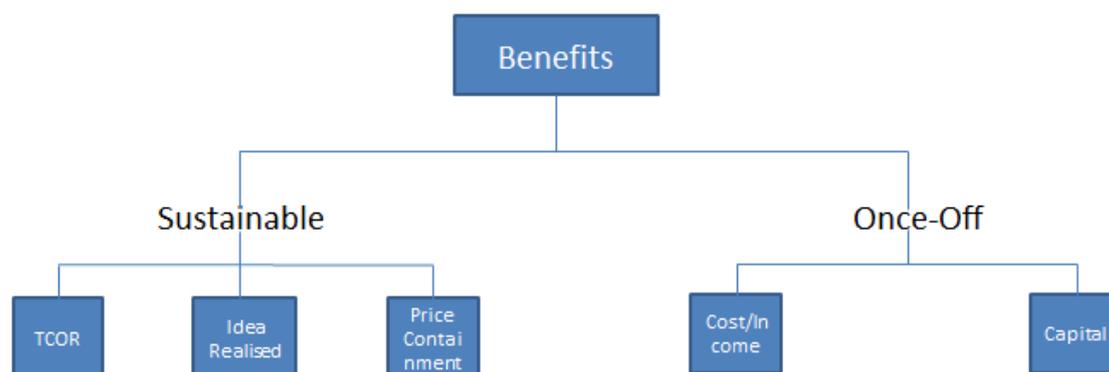


Figure 1: GSS Classification of Benefits (van Wyk & Crafford, 1999)

Within the current reporting process, a benefit is sustainable if its realisation within a given financial year has a permanent year-on-year impact for a defined period of time. Three sustainable benefits are reported on at Company X (van Wyk & Crafford, 1999):

- **Total Cost of Ownership Reduction (TCOR):** Strategic commodities are managed on TCO principles. Plans are put in place and actioned to reduce the year-on-year expenditure on a commodity;
- **Idea Realised (IR):** Idea Realised benefits are sustainable ideas that impact the costs year-on-year;
- **Price Containment(PC):** Price Containment is used in instances where benefits result exclusively from better commodity pricing;

Once-off benefits occur when an opportunity arises that impacts the organisation on a temporary basis. These opportunities are not of a repetitive nature (van Wyk & Crafford, 1999). Once-Off benefits are categorised as follows:

- **Cost:** These benefits are realised when an opportunity that impact costs arises. This opportunity should be of a temporary basis.
- **Capital:** Optimising the specifications capital projects, which results in a decrease of capital expenditure is classified as a Once off Capital Benefit

Current ground rules

Sourcing of high value and high risk commodities requires certain ground rules to ensure that the realised value can be measured in monetary terms. Company X ground rules are set in accordance with the current measured benefits i.e. Once-off and sustainable benefits.

Table 3: Company X ground rules or SS

Benefit		Ground Rules
Sustainable Benefits	TCOR	Continuous management and monitoring of commodity spend on Total Cost of Ownership methodology.
		Comparison of year on year spend adjusted with inflation with an intention of spend less than the previous year.
		The benefit should take consideration of the new activities added for better management of technology.
	Idea Realised	New idea that resulted to the reduction of the year on year spend with consideration of inflation. Idea does not have to come from Strategic Sourcing initiatives.
Once-Off		A benefit resulting from the better commodity pricing.
	Price Containment	The benefit should not have a negative implications to the TCO.
		The benefit result from the avoidance of a cost
	Cost/Income	The benefit should not have a negative implications to the TCO.
		The benefit is landed to if there is no reference or historical data measure the spend against
	Capital	The benefit should not have a negative implications to the TCO.

The current process

Benefits are measured and reported in monetary value within Company X. The calculated benefits are reported to senior management of the company at the end of each fiscal year and it is therefore used to make future business decisions. These benefits achieved are also a key performance indicators used to evaluate the Strategic Sourcing department of Company X.

Each commodity sourced strategically is sourced through a sound sourcing plan derived by a Technical Specialist. This plan ensures that the input stage of the proposed model under Figure 1 filters all non-strategic benefits. The purpose of the Strategic Sourcing plan is to describe the company's short term and long term objectives for the following Market Research and Supplier Selection, Total Cost Improvement, Quality, Delivery, Inventory and Supplier Relations (Bendorf, R. 2008: 1).

Strategic Sourcing benefits are audited at the end of the financial year and sometimes the following concerns are identified:

- The savings being reported do not qualify as a benefit resulting from Strategic Sourcing;
- Correct processes were not followed to report savings as Strategic Sourcing benefit;

- The current model for SS does not have enough detail to clarify benefits reporting processes.

While this is a concern for Strategic Sourcing and for the company as a whole the problem extends to the following:

1. A possibility of other benefits that are not reported by Strategic Sourcing and
2. A possibility of opportunities to realise benefits missed by Strategic Sourcing and the business owner.

Research objectives and questions

Strategic Sourcing delivers a range of benefits to the company and this paper looks at improving the practice approach for measuring and reporting of benefits of Strategic Sourcing of Technology within Company X.

The key research question posed was: “What are the best methods of measuring the value-add of strategic sourcing of technology within Company X?”

This question resulted to the formulating of the other secondary questions below:

- Are there any benefits of Strategic Sourcing that are not measured through the current system by the SS teams?
- What are the key principles / ground rules for reporting benefits that need to be applied in Company X?

PROPOSED MODEL OR CONCEPTUAL METHOD

Through the in-depth literature review a range of levels of required capacity and activity was identified towards the effective functioning of the SS Department within Company X. In such a scheme we consider theoretical overarching goals of an SS Department, the process of reporting benefits as well as supporting systems within the organisation (Figure 2).

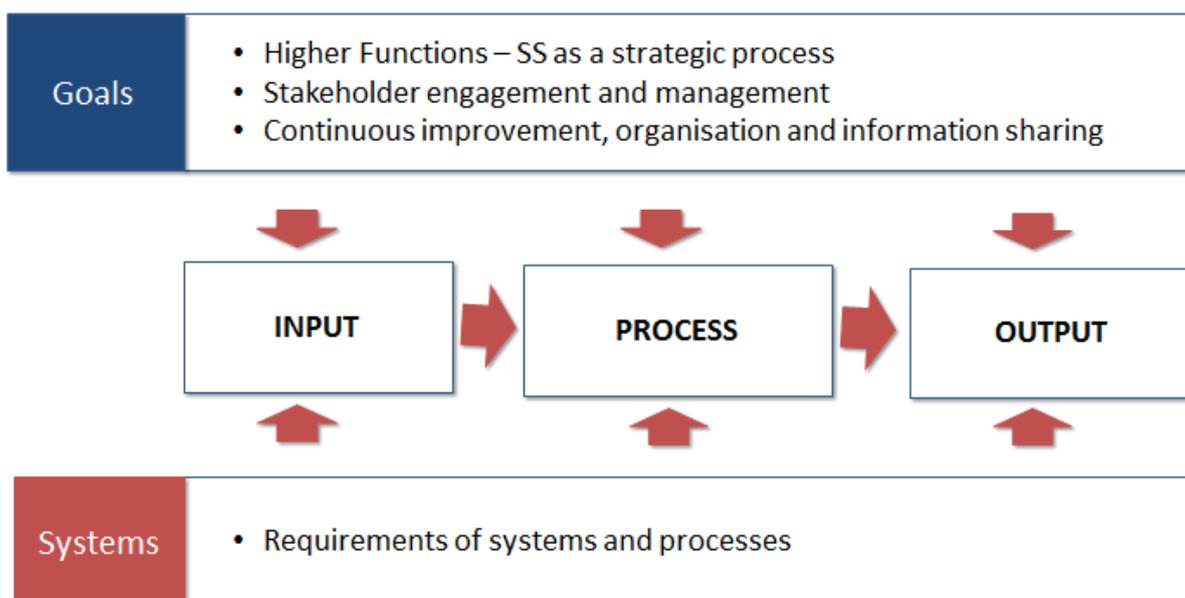


Figure 2: Components of the effective reporting of benefits

We argue that a solid framework towards the effective reporting of benefits and to that end to have impact on the organisation requires capacity and recognition of the role of SS within the organisation on a number of levels:

- Higher Functions of SS as a strategic activity for the organisation includes the recognition of management of the crucial role of the department and its role in implementing the company's overall business strategy;
- The engagement of relevant individuals and stakeholder throughout the process pertains to ensuring appropriate stakeholders are engaged in throughout qualifying, quantifying and reporting benefits;
- Ensuring that SS plays a role in the actual implementation to result in continuous improvement and is implemented to the end of sustaining competitive advantages;
- Ensuring that appropriate support systems and processes are in place in the organisation to ensure accurate and timely reporting of benefits.

As the process of reporting is the key focus of the study we unpack the proposed changed Input/Process/Output sequence in more detail below. This model is derived from the theories in the literature review in the public space and manuals within Company X.

Input/ Process / Output

The above discussed attributes to of a good measurement process is a missing link in the current benefits reporting system employed by Company X. The conceptual model in Figure 3 below addresses the aspects that led to unsatisfactory measures of reporting benefits.

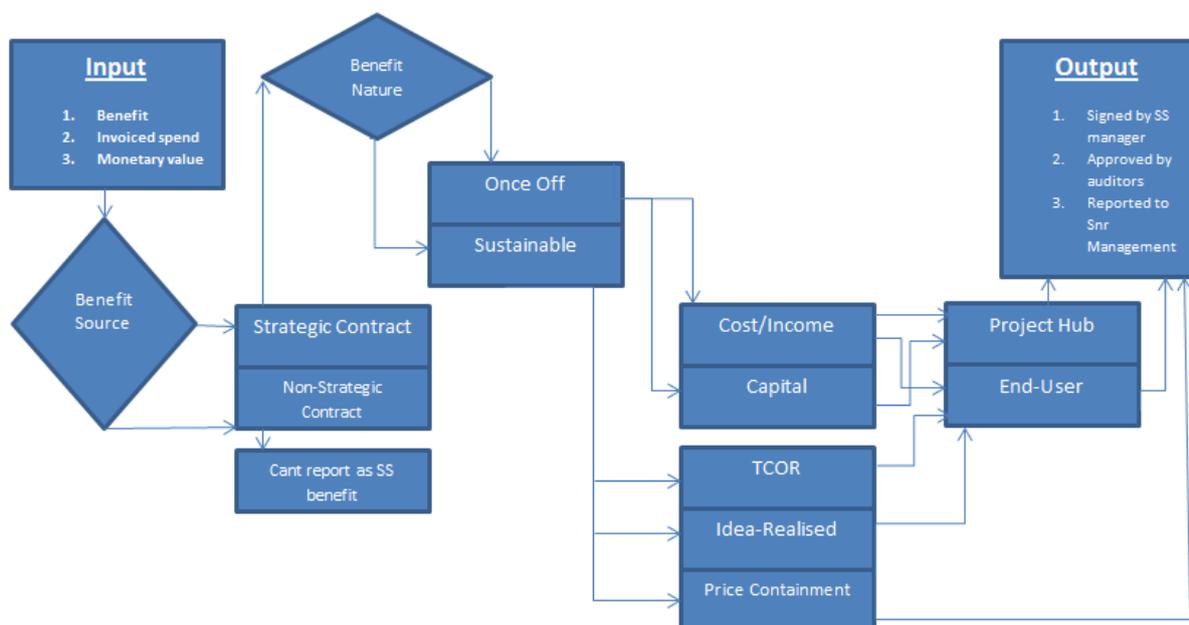


Figure 3: Authors model to improve reporting process for SS benefits.

Crafford (2010) and Chenoweth (2001) revealed that Strategic Sourcing of Technology can only be done effectively if all the parties involved in the technology lifecycle are involved at the appropriate stages of the commodity's lifecycle. Van Wyk, R & Crafford, J (1999) also revealed that managing the

commodity on TCO basis requires a thorough understanding of technical aspects of the technology and requires practice of good habits and commercial specialist's participation.

Through the above information and after a detailed review of internal processes within Company X the author proposed a model that completely moves the ownership of certain benefits from the Strategic Sourcing to the appropriate owner of the benefit, which could either be the Project Hub or the End-User. Strategic Sourcing will still own and report Price Containment benefit and assist other benefit owners in reporting the benefit to senior management.

The literature also revealed that only benefits from the Strategic Sourcing initiatives must be reported as Strategic Sourcing benefits, which was not the case within Company X. The proposed model filters out the benefits from non-strategic initiatives. This ensures that the Strategic Sourcing department efforts are reflected as they are and non-performance is not covered by reporting benefits from non-strategic initiatives. This ensures that Company X is moving towards a best practice approach for measuring and reporting benefits of Strategic Sourcing of Technology.

The input into the model was modified based on the new information resulting from data gathering. They are three identified requirements for a benefit to qualify to go through the model steps:

1. It must be qualified as a benefit: The first requirement for a benefit is such that it must add value to the business to qualify as a benefit.
2. Quantification of benefits: Strategic Sourcing initiatives add value in different formats within Company X i.e. improving product quality and/or increase uptime. These efforts need to be reported as a benefit but they must be in monetary value. It is a responsibility of a Technical Specialist, together with the stakeholders, to find ways and means to report these efforts in monetary value.
3. It must be claimed from money already spent and invoiced: The literature revealed that it could be a benefit to strategic sourcing to report price containment benefits just after concluding the contract. This was proposed based on the fact that strategic sourcing does not need to spend time on already identified opportunities but must be looking at new opportunities. The research highlighted that this will result in poor contract management and might also result in above market spending since there will be less concentration on price containment.
4. Must support wider decision-making: The data gathered highlighted that the benefits model is not only there to defend Strategic Sourcing value proposition but to help the company make sound decisions with the future and direction of the company by highlighting areas where a company is saving money and areas where the Company X spends above average.

The proposed model is supported by the ground rules outlined below. This specifically pertains to reporting lines and shared responsibilities within the process of defining targets and reporting on savings.

- Ground rule 1: The benefit is not only owned by Strategic Sourcing department but also the End User:
- Ground rule 2: Total Cost of Ownership Reduction targets are set by both the End User and Strategic Sourcing Specialist.

- Ground rule 3: Idea Realised benefits are fully executed by End User. Strategic Sourcing only assist the End User to report the benefit.

METHOD

A qualitative research method was employed in this project through which the authors aimed to develop an in-depth understanding of the various processes and methods required to more accurately report on benefits for strategic sourcing projects. Action research principles were implemented in the primary research process in order to ensure that the derived model and proposed theories are proved through action and reflection, in participation with others.

A set of interview questions was prepared to gather technical information required to extract value in Strategic Sourcing of Technology. Technical Specialists were interviewed to gather the required technical data to improve the processes of reporting benefits and to understand what processes are followed to report benefits of Strategic Sourcing within Company X. Nine out of ten (90%) Technical Specialists that agreed to be interviewed participated in the interview process

Reporting of the benefits of Strategic Sourcing requires the involvement and contribution of non-technical personnel as well. Research questionnaires were prepared to gather non-technical data that can contribute towards improving the reporting of benefits of Strategic Sourcing of Technology in Company X. A total of 11 non-technical personnel in the Strategic Sourcing Department were identified with six individuals responding (55%). The outcome of this data gathering process was tested on two Strategic Sourcing contracts i.e. Transmitter contract and the Process Automation Contract, and benefits were reported.

The table below further illustrates the sources of the gathered data and their roles and responsibilities within Company X. The experience of these personnel was adequate enough to be able to deduce theories from the data gathered.

Table 4: Data gathering and instruments.

	Data Source	# interviews completed	Research Instrument	Roles
1	Technical Specialist	9	Structured Interviews – To reveal the necessary technical knowledge required to better manage technology and report benefits.	Technical Specialists are technical people with a vast knowledge and understanding of the technology. Technical Specialists are responsible to identify opportunities and report benefits.
2	Strategic Sourcing analysts	2	Research Survey – To gather information on best practices of Strategic Sourcing within Company X in the market.	Analysts are responsible for administration of all Strategic Sourcing activities.
3	Commercial Specialist	9	Research Survey – To gather information on best practices of Strategic Sourcing within Company X and in the market.	Commercial Specialists are responsible for all commercial activities in Strategic Sourcing.

The proposed model was tested on two strategic sourcing contracts with high value and high criticality in plant operation; this was a Pressure Transmitter contract and a Process Automation contract.

RESULTS AND ANALYSIS

The following principles for computing benefits from Strategic Sourcing have been deduced from the in-depth interviews and from the research survey and the new ground rules developed.

Factor 1: Higher Function – Strategy

There is no proper management of process of nominated suppliers by the end users.

The research revealed that even though there is a comprehensive strategy that must be followed for all strategic commodities the process of nominating suppliers by the end users negate the strategy. End-users use their preferred suppliers through the process of nominated suppliers thus drifting away from the strategy and making it difficult for a strategy to results benefits.

Factor 2: Engagement of relevant individuals and stakeholder throughout the process

Continuous stakeholder management is important in the process of setting and reporting benefits in all commodities

All Technical Specialists emphasised the importance of involving the BUs through Technical Forums. The needs and best practices of the BUs are discussed in these forums and a plan is drawn to address those needs, be it either short term or long term.

There is no appropriate or thorough involvement of the Business Units (BU) when setting targets at the beginning of each fiscal year.

The research revealed that all Technical Specialists involve the BU's to identify possible savings but there was little involvement from that BUs when setting targets for the benefits. Of all the Technical Specialists interviewed, only one of them sets targets together with the BU's.

Factor 3: Realising benefits:

Seven out nine Technical Specialists mentioned that the methodology of calculating Total Cost of Ownership benefits is not applicable to some of the commodities. Enforcing this methodology to the Technical Specialists is the cause of most of the findings during audits.

A detailed spend analysis is the most appropriate and effective way of identifying opportunities for realising benefits.

All Technical Specialist are relying on historic spend analysis to identify opportunities. Six out of nine (67%) Technical Specialists emphasised analysis of the previous year's spend but the other three (33%) did an analysis going 3 or 4 years back to analyse history.

For Electrical and Mechanical commodities, a detailed understanding of a commodity's lifecycle results in understanding of costs relating to the commodity.

The improved lifecycle costs model depicted on figure 7 shows how to baseline costs for the lifecycle of the technology and align the costs accordingly.

Seven out of nine (78%) Technical Specialists interviewed predict their yearly spend through detailed understanding of the technology. The technology lifecycle is used to predict spend and plans are put

in place to contain such expenditure. The Technical Specialists highlighted that lifecycle costs of technology can be predicted from the Technology Sourcing stage through the use of the formula and the model on figure 7 below.

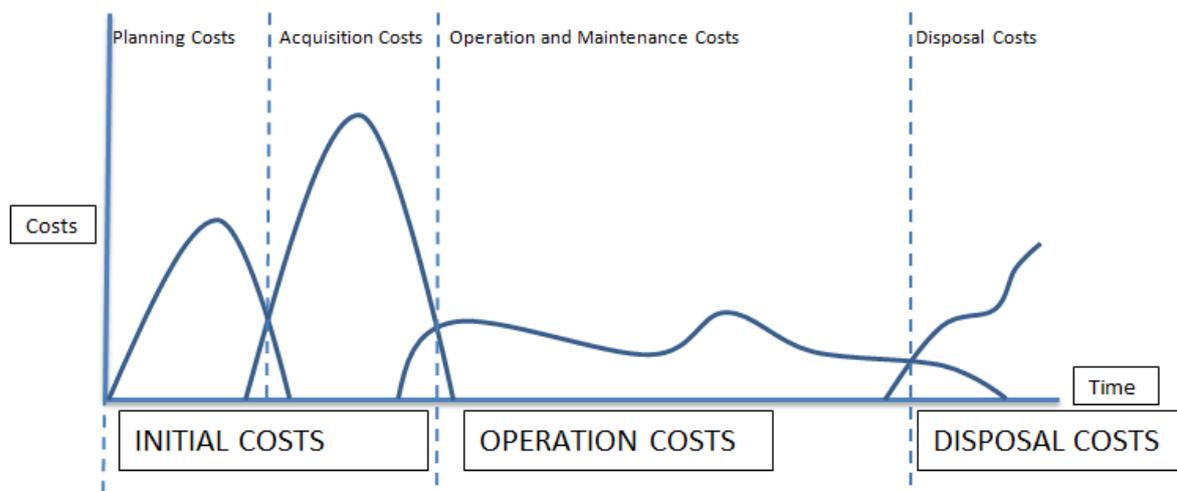


Figure 4: A modified lifecycle costs model

$$LCC = P + \sum_{j=1}^n U_j + D$$

Equation 1: Lifecycle Costs calculation formula

Where: LCC = Lifecycle Costs

n = number of years the technology is on operation

P = Initial costs.

U = Sum of operating costs (annually).

D = Disposal Costs

Strategic Sourcing does not only yield monetary benefits but it also yield benefits such as improving plant uptime. These benefits can be reported but they need to be converted to monetary value add through auditable economics model.

This statement was deduced after all those who participated in the survey mentioned other benefits produced by Strategic Sourcing. They also highlighted the difficulty of reporting these benefits if not in monetary value. Through economics calculations all value add can be converted into monetary value.

Even though Strategic Sourcing benefits can be calculated based on the value of the contract and before any take-off's from the contract, it is not recommended for Company X to report benefits at this stage due to the possibility of poor contract performance monitoring.

All the returned survey questionnaires pointed out that even though the literature revealed that some of the companies report benefits after drafting the contract this is not a good practice and

won't benefit Company X. A risk of poor contract performance monitoring is far greater than the possible benefits.

Factor 4: Supporting systems

All Technical Specialists highlighted the difficulty of estimating the future expenditure due to unavailability of reliable database with respect to the installed base. The research revealed that poor document management has resulted in a loss of critical data that could have been used to understand the following:

- a) The number of equipment in the plant.
- b) The age of the equipment in the plant.
- c) The previous maintenance that has been carried out

The above mentioned resulted in inaccurate benefit estimation and calculation.

CONCLUSION

From the research project the following key findings can be drawn:

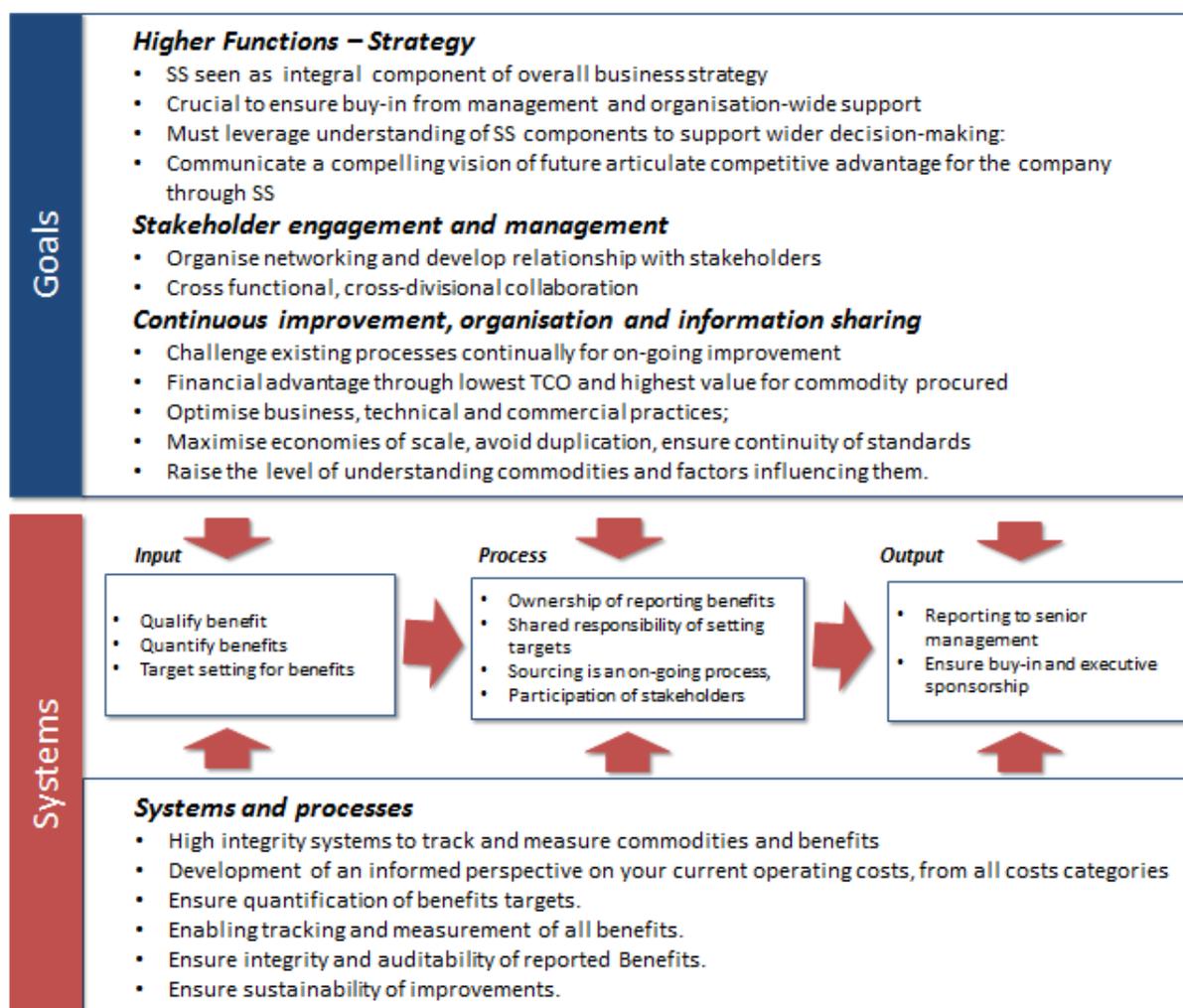


Figure 5: Key factors for implementing Strategic Sourcing in Company X

Factor 1: Higher Function - Strategy

- a) Strategic Sourcing's value proposition is to support the company make sound decisions with future and to direct e.g. the company's procurement and maintenance functions with up to date information on savings and spend.
- b) The research revealed that Strategic Sourcing benefits can only be achieved through the combined efforts of the business units that own the technology and the strategic sourcing department.
- c) The research also revealed that appropriate management of practices and policies of Strategic Sourcing through standardisation and governance, as is the case in Company X, will result in auditable monetary benefits.
- d) Nominated suppliers should be approved by the Strategic Sourcing department. This will ensure that reason for nominating the supplier are documented and if need be the comprehensive strategy is amended accordingly.
- e) Only suppliers with the existing installed base can be nominated outside the comprehensive strategy. All new suppliers must follow the normal procurement process and approved by the supplier optimisation forum.

Factor 2: Engagement of relevant individuals and stakeholder throughout the process

- a) Strategic Sourcing Technical Specialists require a detailed understanding of their commodities and must have working experience that enables them to identify opportunities for savings;
- b) The composition of a team of individuals that have technical, supply-chain and procurement and sourcing expertise and responsibility in the company is a requirement to ensure a balanced skill-set for identifying and realising benefits.
- c) Stakeholder engagement mechanisms such as commodity specific Technical Forums within the company could play an important role to ensure Strategic Sourcing value release.
- d) All commodities require a development and execution of an appropriate stakeholder management strategy for better engagement with the key stakeholders.

Factor 3: Realising benefits:

Implementation of the improvements below will ensure continuous value add of Strategic Sourcing of Technology within Company X through if:

- a) On Total Cost of Ownership (TCOR) benefit a full transfer of ownership of the benefit to the end-user is required.
- b) For TCOR benefit there is a great need for a detailed definition and scoping of activity adjustment requirements.

Factor 4: Supporting systems

In order to improve towards a best-practice approach for measuring and reporting benefits of Strategic Sourcing of Technology in Company X, it is recommended that the following be put in place:

- a) Developing an up to date database of the installed base of all the technological commodities managed strategically within Company X.
- b) Further research how best Company X can use Activity Based Costing model and Lifecycle Costs model on Electrical and Mechanical commodities to predict costs and identify saving opportunities.

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