A SIMULATION APPROACH TO THE EVALUATION OF SHARED SERVICE CENTRES

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ABSTRACT

There is evidence that a lot of multi-nationals and other governmental companies have embarked on designing and building shared service centres.

There are both costs and benefits associated with the establishment of Shared Service Centres. Organisations are better served to ensure that they employ the best and most practical models to achieve their aims.

Various models have been used to enumerate the benefits and costs of Shared Service Centres. However, there is not enough research using alternate methods such as System Dynamics (SD) modelling in evaluating Shared Service proposals.

There is a case to use an SD perspective as this is a less expensive and comprehensive way of evaluating a shared service proposal.

This research attempts to explore how an SD model can be developed and used as an inexpensive but effective way of complementing current approaches in evaluating an SSC proposal.

1. Introduction

1.1 Context of the Study

A Shared Service Centre (SSC) is: “A business unit that performs administrative transactions for numerous divisions or subsidiaries of the same company, rather than having those transactions conducted in every division or subsidiary”. Deloitte Consulting (2003).

In essence a shared service provides back office functions such as finance and accounting/payroll /HR services. Shared Services are consolidated within one area to enhance service delivery (Longwood & Harris, 2007; Quinn, Cooke, & Kris, 2000; Ulbrich, 2006).

This definition has been buttressed in different ways by other writers and consultants such as Arthur Little (2005); ACCA (2002); Bearing Point (2007),Borman, M and Janssen, M (2013).

The primary motivation for having Shared Services are to reduce costs, improve processes, reduce headcount and also to be more customer focused; ACCA (2002), PWC Austria (2011), BearingPoint (2007), Bangemann (2009),Begeron (2003), Schulman et al (1999) and SAP (2004).

1 SD implies system dynamics and both are used interchangeably in this paper.
The advantages of SSC’s\(^2\) include; Process standardisation, information consistency etc. The disadvantages include: high staff turnover and difficult staff motivation; ACCA (2002).

1.2 What is the Problem?
- Current approaches for the design and build of SSC’s compartmentalises the SSC model into various stages; PWC Austria (2011), BearingPoint (2007).
- Although, projects can be done in stages, the current existing literature review supports the notion that current approaches do not provide a holistic view of the interdependencies amongst all the various stages of the design and building of SSC’s (See also 1.5 below).

1.3 Why is it a problem?
- The payback time for an SSC can be as long as four to six years and it is important that organisations are very clear about their strategy and potential costs before they embark on the project ACCA (2002).
- The underestimation of the demands and requirements of large complex projects such as an SSC can have unintended consequences, on employee morale, customer relations etc.; (Sterman 1992), (UK National Audit Office (2008, 2011).
- Current “traditional” Investment appraisal methods do not lend themselves to the measurement of other benefits (Kennedy 2003) associated with SSC’s.

1.4 Research question and objectives
The main aim of this research is to explore how an SD\(^3\) model can be developed and used as an inexpensive but effective way of complementing current approaches in evaluating an SSC proposal (See 2 below for further discussions). There are 6 main objectives in this research work which are enumerated in section 2 below.

1.5 CURRENT LITERATURE/THEORY
The current literature shows that current SSC models use a phased approach for the design and building of an SSC. What this implies is that they do not take into consideration (or to a lesser extent) the interconnectivity between/among the various stages. Thus there is a need to have a holistic view of the SSC architecture. The table below shows the gap analysis, identified in the current literature.

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\(^2\) SSC’s implies Shared Service Centres and both are used interchangeably in this paper.

\(^3\) SD implies system dynamics and both are used interchangeably in this paper.
1.6 Why SD can be used

- There are many models relating to SSC’s but there is very little that defines SSC’s from a system dynamics perspective. SD provides a holistic and systematic approach to understanding dynamics within a system (Oliver et al 1997).
- In addition the reasons given under 1.3 above “why is it a problem” supports the use of SD as a tool.

1.7 Overview of Research Methodology (Paradigm. Methodology, Methods- See 4.2 below )

This research uses an interpretivism approach (Research Paradigm), Case Study research is used (Research Methodology) and the Research Method (Techniques) is divided into 3 phases. This paper discusses the results related to the initial pilot study in phase 1.

The criteria below are used to judge the quality of the research design. The research design was modelled on Yin (2009) and Farquhar (2012) suggestions.

<table>
<thead>
<tr>
<th>CRITERIA FOR JUDGING THE QUALITY OF THE RESEARCH DESIGN</th>
</tr>
</thead>
<tbody>
<tr>
<td>TESTS</td>
</tr>
<tr>
<td>-------</td>
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<tr>
<td>Construct Validity</td>
</tr>
<tr>
<td>Internal Validity</td>
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<tr>
<td>External Validity</td>
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<tr>
<td>Reliability</td>
</tr>
</tbody>
</table>

1.8 UNIT OF ANALYSIS AND CASE STUDY CHOICE

The unit of analysis was a major multi-national company that had or had embarked upon multiple shared services in Europe and also around the globe.
1.9 Initial Work undertaken
A pilot study (phase 1) was undertaken where 3 experts from this organisation provided responses to a questionnaire.

1.10 Initial Findings and Conclusion
The findings supported some of the theoretical assertions in the literature review, such as
1. Motives/reasons why the SSC was established
2. Phases of the SSC
3. Furthermore it also supported the impact of certain variables on the design of the SSC using a causal loop diagram (CLD) as designed by the researcher using his mental modes/literature review.
4. However it also identified the need to look at the establishment of the SSC from a holistic perspective and this is where the System Dynamics (SD) approach will be deployed.

2. Aims and Objectives.

The main aim of this research is to **explore how an SD model can be developed and used as an inexpensive but effective way of complementing current approaches** in evaluating an SSC proposal.

2.1 Objectives
This aim is accomplished via the specific objectives listed below

- **OBJECTIVE 1**: To understand the factors and variables that impact on the design/build of an SSC using current SSC model approaches (SSC Life cycle).

- **OBJECTIVE 2**: To discover whether an SD model has been used in the design of the SSC and whether it was beneficial.

- **OBJECTIVE 3**: To explore how an SD model could be potentially developed and used as an inexpensive but effective way of complementing current approaches.

- **OBJECTIVE 4**: To understand the reasons/motives of why the SSC was established and whether the benefits envisaged have been achieved.

- **OBJECTIVE 5**: To discover whether the benefits envisaged using current approaches (SSC life-cycle phases/stages) have been achieved.

- **OBJECTIVE 6**: To add to the existing SSC literature

2.2 System Boundary and time horizon
- The system boundaries being studied are SSC’s that have already been established.
- The time horizon of the case study is up to 18 months from the SSC conceptualisation, design and build to implementation/post implementation.
2.3 Research Question
How can an SD model be constructed that can complement (offer advantages over) current approaches in the evaluation of a Shared Service proposal?

2.4 Research Strategy
Case Study (exploratory) is the strategy used in this research.

2.5 Outcome of the research - Who are the potential beneficiaries
- These are public and private sector organisations, including the unit of study that are considering embarking or have embarked on establishing an SSC.
- The research is expected to help provide a variety of policy intervention tool(s) for supporting decisions regarding the establishments of SSC’s.
- This research work will also add to the limited body of research regarding the investment appraisal of SSC’s using system based approaches.

2.6 Research Contribution to Knowledge. This research will contribute to knowledge by providing a model that can be used as an inexpensive but effective way of complementing current approaches in evaluating an SSC proposal. In addition by taking the SD technique and applying it to the area of SSC’s, contribution to knowledge is facilitated. This will also contribute to the existing body of literature as there is not enough literature written about SSC’s; Janson et al (2006); Rohith (2013).

3. Literature review

3.1 Shared Services Architecture
What is a Shared Services and why do we have them? See Section 1.1 above.

3.12 SSC’s application in private and public sectors

SSC’s have been applied in both private and public sectors. According to Bergeron (2003) about half of all fortune 500 companies have established a form of SSC

Shared Service models
There are 3 main Shared Services models; PWC Austria (2011). These are Regional, National and Global.

STAGES OF THE SSC
There are 5 basic stages (including the management review) in the design/implementation of a shared service centre; PWC Austria (2011), BearingPoint (2007), Bangemann (2009), Deloitte (2011). These are shown in the diagram below
The Opportunity Assessment Phase defines the main base line for which the activities will be undertaken including the business case etc. This normally takes about 3 months.

Management Review allows management to review and provide authorisation, project funding, etc.

The Design and Pilot Project, is the stage where detailed analysis, such as operating procedures, required staff levels; etc. are carried out. This normally take about 6-8 months.

Implementation and Rollout phase is the phase where the entire plan is rolled out to the organisation. This phase is determined in The Opportunity Assessment Phase.

The optimisation phase is the phase that involves the continuous improvement of the shared services, technologies and re-engineering of the processes.

The above model is similar to various models used by Bearing Point (2007), Deloitte and Touché (2005), Bergeron (2003), Bangemann (2005) and various other management consulting companies.
3.2 Benefits and disadvantages of SSC’s

Benefits

PWC Austria (2011); JP Morgan Chase (2004) ACCA (2002), Janssen et al (2006); identify the benefits of Shared Service Centres as

- Involving a clear separation of responsibilities
- Effective Quality assurance
- Standardisation of processes
- A definition of acceptable quality standards
- Clearly defined customer supplier relationships based upon service level agreements
- Consistency of information
- Performance and control management via service level agreements
- Improved decision making

SAVINGS POTENTIAL

On average there are considerable savings that can result from having a shared service center PWC Austria (2011). This is shown in the Table 2 below

<table>
<thead>
<tr>
<th>Business Function</th>
<th>Finance</th>
<th>Human Resources</th>
<th>Procurement</th>
<th>IT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target Costs</td>
<td>0.50%</td>
<td>0.20%</td>
<td>0.20%</td>
<td>0.60%</td>
</tr>
<tr>
<td>Median</td>
<td>1%</td>
<td>0.40%</td>
<td>0.30%</td>
<td>1%</td>
</tr>
<tr>
<td>Lowest Quartile</td>
<td>1.6%</td>
<td>0.90%</td>
<td>0.50%</td>
<td>2%</td>
</tr>
<tr>
<td>Savings Potential as a</td>
<td>30-50%</td>
<td>30-50%</td>
<td>25-40%</td>
<td>25-40%</td>
</tr>
<tr>
<td>Percentage of Total Costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SSC Disadvantages

Disadvantages of Shared Service Centres according to the ACCA (2002) include

- High Staff Turnover
- Culture and Communication challenges
- Challenges with motivating staff
- Lack of proper Plan implementation and management (The UK National Audit Office in 2008).

3.3 Areas of applications

The main areas of application include the following


3.3a Summary of Key criteria/variables in shared service centres

The literature review shows that the SSC models have certain common characteristics. These are Cost reduction and the aim of developing efficient processes. Therefore it is argued that the main tenets (characteristics) of the shared services are but not limited to (below)

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4 Source: PWC Austria (2011)

### Area | Activity
--- | ---
Selection of Service delivery model | Understand risks and benefits including the value chain of the organisation
Critical Success Factors | Vision, Strategy and Senior Management Support
SSC Phases (Stages) | Feasibility Stage, Design & Build, Pilot and Implantation /Post Implementation

#### 3.4 Weaknesses in current SSC models

See Sections 1.2 (What is the Problem) and 1.3 (Why is it a problem) above.

#### 3.5 The case for viewing SSC’S as Enterprises that create value and as systems

Given the current weaknesses inherent in the design and build of SSC’s it is argued that SSC’s should be viewed as systems that help organisations to achieve their aim of maximizing shareholder value etc. Models such as Michael Porter (1985) and the Enterprise Lifecycle (US Treasury 2000) are relevant in this respect.

**Porter’s (1985) VALUE CHAIN ANALYSIS**

It is argued that the ultimate aim of SSC’s are to provide value for their shareholders/owners or enterprise. They deliver this by meeting customer requirements etc. It is thus argued that there is a value chain associated with the creation, implementation and operation of an SSC. Porter’s (1985) value chain depicts this clearly by arguing that all the various parts (primary and support activities) acting together provide or create value for the organisation. It is thus argued that this is applicable to SSC’s.

**Enterprise Lifecycle (ELC)**: The ELC (2000) opines that a life-cycle implies reviewing the system from beginning to end. Understanding these attributes helps to understand the system better and allows for designing, building and implementing a better enterprise

**WEAKNESS OF THE ENTERPRISE LIFE CYCLE**

Although the enterprise life cycle (ELC) lists out the variables of what drives the enterprise, it fails to look at the interdependency within the system. By using system thinking tools such as causal loop diagrams (CLD) one is able to better understand the ELC.

#### 3.6 Organisations as systems.

To understand the system we need to understand the linkages among the various components of the system. It is only by doing this that we are able to prescribe better solutions for the system. Thus all the inputs, outputs, processes and feedbacks must be understood. (Clipper Organisation Solutions (2012))

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3.7 Strategy and Planning phase is important

To achieve an effective SSC, it is argued that strategy is key. Getting the strategy and planning right will help ensure a positive plan, design and execution.

If the strategy is wrong, it can have disastrous consequences for the organisation in terms of costs etc. Strategy sets out what direction and what the organisation needs to do; Grant (2005); Koch (2006). Kaplan et al (2004) uses the concept of the balanced scorecard, saying that Strategy can be measured. It is only by having a defined measurable strategy that the organisation can achieve its goals. They advocate that successful strategy execution involves 3 components

“**Breakthrough results = Describe Strategy + Measure Strategy +Manage Strategy**”.

According to them “you cannot manage what you cannot measure”

They use strategy maps to depict the relationship between strategy and the common elements.

It is clear from the above discussions on strategy that an effective Strategy is key to delivering the SSC architecture.

3.8 A case for Systems Thinking

The above models support the view that to understand organisations one needs to examine the whole system and not only the individual parts. This enables one to design/build a better organization that creates value.

However these theories do not comprehensively address the cause/effect relationships within the system that can help explain and refine the system better. SD can help with this.

3.8a System Dynamics

System Dynamics operates on the feedback and control approach, i.e. the system feeds back information and the information is used to control the entire system.

Sherwood (2002) has argued that “systems display characteristics that are properties of the system as a whole and are not characteristics of any of the individual components. Since these special properties exists only at the system levels no amount of study of the component parts can identify their existence”

System Dynamics operates on **2 basic tenets, which are** a pair of ideas

**a. Information and resources**

This is fundamental to system dynamics. Information is the non-physical means as compared to resources, which is physical. Resources are for example the products for a manufacturing company (physical) and Information is the basis by which the decisions on how best to optimise the resources or transform the resources are used.

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7 See Appendix A for a description of hard and soft models.
b. Rates and levels (Flows and stocks)
Rates refer to the flow of resources within the system, which may give rise to an increase in the levels of the resources.

Forrester (1961) is the originator of the ideas of Systems Dynamics (SD). Other writers such as Wolstenholme (1982), Meadows (1972), Sterman (2000) have developed and used the tools and model types of SD.

3.8b CAUSAL LOOP DIAGRAMS⁸ (CLD)
According to Sterman (2001), “to improve our ability to learn about and manage complex systems, we need tools capable of capturing the feedback processes, stocks and flows, time delays, and other sources of dynamic complexity. The tools must also enable us to understand how these structures create a system’s dynamics and generate policy resistance. They must help us evaluate the consequences of new policies and new structures we might design. These tools include causal mapping and simulation modelling”.

CLD’s (Causal Loop Diagram’s) are a means to show feedback structure within systems and system thinking helps us to simplify the complexity of real systems which evolve overtime Sterman (2000); Sherwood (2002). This helps to explain and predict the current and the likely future.

Understanding the chains of causality and the cause and effect relationships between/among the various variables within the system is key. A Causal Loop Diagram can be used in this respect.

3.9 Gap Analysis
It is clear from the above discussions that System Dynamics can assist in structuring and understanding organisations as systems. The diagram below shows the gap analysis identified in the literature review which supports the notion that SD can be used in the SSC architecture. Figure 2 below depicts the Gap Analysis.

Figure 2

<table>
<thead>
<tr>
<th>Issue</th>
<th>Description</th>
<th>GAP analysis</th>
<th>System Dynamics (Causal Loop Diagram)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Current models use a more phased approach in the SSC Architecture framework. In effect a compartmentalisation approach is used.</td>
<td>To understand the SSC Architecture framework better it is argued that a systemic approach is used. This is where System Dynamics can be valuable</td>
<td>It has been argued that in order to understand the impact of organisational design, organisations should be viewed and analysed as systems since they are involved in value creation</td>
</tr>
<tr>
<td>Description</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Who</td>
<td>PWC Austria (2011), Bearings Point (2007) etc.</td>
<td>This research work</td>
<td>This research work</td>
</tr>
</tbody>
</table>

3.91 Justification for the proposed use of SD
- See Sections 1.2 and 1.3 above

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⁸ Causal Loop Diagrams is referred to as CLD and it will be used interchangeably in this work.
4. Research Methodology, Methods

4.1 Introduction
The basis for the methodology is derived from the objectives/propositions as espoused in section 2 above.

4.2 Overview of Research Paradigm, Methodology, and Methods
The table below shows the overview of the research approach adopted.

<table>
<thead>
<tr>
<th>Table 2</th>
<th>RESEARCH APPROACH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area</td>
<td>Definition</td>
</tr>
<tr>
<td>Research Diagram</td>
<td>Philosophical framework governing how scientific research should be conducted</td>
</tr>
<tr>
<td>Research Methodology</td>
<td>Approach to the process of research encompassing a body of methods</td>
</tr>
<tr>
<td>Research Methods</td>
<td>Broad Methods deployed to achieve the research methodology</td>
</tr>
<tr>
<td>Research Techniques</td>
<td>Techniques for data collection, analysis and knowledge representation</td>
</tr>
</tbody>
</table>

Research Paradigm: This research uses an interpretivism approach. Table 3 below summarises this.

<table>
<thead>
<tr>
<th>Table 3</th>
<th>Research Paradigm and Justification for the Interpretivism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positivism (Social Reality is singular, objective and not affected by the act of investigating it)</td>
<td>Interpretivism (Social Reality is in our minds and is subjective and multiple)</td>
</tr>
<tr>
<td>Use of Large Sample</td>
<td>Use of Small Samples</td>
</tr>
<tr>
<td>Have an artificial location</td>
<td>Have a natural location</td>
</tr>
<tr>
<td>Be concerned with hypothesis generation</td>
<td>Be concerned with generating theories</td>
</tr>
<tr>
<td>Produce precise quantitative data</td>
<td>Produce rich subjective data</td>
</tr>
<tr>
<td>Produce results with high reliability but low validity</td>
<td>Produce results with low reliability but high validity</td>
</tr>
</tbody>
</table>

9 Adapted from Collis & Hussey (2009). Note that the columns justification and conclusion are my interpretations. See footnote 4.

10 Adapted from Collis & Hussey (2009) “Business Research” A Practical guide for undergraduate and postgraduate studies. Note that the columns justification and conclusion are my interpretations.
Research Approach (Methodology)


4.3 Research Justification for the use of case study (Why the use of Case Study)

Case study (exploratory) research is relevant in this situation

- as there is a need to investigate the nature and background of why this multinational organisation embarked on an SSC;
- whether they used an SD model in their initial design and
- Are achieving the benefits as designed.
- There is also a scarcity of empirical evidence relating to SSC’s; Janssen et al (2006), Rohith (2013) thus the need for an exploratory case study.
- Furthermore one will be dealing with a complex and broad phenomenon and the current existing knowledge is insufficient and does not allow the posing of potential unstructured/causal questions; Janssen et al (2006); Collis et al (2009); Yin R.K (2003, 2009 and 2015), Farquhar (2012). We need to understand/explore the issues in the natural settings of the organisation.
- There is also a requirement to have access to in depth potential confidential/sensitive data.

4.4 Research Methods

PHASE 1:
1. Examine and review the current literature regarding the design and building of SSC’s and also system dynamics.
2. Construct a questionnaire based upon the literature review. In addition construct a CLD model based upon the current literature and the researcher’s mental modes. The aim is to validate the current existing shared service models and SD techniques as emphasised in the existing literature. The questionnaire was structured into 5 main areas that reflected the 5 objectives that were initially espoused.
3. A pilot study was undertaken with a major multinational company. The questionnaires developed were sent to 3 managers to obtain feedback. This was done in February-April 2013.
The 3 experts had a minimum of 12 years’ experience per individual and had been heavily involved in designing and implementing SSC’s at various stages. The researcher also has over 15 years of business and SSC experience.

The survey was done based upon similar surveys done by the ACCA (2002), Deloitte and Touché (2005) and the relevant literature regarding SSC’s and SD (Yin 2009).

The aim was to help operationalise the objectives. In addition it will help to select the most important candidates for the CLD and select the correct questions to be asked.

4. The results received from the survey (expert opinion) was analysed in relationship to the literature review.

**Questionnaire-design**

The methods used builds upon survey work undertaken by the ACCA (2002) and Deloitte & Touché (2005). The theoretical framework discussed in the Literature review has heavily influenced the role of the case study and research design including the questionnaire (Yin 2009). The questionnaire is structured to be able to address the specific objectives in Section 2.

**The SD modelling technique**

The model follows the basic characteristics of most SD models as defined by Oliver et al (1997) Sterman (2000).

**CAUSAL LOOP DIAGRAMS**

The dynamic characteristics of the system are defined through the qualitative modelling process using causal loop diagrams which applies logical descriptions of cause and effect.

**SOFTWARE**

The SD software “Vensim” was used for the CLD diagram. The SPSS software was used to analyse the descriptive characteristics of the survey/questionnaire response.

4.5 Criteria for judging the quality of the research design

The following 4 tests as identified by Yin (2009), Farquhar (2012) were used to judge the quality of this research work.

- Construct Validity- correctly identifying the operational measures for the concept of study
- Internal Validity- establishing causal relationships
- External Validity- Generalisability of the study
- Reliability- Repeatability of the study

This is summarised in section 1.7 above.

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11 Adapted from Yin 2009
4.6 Ethical Considerations
The table below summarises the ethical considerations taken into account and how they have been addressed. This was addressed by obtaining

- Approval from the relevant university authorities before data was gathered
- Respondents were verbally informed and also on the questionnaire that all responses/information gathered are confidential.
- Data was kept on a safe hard disk and data is shared only on a need to know basis

4.7 SINGLE CASE STUDY
A single case study has been chosen because the study of an SSC is a typical case study and the current methodology appears to be similar for any SSC established.

In addition, the use of SD to evaluate an SSC proposal will be revelatory in nature. Yin (2009).

4.8 Unit of Analysis
A major multinational company was used.

5. INITIAL RESEARCH RESULTS AND DISCUSSIONS (LINKING DATA TO PROPOSITIONS)

The discussions are based upon the earlier objectives that were espoused and as they relate to the theory. (Yin 2009).

OBJECTIVE 1: (See 2 above) -ANALYSIS OF FACTORS INFLUENCING THE DESIGN/BUILD OF AN SSC IN RELATIONSHIP TO THE CONSTRUCTED CAUSAL LOOP DIAGRAM\textsuperscript{12}

1. **Critical Success factors**: Respondents identified the following as factors that influenced the design of the SSC. Organisational Strategy, Support from Senior executives and effective Project Execution.

2. **Impact of factors on cost of SSC**: Human Resources, Good Infrastructure and Project Management were identified as factors that impact on the cost of an SSC.

3. **Impact of factors on design of SSC**: In addition respondents identified that the SSC variables/factors such as Infrastructure, Human Resources, Project Management, Costs/Benefits, Effective SSC design and Build has an impact on the design of the SSC and vice versa.

4. **Impact of strategy design on variables/factors**: Respondents mainly identified the SSC strategy design as impacting the SSC variables/factors such as Human Resources, Infrastructure, Effective SSC design and Project Management.

5. **Impact of variables on strategy design**: Respondents identified Human Resources, Effective SSC Design and Build and Infrastructure had an impact on the initial SSC strategy design in the establishment of the SSC.

\textsuperscript{12} See Figure 3 below for the Causal Loop Diagram
6. **Impact of strategy design on other variables/factors:** Respondents identified that the initial SSC strategy design had an impact on one or more of the factors in establishing the SSC such as Costs, Effective Organisation, and Benefits.

7. **Impact of other variables/factors on strategy design:** Respondents identified that SSC Costs, Company vision and effective organisation had an impact on the initial SSC strategy design in the establishment of the SSC.

   This supports the initial argument relating to the interconnectivity (cause/effect relationship) of the variables as identified by this researcher in the CLD model (Figure 3).

   In addition this supports the variables identified by the ACCA (2002); PWC Austria (2011); Bearings Point (2007); Kaplan et al (2004) Grant (2005) that impact on the design and build of an SSC although in their models the cause and effect relationships are not clearly depicted. (See table 4 below)
<table>
<thead>
<tr>
<th>Area</th>
<th>Question</th>
<th>Factors</th>
<th>Survey Response Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Critical Success Factors</td>
<td>Que 10. Which of these areas are the most critical success factors in the design and build of an SSC in your opinion? (Select all applicable variables)</td>
<td>Other-Strategy, Support from Senior Execs and Project Execution</td>
<td>66.7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other-Strategy, Effective Project Execution</td>
<td>33.3</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>Total</td>
<td>100.0</td>
</tr>
<tr>
<td>Impact of factors on cost of SSC</td>
<td>Que 15. Please state whether any one or more of the below factors has had an impact on the costs of establishing the SSC. (HR, Infrastructure, Project Management, Effective SSC Design and Build, All of the above)</td>
<td>Human Resources, Infrastructure</td>
<td>33.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other-Infrastructure, Effective SSC Design</td>
<td>33.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>All of the above</td>
<td>33.3</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>Total</td>
<td>100.0</td>
</tr>
<tr>
<td>Impact of factors on design of SSC</td>
<td>Que 16. Please state whether any one or more of the below factors has had an impact on the benefits derived in the establishment of the SSC. (HR, Infrastructure, Project Management, Effective SSC Design and Build, All of the above)</td>
<td>Infrastructure</td>
<td>33.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other-Infrastructure, Effective SSC Design</td>
<td>33.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>All of the above</td>
<td>33.3</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>Total</td>
<td>100.0</td>
</tr>
<tr>
<td>Impact of strategy design on variables/factors</td>
<td>Que 17. Please state whether the initial SSC strategy design had an impact on one or more of the below factors in establishing the SSC. (HR, Infrastructure, Project Management, Effective SSC Design and Build, All of the above)</td>
<td>Human Resources, Infrastructure, Project Management</td>
<td>33.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other-Infrastructure, Effective SSC Design</td>
<td>33.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other-Human Resources (HR), Infrastructure, Project Management and Infrastructure</td>
<td>33.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>All of the above and Infrastructure</td>
<td>33.3</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>Total</td>
<td>100.0</td>
</tr>
<tr>
<td>Impact of variables on strategy design</td>
<td>Que 18. Please state whether any one or more of the below factors has had an impact on the initial SSC strategy design in the establishment of the SSC. (HR, Infrastructure, Project Management, Effective SSC Design and Build, All of the above)</td>
<td>Human Resources, Infrastructure, and Effective SSC Design and Build</td>
<td>33.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other-Human Resources (HR) and Infrastructure</td>
<td>33.3</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>Total</td>
<td>100.0</td>
</tr>
<tr>
<td>Impact of strategy design on other variables/factors</td>
<td>Que 19. Please state whether the initial SSC strategy design had an impact on one or more of the below factors in establishing the SSC. (Costs, Benefits, Company Goals/Values, Effective Organisation, All of the above)</td>
<td>All of the above</td>
<td>33.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Costs, Effective Organisation, Benefits</td>
<td>33.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other-Costs, Company Goals and Vision, Effective Organisation</td>
<td>33.3</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>Total</td>
<td>100.0</td>
</tr>
<tr>
<td>Impact of other variables/factors on strategy design</td>
<td>Que 20. Please state whether any one or more of the below factors has had an impact on the initial SSC strategy design in the establishment of the SSC. (Costs, Benefits, Company Goals/Values, Effective Organisation, All of the above)</td>
<td>All of the above</td>
<td>33.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Costs, Effective Organisation, Benefits</td>
<td>33.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other-Costs, Company Goals and Vision, Effective Organisation</td>
<td>33.3</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>Total</td>
<td>100.0</td>
</tr>
</tbody>
</table>

- **OBJECTIVE 2:** (See section 2 above)

Respondents had never used an SD model in any of their SSC design approaches. The main tool used was a 6Sigma project methodology. This is understandable as this multinational Group mainly uses 6Sigma as the project Management tool. However this goes to buttress the point that there is a scarcity of data relating to SSC’s Janssen et al (2006) and that SD has not been used in the design of the SSC.

- **OBJECTIVE 3:** (See section 2 above) A preliminary CLD was constructed from the relevant literature and the researchers mental modes (See Figure 3 below). Furthermore the questionnaire was used to
help document the initial understanding of the cause and effect relationships. The software Vensim was used to build the initial CLD.\(^\text{13}\)

**Figure 3**

The definitions of the loops and the logic/flows such as (BO1, R1) are defined in Figures 9 and 10 below.

**Figure 4**

\(^{13}\) A (+) sign means there is a positive relationship and a (-) sign means a negative relationship.
Respondents largely agreed with the variables selected in the CLD. This confirmed the argument in this research that it is important to understand the linkages between the variables and the system as a whole. Furthermore this to a larger extent supports the theory by Porter (1985), The Enterprise Life Cycle; Sterman (2000); Sherwood (2011); Clipper Organisations (2012).

Feedback from respondents regarding the causal loop diagram shows that there is an interconnection between/amongst the various SSC stages. For example the announcement of the setting up of the SSC led various experienced staff to leave the company, before a replacement was found.

This would have been done in phase three of the SSC stages (per the literature review), which was too late as the business suffered and more temporary staff had to be recruited, which then increased costs further in addition to the loss of vital knowledge for the organisation. The causal loop diagram that was designed clearly showed the feedback between/amongst the various variables and this would have helped to minimise this type of risk.

Also cost was mentioned as a major variable of impact (100% response rate). This will help in redesigning the CLD in the next phase of the research.

- **OBJECTIVE 4: (See section 2)**

The following reasons/motives were established by respondents as the basis for the establishment of an SSC. Political, Strategic and Organisational, and Economic. Information Technology (IT) was not a factor/motive in the establishment of the SSC.

Furthermore the savings achieved for economic, political and Strategic and Organisational goals was somewhat mixed although all respondents agreed that there was some form of savings achieved.

However in terms of achieving the initial motives it appears most of the motives were achieved. See table 7 below. However most respondents emphasised that cost (100% response rate) was an essential factor. This is in accordance with the findings of Janssen et al (2006); PWC Austria (2011), ACCA (2002), Deloitte and Touché (2005) regarding the motives for establishing
### Table 5

<table>
<thead>
<tr>
<th>AREA</th>
<th>OBJECTIVE/MOTIVE</th>
<th>WAS/THIS AN INITIAL MOTIVE</th>
<th>WAS THE MOTIVE ACHIEVED</th>
<th>WHAT PERCENTAGE OF THE TARGET MOTIVE WAS ACHIEVED</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Percentage Agreed</td>
<td>Percentage Disagreed</td>
<td>Percentage Agreed</td>
</tr>
<tr>
<td>Political</td>
<td>Involving a clear separation of responsibilities</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>Performance and control management via service Level Agreements</td>
<td>100</td>
<td>100</td>
<td>67</td>
</tr>
<tr>
<td></td>
<td>Improved decision making</td>
<td>66.7</td>
<td>33.3</td>
<td>66.7</td>
</tr>
<tr>
<td>Economic</td>
<td>Finance cost reduction</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>HR cost reduction</td>
<td>100</td>
<td>33.3</td>
<td>66.7</td>
</tr>
<tr>
<td></td>
<td>IT cost reduction</td>
<td>33.3</td>
<td>66.7</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>Procurement Cost reduction</td>
<td>33.3</td>
<td>66.7</td>
<td>33.3</td>
</tr>
<tr>
<td>Strategic &amp; Organisational goals</td>
<td>Clearly Defined customer/supplier relationships based upon Service Level Agreements</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>A standardisation of processes</td>
<td>100</td>
<td>100</td>
<td>33.3</td>
</tr>
<tr>
<td></td>
<td>Quality Assurance</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>Consistency of information</td>
<td>100</td>
<td>33.3</td>
<td>66.7</td>
</tr>
<tr>
<td></td>
<td>A concentration of the organisations main processes</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>(Key Core Processes)</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>A definition of acceptable</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>Quality Standards</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Technical motives</td>
<td>Quality IT backup</td>
<td>100</td>
<td>66.7</td>
<td>33.3</td>
</tr>
<tr>
<td></td>
<td>Access to IT facilities</td>
<td>100</td>
<td>66.7</td>
<td>33.3</td>
</tr>
</tbody>
</table>

**OBJECTIVE 5: (See section 2 above)**

- Phase 1 (Opportunity Assessment Stage). Majority of respondents claimed that this phase lasted less than 3 months; 51 to 70% of the duration was achieved on time.
- Management Review: Majority of respondents claimed that this phase lasted less than 3 months; 21 to 50% of the duration was achieved on time.
- Phase II (Design and pilot project): Majority of respondents claimed that this phase lasted more than 12 months; 51 to 70% of the duration was achieved on time.
- Phase III (Implementation and Rollout): Majority of respondents claimed that this phase lasted more than 12 months; 21 to 50% of the duration was achieved on time.
- Phase IV (Optimisation): Majority of respondents claimed that this phase lasted more than 12 months; 51 to 70% of the duration was achieved on time.

**COST SAVINGS ANALYSIS**

- The overall target cost reduction was up to 50% of current costs at the time of the transition. Given that the main activities that were moved into the SSC were finance functions, the savings achieved were somewhat mixed, ranging from less than 20% to 50%. PWC Austria (2011) asserts that the savings potential for a finance function would be 30-50% of targeted costs. Although there were savings made it is still not enough to justify the PWC Austria (2011) stance.
- In addition a review of secondary data (statutory accounts) of the organisations that were transferred showed that the savings achieved was mixed and not substantial. We can therefore say that although there were savings the results are inconclusive.
TIMELINE FOR SSC PHASES/STAGES
The opportunity assessment stage took less than 3 months and this is in consonance with the PWC Austria (2011) model.

- It is noted that the design and pilot stage took over 12 months. This again is different to the PWC Austria (2011) assertion that this stage takes 6-8 months. It may be noted that there are complexities in every organisation and this may have accounted for the difference. This again supports the notion that the multinational organisation is a complex phenomenon and supports the choice of a case study research approach and understanding the interconnections among the variables. SD technique is useful in this regard.

6. Recommendations/Conclusions and summary
The Conclusions drawn from this research is that the results obtained mainly supports the theory (ies) regarding the objectives espoused in this research.

However, there were some areas where the results did not support the theory. This was for example the IT motives, cost savings and also the Design and build stage, which took over 12 months.

This then calls for a holistic understanding of the whole SSC system and this is where SD comes into place.

The constructed Causal Loop Diagram (CLD) in this research which was confirmed by the respondents clearly demonstrates the cause/effect relationship between/amongst the SSC variables.

The lessons for Policy makers is that, it is important to understand the linkages and interconnections between/among the SSC variables in order to make informed decisions about the design and build of the SSC.

6.1 Further Research
The pilot findings provide a basis for expanding the sample size and adding more multiple sources to provide further credence to the research undertaken.

6.2 Research Limitations
Due to the nature of case study based research, the research cannot provide definitive conclusions that will be applicable in all circumstances.
Bibliography


16. Cassell Catherine (2012); What is good qualitative research?
   
   [Link](http://www.methods.manchester.ac.uk/medialibrary/docs/gqr.pdf) Last accessed 26/12/2015


20. Computing.co.uk “Cost concerns and staff loyalty deter public sector CIOs from sharing services Friday 27 May 2011 11:04
Last accessed 19/11/2011

Last accessed 19/11/2011

22. Deloitte and Touché 2005 “Shared Service in a global economy Expanding the shared services value proposition


26. Grant R. M (2005); Contemporary Strategy analysis; Fifth Edition; Blackwell Publishing.


36. Marciniak, Robert (2013); Measuring Service Satisfaction in Shared Service Organizations; In World Congress on Administrative and Political Sciences, Procedia - Social and Behavioral Sciences. 28 June 2013 81:217-223


40. McDowell J (2011); Shared services centers can drive significant savings; Healthcare Financial Management: Journal Of The Healthcare Financial Management Association; 2011 Jun; Vol. 65 (6), pp. 118-22, 124;

41. McKeen, James D.; Smith, Heather A (2011); Creating IT Shared Services: Communications of the Association for Information Systems. 2011, Vol. 29, p645-656.12p 1


49. PWC Austria (2011) Shared Service Center* "Better, cheaper, faster “Reach your goals faster through the bundling of skills


52. SAP AG 2004 “SHARED SERVICES” SAP White Paper

53. Sandelowski, Margarete; A matter of taste: evaluating the quality of qualitative research; In Nursing Inquiry. June 2015, Vol. 22 Issue 2, p86, 9 p


55. Seddon John (2008); “Systems Thinking in the Public Sector”. Triarchy Press

56. Sherwood Dennis (2002); “Seeing the Forest from the trees; A manager’s guide to applying systems thinking” Nicholas Brealy Publishing


61. Trainor, Audrey A.; Graue, Elizabeth (2014); Evaluating Rigor in Qualitative Methodology and Research Dissemination; Remedial & Special Education; Sep 2014; 35(5): 267-274. 8p.

62. Trbovich, Patricia (2014); Five ways to incorporate systems thinking into healthcare organizations; Biomedical Instrumentation & Technology, 2014 Sep 2 Suppl 2; 48 31-36. 6p


66. Wolstenholme E. F.; The Journal of the Operational Research Society; System Dynamics in Perspective ; Vol. 33, No. 6 (Jun., 1982), pp. 547-556