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The issues with transnational fast moving consumer goods supply chains originating India and South Africa

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3. RESEARCH METHODOLOGY

3.1 Investigative approach

This thesis used the following definitions for the key terms identified during the literature review:

1. Supply chain: *The linkage of strategic, tactical and operational activities dealing with the flow of goods, information and services from the supplier's supplier to the customer's customer.*

2. Supply chain goal: *To gain sustainable competitive advantage for an organisation.*

3. FMCG: *High velocity and agile industry focused on producing and selling branded goods consumed daily by consumers.*

4. Supply chain performance attributes and metrics: *As defined by SCC (2008).*

5. Standard income statement and balance sheet elements: *As defined by Needles, Powers & Crosson (2008).*

6. Transnational supply chains: *Supply chain operations beyond the geographic boundaries of a country.*

This research study used the following investigative approach, based on the research framework (discussed in section 1.7), as shown in figure 3-1.

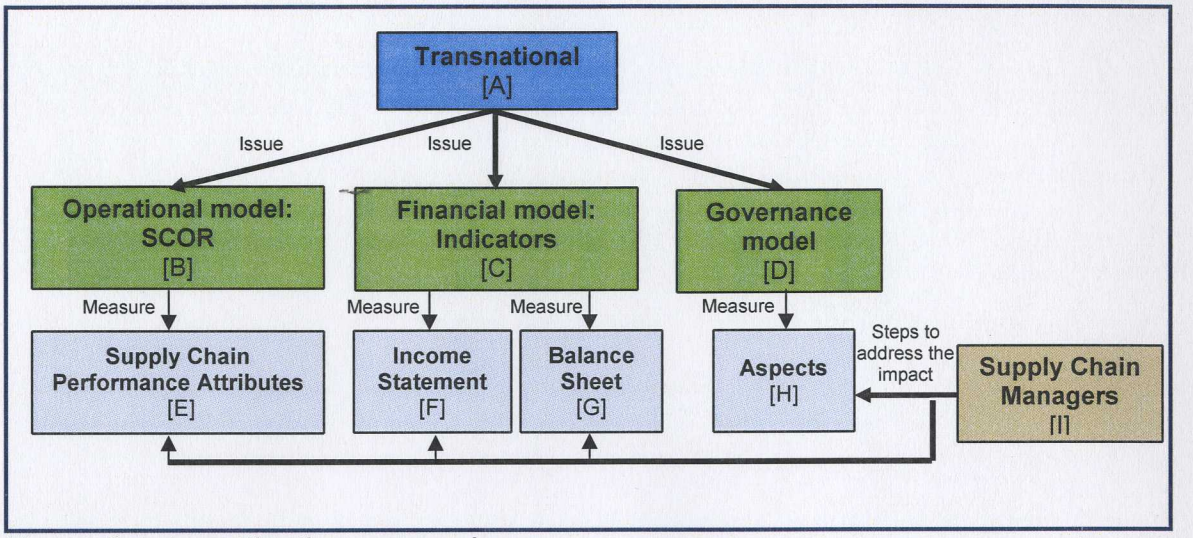


Figure 3-1: Investigative approach

The introduction of transnational elements [A] created an issue within supply chains. The issue was identified in terms of the SCOR model [B], the financial indicators [C] and the governance model [D]. The supply chain performance attributes [E] represented the SCOR model [B]. The income statement [F] and the balance sheet [G] represented the financial indicators [C]. Various supply chain aspects [H] represented the governance model [D]. The steps [I] that supply chain managers were taking to address the issues raised by the transnational elements in FMCG supply chains were identified with respect to the supply chain performance attributes [E], the income statement [G], the balance sheet [F] and the supply chain aspects [H].

3.2 Methodology

This research study used a qualitative approach to data collection. The decision to use this approach was based on the fact that it was useful for obtaining information from a real environment where the researcher had to interact with the respondents in their natural environment (Denzin & Lincoln, 2000) and where the data was not available at one place in its explicit form (Goddard & Melville, 2007). This research study also collected quantitative data to validate the findings that were obtained from the qualitative approach (Creswell, 2009). However, the primary focus was the qualitative approach.

Gillham (2000) and Merriam (2009) stated that a qualitative study was descriptive in nature. As mentioned earlier, Pirow (1994), Knobel & Lankshear (1999) and Creswell (2009) also referred to qualitative research as field research where data collection tools focused on interfacing with respondents. According to Gillham (2000:10), such methods focused on "the kind of evidence 'what people tell you, what they do' that will enable the researcher to understand the meaning of what is going on".

Based on the definitions given by Knobel & Lankshear (1999), Gillham (2000), Denscombe (2003), Yin (2003), Stacey & Whittaker (2005) and Yin (ed.) (2009) the case study research methodology was a detailed, descriptive and construal study that centred on real life contexts and relied on multiple sources of data collection.

This research study was therefore essentially a qualitative case study using data collection methods such as interviews and the study of documents, since this type of approach was most suited to answering the questions that it proposed.

This research study, in essence, used the collective case study approach. Denscombe (2003) stated that the use of multiple cases (as was done in this thesis) enabled within-case and across-case approaches to data analysis, comparison and the interpretation of findings.

Multiple sources of evidence such as industry reports, business reports, interviews, newspaper articles, internal project documents and the minutes of meetings were used in this research study. Gillham (2000:1) highlighted "the need to collect different kinds of evidence, to make the study valid and to provide the best answers to one's research questions".

3.3 Instrument

This research study used Leedy & Ormrod's (2005) approach for data collection, analysis and reporting. The collective case study approach was used to gain in-depth knowledge of the selected FMCG organisations from India and South Africa in order to compare their typology and to identify and compare the issues they faced and the steps taken to deal with these issues by FMCG supply chains in these two countries.

The study design for this research was based on multiple point contacts (Cooper & Schindler, 2008) with each of the four cases. The design focused on collecting information from face-to-face interviews and document analysis such as internal project reports, minutes of meetings, newspaper articles and business reports. Individual face-to-face interviews were conducted based on a questionnaire protocol designed to address the areas of the investigative approach and also to allow respondents to freely speak about their thoughts and share their information and insights. The interviews used in this study were characterised as being "semi-structured"[72] because they were open ended or flexible (Yin (ed.), 2009).

Some quantitative data was also collected from the documents provided by the cases, either to obtain further information related to particular issues or to validate issues or the steps taken to deal with such issues.

[72] It referred to obtaining answers to the questions in an order merely natural to the flow of conversation. The interviewee, on the other hand, had the freedom to say whatever comes to mind.

3.4 Cases

Supervisors and the first readers of the thesis proposal advised the researcher to limit the number of case studies in order to ensure that the scope of this thesis would remain within manageable limits. It was felt that a set of case studies from each of the product segments from each country would provide a comprehensive investigation of the issues facing transnational supply chain managers and the steps taken to deal with them.

A comparative set of cases were chosen based on the following criteria:

a) representation of either of the product segments and similar products

b) origin in either of the two countries

c) access to information.

Based on the first two criteria, a set of four organisations from each country was identified. This was further filtered down by the third criterion to only two organisations from each country in order to allow the researcher to conduct in-depth research and analysis. The researcher selected a set of four case studies, and one case study from each of the personal care and packaged food product segments was taken from each country. The cases are shown in table 3-1.

Product segment/ Country	Personal care	Packaged food
India	Dabur India (Pty) Limited **(Dabur)**	Surya Foods (Pty) Limited **(Surya)**
South Africa	Amka Products (Pty) Limited **(Amka)**	Anglo Vaal Industries Limited **(AVI)**

Table 3-1: Setup of case studies

3.5 Data collection

Data requirements were guided by the objective of this thesis and the corresponding investigative approach. This research study used a protocol based on the investigative approach with an open- and close-ended questionnaire to obtain the primary data though face-to-face interviews with respondents. In certain cases, audio recordings were also made of the face-to-face interviews to allow the researcher to refer to the content again at a later stage, if necessary. Secondary data was obtained from published business and financial reports, internal project reports, minutes of meetings and data from the respective information systems. Quantitative data was also obtained from the analysis of these documents.

The approach used for data collection from face-to-face interviews and analysis of documents comprised the following steps (details are presented in Appendix B):

- Identify relevant respondents and their roles in the transnational setup.
- Understand the typology of the case, obtain the functional and the structural attributes, and identify the transnational elements.
- Collect data related to the type of issues faced by the supply chain in terms of performance attributes, financial indicators and the governance model.
- Collect data related to the actions taken by supply chain managers to address the issues identified above.
- Analyse the collected data and report and interpret the findings.[73]

The researcher made five trips to India between the years 2007 and 2009 to meet with the respondents from the Indian cases, and had numerous meetings with the

[73] Details of this step are presented in the next sub-section.

respondents from the South African cases. The researcher also attended seven supply chain conferences[74] to identify recent trends in transnational supply chain management. Respondents in the following 14 positions were interviewed for each of the four cases:

a. supply chain manager/director
b. special supply chain projects leader
c. demand/supply/inventory manager(s)
d. production manager(s)
e. DC manager(s)
f. finance manager(s)
g. warehouse manager(s)
h. procurement manager(s)
i. brand/sales manager(s)
j. marketing manager(s)
k. chief information officer/IT manager(s)
l. chief operating officer/CEO
m. customer relations officer(s)
n. HR manager(s).

[74] 1. Supply Chain World Conference, Philadelphia, March 2007
2. SAPICS Annual Conference, Sun City, South Africa, July 2008
3. Supply Chain World Conference, Singapore, August 2008
4. 3rd Annual Best Practices on Demand Forecasting & Inventory Optimisation, Johannesburg, May 2009
5. CFO of the Future, Johannesburg, July 2009
6. SAPICS Summer Conference, Durban, South Africa, October 2009
7. SAPICS Summer Conference, Cape Town, South Africa, October 2009

In addition, the following documents were also analysed:

Amka:

1. planning workflow document, 2009
2. supply chain organisation structure, 2009
3. supply chain assessment report, 2003
4. SAP workflow document, 2009
5. demand forecasting setup report, 2008
6. product categorisation report, 2007
7. customer service management report, 2008
8. minutes of the meeting on demand and inventory planning, 7 February 2008
9. minutes of the meeting on S&OP, 6 June 2008.

AVI:

1. annual reports, 2006, 2007, 2008
2. integrated supply chain report, 2008
3. presentation to logistics achievers award, 2008/09
4. S&OP cycle document, 2008/09
5. demand forecasting approach document, 2008
6. inventory replenishment approach document, 2008
7. planning organisation structure, 2009
8. minutes of the meeting on supply chain optimisation, 21 May 2008
9. minutes of the meeting on supply chain optimisation, 13 September 2008.

Dabur:

1. annual reports, 2007, 2008, 2009
2. organisation structure – central, 2009
3. planning report, 2008
4. distribution segmentation report, 2008
5. customer queries report, 2008
6. international business report, 2006, 2007 and 2008
7. newspaper reports: *The Hindu* (12 September 2007) and *The Times of India* (15 May 2008).

Surya:

1. firm structure, 2009
2. organisation structure, 2008
3. IT architecture report, 2008
4. newspaper reports: *The Hindustan Times* (18 December 2007), *The Times of India* (26 August 2008) and *Amar Ujala* (24 March 2009)
5. Indian FMCG ranking report, 2008
6. logistics organisation structure, 2008
7. sales returns report, 2009.

Several follow-up sessions were set up with the respondents to obtain further clarification on points made in the first interviews. Most of this kind of interaction happened via email or telephone, and only in some instances was a face-to-face meeting set up.

3.6 Data analysis

Knobel & Lankshear (1999:87) defined data analysis as the "process of making sense or meaning from detailed descriptions taken during field research".

Data analysis was conducted through the use of thematic content analysis (Riley, Clark, Szivas, Wood & Wilkie, 2007). This involved analysing data by organising it into categories on the basis of surfacing themes, concepts or similar features. The data was first coded using different colours representing different themes in order to categorise large quantities of data into more meaningful units for interpretation purposes. The coded data was then sorted and further analysed. Throughout the analysis, the researcher looked for patterns in the data using the principle of triangulation, which involved checking data validity by moving between interview data and documents, and looking for discrepancies in the data.

Table 3-2 defines the data-related approach for the individual case studies.

Data	Source	Analysis
Supply chain typology	Articles Press releases Published reports Interviews	Content analysis
Supply chain issues	Interviews Direct observations Minutes of meetings Financial statements Articles Press Releases	Content analysis
Supply chain steps	Interviews Direct observations Minutes of meetings Project reports	Content analysis and benchmark with leading models

Table 3-2: Data approach for case studies

3.7 Reliability

Kumar (2005) defined the reliability of a research instrument as the ability of the instrument to be consistent and stable. Yin (ed.) (2009:33) defined reliability as the ability to demonstrate "that the operations of a study such as the data collection procedures can be repeated, with the same results".

The reliability of the research instrument was tested by the "split-half" approach. Goddard & Melville (2007) indicated that this approach uses a combination of original questions and equivalent modified questions in different sections of the protocol.

In this research study, the researcher used modified questions[75] in the protocol covering:

- the typology and the operational issues
- the operational and financial issues
- the governance model and the steps that supply chain managers were taking to deal with specific issues.

[75] See Appendix B for further details on the protocol.

3.8 Validity

Kumar (2005) defined the validity of a research instrument as the ability of the instrument to measure what it was designed to measure. Leedy & Ormrod (2005) suggested a representative sample method to measure the external validity and Goddard & Melville (2007) recommended the construct validity method. Yin (ed.) (2009: 33) defined construct validity as the process of "establishing correct operational measures for the concepts being studied".

This research study used the construct validity method. Multiple sources of data were used to test the internal and external validity of the findings. The data collected from the face-to-face interviews was verified against the information collected from the documents to test internal validity. Where a discrepancy was found, the data was rechecked with the respondents for further clarification. The findings were also compared with the best practices available within the SCOR model and the South American trade regime to test external validity.

3.9 Limitations of the research

3.9.1 Scope

The scope of this thesis was limited to the transnational supply chains in the FMCG industry. The research was further confined to cases in India and South Africa.

3.9.2 Number of cases and product segments

Only two case studies from each of the country were used in this thesis. However, the researcher felt that these case studies were sufficient to permit comprehensive finding and comparison. Also, only case studies dealing with the two chosen product segments – personal care and packaged food – were included in the thesis.

3.9.3 Performance models

Only three performance frameworks were used: operational, financial and governance. A limited number of performance models were required in order to contain the boundaries of this thesis.

Only three operational performance models (REA, SCOR and BSC) were studied to analyse transnational FMCG supply chains. The SCOR model was chosen as the preferred operational model. The researcher also included the financial indicators and the governance model to address other aspects of transnational FMCG supply chains. Ethical issues (such as trust and corporate responsibility) were not included.

3.9.4 Supply chain managers

This thesis did not attempt to assess the competence of supply chain managers. This was suggested as an area for future research.

3.9.5 Local supply chains

This thesis was focused on the elements of transnational supply chains and did not analyse local supply chains in detail (e.g. the influence of country-specific factors on local supply chains, such as local suppliers, local politics and cultural issues).