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

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2013-06-04
http://hdl.handle.net/10539/12763

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5. FINDINGS

The data collected from the interviews, reports and documents was analysed using the content analysis method. The data was coded and the findings were listed according to the transnational factors (see figure 2-28) and the investigative approach (see figure 3-1). The general findings from the research cases were listed first, followed by the findings from each research case.

The responsible executive in all four research cases agreed to disclose their names in this thesis and confirmed their intention to participate in future related research.

5.1 General findings

The findings from the research cases, though not specific to the objectives as set out in section 1, were as follows:

Title and roles: The supply chain executives of the four research cases did not use the same titles. For example, the supply chain executive responsible for the sales function at AVI was called the "sales manager", while at Surya he was called the "sales executive". In addition, the similar titles/positions among the research cases had different roles and responsibilities. For example, the supply chain director at Amka also handled customer services, while at Dabur, the vice president (VP)[76], a similar position to that at Amka, only handled core supply chain functions.[77] Appendix D6.1 presents this in detail across the four research cases.

Involvement with supply chain functions: The extent to which respondents were involved with supply chain activities was also different among the research cases. Respondents in similar positions had a similar degree of involvement[78] with supply chain activities. However, overall, the respondents from the South African research cases were more involved with core and other related supply chain activities when compared with the involvement of respondents in similar positions from the Indian research cases. For instance, the production executive at Surya focused only on the "making" activity, while the plant (production) manager at AVI handled not only the "making" function, but also the "manufacturing governance" and "standardisation of processes" activities. In another example, the HR manager

[76] The title "VP" was not identified as a common supply chain title in developing countries. It was mostly used by the US firms.
[77] Kumar (2002) defined "source", "make" and "deliver" as core supply chain functions for FMCG industry.
[78] The involvement was measured under three categories: "full", "some" and "none'.

at Dabur did not look after the "skills management" activities related to the "production environment". However, the HR manager at Amka was involved with the "skills retention" plans to address not only the scarcity of skilled resources, but also "training" and "talent management". Appendix D6.2 presents the involvement of various personnel with the various supply chain activities.

5.1.1 Supply chain setup

The supply chain setup of the research cases was analysed in terms of the nature of the firm, and the number of stock-keeping units (SKUs), supply chain employees, overseas suppliers, manufacturing plants, distribution plants and customers. Table 5-1 represents the supply chain setups of the research cases.

Segments	**Packaged Food**		**Personal Care**	
Cases	**Surya**	**Amka**	**Dabur**	**AVI**
Steps				
Firm	National local firm	National local firm with JV overseas	Multi-national firm	National local firm
Overseas suppliers	1-10	11-100	11-100	11-100
Overseas manufacturing plants	N	1-10	1-10	N
Overseas DCs	N	1-10	1-10	N
Overseas customers	101-1,000	>1,000	>1,000	>1,000
Number of SKUs	100-400	401-1,000	401-1,000	401-1,000
Number of supply chain employees	51-100	101-1,000	101-1,000	101-1,000

Table 5-1: Supply chain setups of the cases

The findings specific to the investigative approach are listed in the following sections.

5.2 Typology

The typology of the supply chain setup for the research cases was established in terms of their functional and structural attributes.

5.2.1 Functional attributes

5.2.1.1 Personal care: Dabur

Products' life cycles: Two aspects of the products were noted from all the cases: shelf life and life cycle. The Dabur's sales manager stated:

> The life cycle of most of the products is long, with new products introduction roughly every six to twelve months. There are some base products that are never taken out of the market, e.g. Dabur Chawanprash and Amla oil. The shelf life of most of the products is between 12 and 36 months.

It was established that the shelf life of the products was between 12 and 36 months, while the life cycles of the products were long (up to many years). There was no difference between the life cycles of the products that were sold locally or internationally.

Sourcing and production process: Some raw materials were single sourced from overseas suppliers, while the rest were single sourced from local suppliers. The production process consisted of three or four stages in a combination of flow[79] and batch[80] operations. The packaging operation was semi-automated.

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[79] Flow process referred to continuous flow of material at a production stage, analogy - water flowing through a tap.

[80] Batch process referred to processing of stored products at a production stage, analogy – fermentation of beer in a tank.

Distribution structure: This had multiple layers (four) and involved 25 CFAs. These CFAs were exclusive forwarders; however, Dabur chose different CFA entities for different national regions and the CFAs were also responsible for servicing the transnational market. Finished goods inventories were stored only at the factory warehouses and the mother warehouse.

Planning function: The planning function at Dabur handled the requirements of finished goods units, rolling production planning, purchasing, production, store, warehouse and raw material/packaging materials according to the production plan of each plant. Production planning for overseas and local demands for multiple geographically located factories was centralised. Inventory bands for raw material/packaging materials were set at 30 days static cover for item-wise inventory norms and profiles. The sales requirements of the sales and marketing functions were available by SKUs and CFAs for the next three months. Overseas requirements by region were received directly by the planning function. The planning manager stated: "We [the planning function] report into the centre of competence, which works well for all the manufacturing plants across the country and the sales and manufacturing setups overseas."

Technology: Dabur used an enterprise resource planning (ERP) system (SAP R/3) to plan and execute raw materials/packaging materials requirements. The purchasing and expediting functions were handled by the same set of resources. MRP resources placed orders by email/fax/scan/phone and confirmation was obtained from the suppliers. Dabur used e-purchasing and e-buying technologies to reduce the impact of the increased lead time to some extent.

5.2.1.2 Personal care: Amka

Products' life cycles: The life cycles of most of the products lasted for many years and the shelf life between 12 and 36 months.

Sourcing and production process: The products sourced included finished goods, semi-finished products, packaging and raw materials. Amka marketed, but did not produce, all its products. Sourcing type included a combination of single and multiple suppliers. Amka used a batch production process and followed a repetition of operations, with 5 percent of total annual production outsourced.

Distribution structure: This consisted of three or four layers, with finished products sourced from the factory and outbound logistics outsourced to DHL (a third-party logistics firm). The structure included three factories serving the main DC, which in turn serviced three regional DCs and finally served the local end customers. DHL handled the shipping lines, call and collect setups, and distribution to local and transnational joint ventures (JV) and agents on behalf of Amka. Road transport was mostly used, with some urgent deliveries made by air. Rail transport was also used. Loading restrictions existed, with containers fully packed with heavyweight products at the bottom and lightweight products on top, with the best fit design packed to the rim of the container in order to achieve transportation efficiency.

Planning function: The local customer base, despite the existence of contracts with established retailers, was volatile. Relations with overseas customers, i.e. JVs and agents, were stable. However, overseas demand was intermittent. Future

demand or forecasts for the overseas customer base were generally not available; and if they were available, the forecast accuracy was very low. The forecasts for the local customer base were available, but were only 60 to 70 percent accurate. Finished goods were sold by cases, not individually.

Technology: Amka used SAP R/3 (version ECC6) with 200 users and four super users. However, no such advanced planning and scheduling (APS) systems were used to achieve advanced planning optimisation. Amka also used a proof-of-delivery (PoD) system[81] to track deliveries and a manufacturing technology system, Shopware, to get regular updates from the shop floor.[82] Contact with overseas agents was only through emails or telephone. The IT manager stated: "We [Amka] believe in using the current [ERP] system to its fullest efficiency. We have right skills to handle the transactions and we try to use the planning functionalities within SAP."

5.2.1.3 Packaged food: Surya

Products' life cycles: The products' life cycles were generally long, with a few brands or products in existence since the inception of the firm. The shelf life, however, was short, between three and 12 months. The beverages products had a shorter shelf life (one to six months).

Sourcing and production process: Because some of the suppliers were sister firms, the sourcing of common commodities was local. Only a few raw materials

[81] PoD system was available through the 3PL service provider.
[82] The system was updated every 5 minutes.

were sourced from overseas suppliers. The production process was semi-automated, with packaging lines fully automated, and there were manual upstream production stages.

Distribution structure: The distribution structure had three levels, with firm-owned stockists and distribution points. The product was distributed in a combination of push and pull supply chains, where the finished products were pushed to the stockist up to the maximum set levels, and thereafter customer demand pulled the product further down the supply chain. However, international demand was serviced directly by the production plant. The overseas transportation system used a combination of road, sea and air modes. The sales manager stated: "We focus on controlling the supply chain internally. We don't provide franchises to anyone. All the distribution points are owned by the firm [Surya]."

Planning function: Excel-based planning included forecasting, production planning and weekly and daily reporting. Weekly planning focused on the following areas:

- improvements in the factory
- the replacement of machines
- quarter-by-quarter performance
- breakages and manufacturing defects.

Target bands were defined for inventory levels and forecast accuracy. Customer orders (local/overseas) were received by email, fax or telephone calls. No forecast was available for overseas demand.

Technology: The technology employed was an internal, home-grown system to keep track of daily dispatches from the factories. It was planned to implement the system in future up to the distribution level. Manufacturing technology included an automated system, with 25 basic transactions.

5.2.1.4 Packaged food: AVI

Products' life cycles: The product life cycles were generally very long, with some products from subsidiary firms being sold continuously in the market. The shelf life of the products was short (one to six months) for beverages[83] and medium term for snacks[84] (three to 12 months).

Sourcing and production process: Multiple sourcing was used for potatoes, which were the critical raw material for the production of chips. Single sourcing was used for all the other products. The production process was a mix of flow and batch production, and packaging was by batch. The number of repetitions of operations during the production process was very low.

Distribution structure: The distribution structure consisted of three or four layers for local deliveries and two layers for overseas deliveries. For local demand, the decoupling point was located at the DC, with push from factory to the DC, then pull

[83] Beverages included only Real Juice.
[84] Snacks included tea, coffee, biscuits and chips.

from the DC to the depots. Restrictions existed for the fixed-time delivery windows for local deliveries specifically and the loading combination for the top and the bottom pallets. The transportation manager stated: "The top and bottom pallets are critical to obtain efficiencies and avoid damages in the transportation. We can't load coffee on top of chips."

Planning function: 95 percent of the overseas customers were static or stable. The local customer base was rather volatile. Future demand and forecasts were available, with good forecast accuracy for both local and transnational orders. Finished goods were sold by cases and pallets.

Technology: AVI used Mfg-Pro as the back-end ERP system and an APS system such as the Distribution Planning Model (DPM) for its demand, inventory and distribution planning. Earlier, AVI had used Demantra (software produced by Oracle) for demand planning, but this was replaced by DPM in 2008. AVI also used customised in-house built systems for transportation and S&OP processes. Connectivity to the overseas sales offices was by emails and telephone calls only.

5.2.2 Structural attributes

5.2.2.1 Personal care: Dabur

Structure: The central supply chain structure handled all corporate supply chain matters such as planning, logistics and transportation for both the local and international markets. The structure was headed by a VP reporting to the CEO.

Degree of globalisation: International sales offices existed in Nepal, the UK and Egypt. Dabur imported raw materials (mostly chemicals) from and sold products to the Middle East. The sales manager stated: "Dabur's international offices work closely with the Indian offices, despite these entities being independent in their operations."

Production setup: Capacity was allocated and often reserved for servicing international demand on dedicated production lines.

Information exchanged: Dabur used EDI technology to exchange order-related information with its suppliers and CFAs.

5.2.2.2 Personal care: Amka

Structure: The supply chain was a central function that addressed both the local and international markets.

Degree of globalisation: Amka used overseas suppliers for raw and packaging materials. It had also established three overseas manufacturing plants and further manufacturing subcontracting arrangements in the US and UK. Amka also had overseas DCs in the UK, the United Arab Emirates, Africa and the US and sold to overseas customers in all of these markets.

Production setup: Production was outsourced to other manufacturing firms for a few products such as powder and hair dyes. Production was 90 percent done in South Africa and was completed at the overseas manufacturing plants or by the

subcontractors. The general manager: manufacturing stated: "We have a unique setup. Our international manufacturing plants do the final finishing of various semi-finished products that are produced in South Africa and sold in international markets. This allows us to control costs, improve efficiencies and manage production."

Information exchanged: Information relating to orders and shipments was exchanged with suppliers and advanced shipping notices with agents.

5.2.2.3 Packaged food: Surya

Structure: Surya used a central planning office for both local and overseas markets.

Degree of globalisation: A limited degree of globalisation existed with respect to manufacturing, as the supply chain was backward integrated to flour mills, printing machines for labels and packaging materials, an ink plant, a sugar plant and cardboard boxes. Surya exported finished products to the Middle East and Russia through its overseas sales offices in the Middle East (Dubai), Pakistan and Sri Lanka.

Production setup: No dedicated production lines were used for overseas orders.

Information exchanged: Limited information was exchanged with customers, and in some cases only advanced shipping notes. As the key suppliers were Surya's sister firms, seamless information was exchanged between these suppliers and

Surya. The production manager stated: "All [Surya's] sister firms are run by members of the same family. We work on trust and openness."

5.2.2.4 Packaged food: AVI

Structure: The supply chain was a central head office function. This function addressed the requirements of finance management, IT, planning and DC management.

Degree of globalisation: AVI had established sales offices in SACU member countries. The organisation used overseas suppliers for raw and packaging materials and overseas DCs in Botswana and Namibia and Mauritius, with a customer base in these countries. The international sales manager stated: "Having roots in South Africa, we do a lot of business in SACU member countries and are less focused on European markets."

Production setup: There was no dedication of production capacity for international orders.

Information exchanged: Shipment-related information was exchanged with customers, and information relating to the stock levels of raw materials was shared with suppliers.

5.3 Supply chain issues

A great deal of information was made available during the face-to-face sessions and from the analysis of the documents from the research cases, including data related to the normal functioning of their supply chains. However, only information related to specific issues and to the absence of a latest trend or best practice was collated and analysed further. Key issues were also highlighted when the performance of a transnational supply chain was not similar to that of the local supply chain.[85]

The supply chain issues affecting the research cases were identified and analysed in the categories of operational, financial and governance performance.

5.3.1 Operational performance

5.3.1.1 Personal care: Dabur

Logistics and transportation: Transit losses and remedial insurance were higher for international deliveries as compared to local deliveries. No contracts (local or international) existed with transport service providers. The taxation systems of individual Indian states resulted in dual taxation.

A free-on-board contract was negotiated with the overseas sales offices for overseas shipments. However, document control was loose for the overseas shipments and documents were often delayed.

[85] In certain scenarios, it was meant to be different because of the different structural typology involved between transnational and local supply chains. The purpose of this thesis was also to highlight these areas of differences.

Methods such as collating orders to build up FCLs for overseas deliveries and full truck loads (FTL) for local deliveries in order to achieve transportation efficiencies were not used. In addition, administration and transportation costs for overseas deliveries were higher than those for local deliveries.

Production process: The intermittent nature of international demand resulted in inefficient production systems and regular changeovers. Frequent changeovers were requested for local orders too, but the production function combined smaller order batches to achieve higher production efficiencies, although this resulted in higher inventory levels for WIP and finished goods. Lot size management for overseas orders was also suboptimal. The dedication of capacities to overseas orders resulted in the suboptimal utilisation of all production lines (including the ones dedicated to local orders).

Returns: Returns planning (from customers)[86] was identified as crucial, despite low levels of returns. Transit damage and the over-supply[87] of products resulted in excessive returns.

Lead time and inventory: Lead times for imported supplies were long, and this resulted in higher inventory levels for in-transit and received raw materials. Inbound lot sizes (i.e. FCLs) also contributed to higher inventory levels.

[86] Returns to suppliers were not studied in this thesis based on the previous assumption that FMCG supply chains faced complexities mostly in the outbound distribution legs of the supply chains.
[87] Over-supply referred to the quantity of finished products that were supplied over and above the requested quantity.

Marketing: National (local) marketing was handled by the central office and international marketing by the overseas offices. However, there was no separate marketing strategy for international markets.

Suppliers: The operational capability and financial stability of suppliers were never assessed. In some instances, only their delivery performance was measured. However, Dabur collaborated with key suppliers in order to reduce lead times. The purchasing manager stated: "Dabur continuously collaborates with Flex Laminations [an Indian local supplier] and shares our plans with them."

This kind of collaboration was identified only with local suppliers. Limited information was shared with overseas suppliers.

Planning: The central planning function had limited visibility over overseas demand/orders and suppliers' deliveries due to the lack of close communication and ineffective systems. Confirmations were only received for the next month for the overseas orders and for the next three months for local orders. The planning managers stated: "From our overseas offices, we get confirmation [of orders] only a month in advance."

5.3.1.2 Personal care: Amka

Logistics and transportation: Security was critical for overseas orders due to the political instability and inadequate infrastructure in African countries. Late and short deliveries (local and international) happened due to road accidents and theft.

Central planning forwarded customer orders to the 3PL service provider (DHL) to execute, but end-to-end supply chain visibility was lacking in this process. The cost of imports was also higher, as importing from China was no longer cheaper, as it had been a few years previously. Logistics costs for overseas orders were high compared to those of local orders. Visibility on deliveries was only available with the 3PL service provider and was too limited for destinations in Africa, although all local deliveries were tracked with the PoD system.

Production process: Production capacity was constrained, leading to the outsourcing of a small portion of the production. Multiple changeovers in the production process for local orders resulted in a loss of production efficiency. The costing of products was challenging because of the instability of the costs of materials for overseas orders.[88] NPIs were challenging, as production hitches affected the planned new product lines due to insufficient upfront R&D. The finishing of semi-kit products by overseas manufacturing facilities was not properly aligned, resulting in higher levels of WIP.

Returns: Quality issues existed with respect to international standards, as deliveries to the EU and US markets were rejected for various reasons, such as incorrect labelling and lapsed shelf-life. The organisation's own perception was that the quality of the products delivered to these overseas markets was 5–10 percent inferior compared to that of competing products already available in these markets. However, no research had been conducted to substantiate this perception.

[88] Some of the products that were sold in the overseas markets were discontinued in the local market.

Lead time and inventory: Longer transit and administrative lead times for raw materials sourced from overseas suppliers and deliveries against overseas demand resulted in higher inventory stocks at the factories and the main DC. Fluctuation in lead times was high for overseas supplies and deliveries. For local deliveries, only static safety stocks were in place (with forward cover of two weeks for fast- and medium-moving products and more than two weeks for slow-moving products).

Marketing: No proper research and research tools were used for local and international marketing activities. Marketing plans were driven more by the gut feel and experience. Amka operated in a price-sensitive market, where its success depended on products produced only for lower-selling markets.[89]

Suppliers: Suppliers did not adhere to the timelines that had been laid down either due to lack of a proper paper work (customs) or forward planning. Service-level agreements (SLAs) were not in place with overseas suppliers as compared to local suppliers.[90] Language issues were prominent when dealing with suppliers from SEA countries. The procurement manager also stated: "The global shortage of raw materials last year [2008] resulted in poor service levels."

Planning: Planning for the local market was based on a make-to-stock (MTS) policy, while a make-to-order (MTO) planning policy was used for overseas markets. Planning for overseas markets was difficult, as the demand pattern was intermittent. Regarding maintaining service levels for overseas customers, the

[89] Lower-selling market, referred to the categorisation of consumer segment based on their buying power.
[90] The sisters firms of Amka were among the local suppliers of raw materials.

international sales manager stated: "Amka has over 600 line items for overseas markets and we are focusing on reducing the number; some items are discontinued in local markets. It is difficult to support these products in the international markets."

5.3.1.3 Packaged food: Surya

Logistics and transportation: The management of logistics was difficult for overseas deliveries, as the process involved many complex steps. The customs clearance process was long, either due to the backlog of the documents or the availability of a clearing agent. Surya establishing its local DCs outside the city premises in order to avoid unnecessary taxes; however, the taxation system of specific Indian states still had an impact on the stock holding. Transportation costs were high due to increases in the price of fuel.

Production process: Order and delivery lot size management for overseas orders was not optimal. Production flexibility was very low for two reasons. Firstly, the semi-automated nature of the production system could not achieve higher production efficiency, and secondly, the instability of production plans to meet the ever-changing customer demand of the large number of SKUs also resulted in a loss of production efficiency.

Returns: Quality issues were identified with respect to international food standards, while local returns were minimal. Labelling for international products was also not standardised (in terms of content/language). The international sales

manager stated: "We are new in the international market. We are aligning our products to the international food standards."

Lead time and inventory: Delivery lead times were longer for international orders, and this resulted in inaccurate forecasts and higher inventory levels. For local deliveries, only static inventory norms were used.

Marketing: Surya focused on selling products using features such as quality, quantity and pricing for the average consumer in the local market. However, the same approach was not effective in overseas markets. The sales manager made an interesting point:

> The [marketing] strategy of Surya is to beat the competition by virtue of cost-priced products with family-pack-sized products and focusing on the rural market. The target customer band is the low to medium income group population, where Surya has been very successful in creating profitable markets where other competitors do not have a strong presence.

Suppliers: No collaboration and SLAs existed with international suppliers, and no formal SLA existed with local suppliers. The sourcing manager stated: "We are a firm that is integrated backwards. All the upstream suppliers are Surya's sister firms and we work on trust."

Planning: The intermittent nature of overseas demand resulted in inefficient forward planning. There was no formal international or local supply chain policy. Surya marketed only selective more profitable products in overseas markets.

Service levels and schedules were not on time for overseas deliveries, and PoD was not available, even for local deliveries.

5.3.1.4 Packaged food: AVI

Logistics and transportation: The availability of local transport was an issue, as contracts did not exist to satisfy all of AVI's transportation requirements. Logistics costs had gone up because of increased international volumes and inter-depot transfers. For Mauritian customers, the warehouse in Durban (with a capacity of 2,000 tons) had encountered space problems. In addition, stacking dates were continuously changed on the vessels transporting exports, resulting in a higher in-transit inventory.

Production process: Overseas products used different ingredients, making the production process complex. Paramelen oil was used to extend the shelf life of the overseas products, while cotton-seed oil was used for local products (chips manufacturing). The planning manager stated: "We supply different products to our international customers [Mozambique, Botswana]."

Returns: No issue was identified.[91]

Lead time and inventory: Long lead times existed for servicing transnational orders. Raw materials[92] were ordered four to six months in advance. Lead times were variable due to delays in supplier deliveries, and demurrage costs were charged on standing vessels.

[91] Returns from local and overseas customers were limited.
[92] All of the imported raw materials, for producing coffee, tea and biscuits.

Marketing: No issue was identified.[93]

Suppliers: Language barrier existed with international suppliers, such as those based in Thailand. No long-term contracts were in place with overseas suppliers, while contracts had been signed with local suppliers. The financial stability of suppliers was never assessed.

Planning: Inconsistency in demand was identified.[94] Communication between central planning and the regions was not regular. The planning of supply chains across different time zones was difficult. The trade-off between cost and service levels for local orders was not optimal. Forecast accuracy over a period of time was not consistent, resulting in higher safety stocks, unplanned write-offs and stock outs. A supply planner stated: "I face a problem of cost versus delivery issues – how much to invest in inventory to maintain [specific] service levels. The question is what the return on investment is."

5.3.2 Financial model

5.3.2.1 Personal care: Dabur

Cash flow: Payment terms were standardised as the cost of sale was simply transferred among Dabur subsidiaries, resulting in a lower cash-to-cash cycle for overseas deliveries. For inbound supplies, advanced payments had to be made. Dabur had established standard payment terms with CFAs. Cash flow for local deliveries was manageable, although not optimal.

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[93] No real issue highlighted by the marketing manager, except the issue of the budgetary constraints for marketing department.

[94] Demand was lifted either all at once or equally/ un-equally.

Cost of goods sold: COGS was higher because of higher costs of raw materials and logistics. For overseas deliveries, COGS rose significantly because of increased logistics cost. Overseas manufacturing systems had higher variable operating costs and asset depreciation. No issues were identified with regard to the local COGS.

Sales: Sales in overseas markets had increased due to the local presence in these markets. For local markets, sales had been increasing for several years up to 2009, as Dabur was introducing new products to penetrate niche markets.

Asset utilisation: The utilisation of assets was not optimal because of the intermittent nature of overseas demand and the dedication of capacity to overseas orders. The frequent changeovers requested also resulted in lower asset utilisation. One of the planning managers stated: "International orders are not [received] every month."

5.3.2.2 Personal care: Amka

Cash flow: Because of its overseas JVs and agents, Amka was in a strong position to manage cash flow for overseas orders. However, for local orders, the firm faced challenges due to its not being a strong FMCG firm in the South African market compared to its competitors. The sales manager stated: "We can't dictate terms to our local customers."

Cost of goods sold: Higher costs for bulk insurance to cover transit losses resulted in higher COGS for overseas products. The savings achieved by Amka in

the local market by consolidating manufacturing plants and their capacities was nullified to a large extent by the increased cost of raw materials.

Sales: Sales in overseas markets had gone up due to the customer service support provided by the agents and JVs. Sales were also very volatile because of the intermittent nature of demand. Local sales had also increased due to the buyout of a competitor's brands, Black Like Me.

Asset utilisation: Asset utilisation had improved due to the consolidation of manufacturing capacities to service local demand and the outsourcing of the final stages of manufacturing to overseas manufacturing facilities for overseas demand.

5.3.2.3 Packaged food: Surya

Cash flow: Longer lead times and poor service levels resulted in negative cash flows. Cash flow was a challenge for both overseas and local orders due to the lack of stable relationships and contracts with the organisations suppliers and customers. The sales manager stated: "We propose to institute advance payments from international customers. The long payment cycle has always been a difficult area for us."

Cost of goods sold: COGS was higher for overseas markets due to excessive returns, increased logistics costs and the lack of proper transport planning. The higher COGS was a concern for Surya. For the local market, the COGS for Surya's products was below that of its competitors.

Sales: Sales in the local market were higher due to strong brand positioning and good face value offered to customers. Sales in overseas markets were lower due to the lower customer service levels achieved.

Asset utilisation: Asset utilisation improved for local orders due to the consolidation of orders from stockists, while for overseas orders, asset utilisation was lower due to the intermittent order patterns.

5.3.2.3 Packaged food: AVI

Cash flow: The cash cycle had been adversely affected by advance payments to suppliers for inbound supplies, while payment terms for overseas customers were longer, resulting in a longer cash-to-cash cycle. Local customers enjoyed the standard payment terms.

Cost of goods sold: COGS was higher for overseas markets due to higher sales and administrative costs. Logistics costs were also higher. CGOS was stable for local markets due to the end-to-end optimisation of AVI's supply chain.

Sales: Sales were higher in overseas markets and lower in the domestic market because of the economic downturn. AVI had achieved a higher order fill rate for its international demand. The finance manager stated: "In this downturn, we have managed to secure more deals in the overseas markets [i.e. the SADC]. In the local markets, we have suffered a bit, so we shifted our focus to international markets."

Asset utilisation: Capacity dedicated to local demand was taken up by increased international demand, resulting in higher asset utilisation. However, the setup time was longer, resulting in a loss in overall production efficiency.

5.3.3 Governance model

5.3.3.1 Personal care: Dabur

Policies and procedures: Dabur had developed policies and procedure related to supply chain management that had matured over a period of time. However, policies for the international supply chain were not fully developed.

Strategies: The international supply chain strategy was aligned with the organisation's corporate strategy. Hence, no issues were found with respect to the local supply chain strategy, although the strategy for the international supply chain had not been developed.

Measurement: Dabur monitored and managed the supply chain performance of its business units and overseas facilities. However, measurements for the lower levels[95] of these supply chains were not rolled up to the higher levels.

Culture: A supply chain management culture[96] existed and was shared by both the local and overseas facilities. No issues were identified. The CEO stated: "We [Dabur and the group's firms overseas] think the same as far as supply chain management is concerned."

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[95] Levels 3 and 4 as per the SCOR model.
[96] The culture, in this thesis, referred to the supply chain thinking and alignment within the firm.

Leadership: The supply chain function was headed by a VP. A strong leadership presence was in place to manage the supply chain function. However, the customer service function was not part of his portfolio.

People skills: Supply chain resources were well versed in supply chain concepts, although only within their silo-based work plans. The resources that were available did not permit the establishment of an understanding of the full supply chain.

Functional integration: The centralised planning function controlled all related supply chain functions. Regular meetings were held to allow the supply chain functions to collaborate effectively, except for customer services.

Business technologies: Dabur used SAP R/3 as its ERP system; however, there was no APS system.

5.3.3.2 Personal care: Amka

Policies and procedures: International Organisation for Standardisation (ISO) 9000 certification was obtained in 2004 and general manufacturing policies were in place. However, no policy existed for overseas markets.

Strategies: A supply chain vision and mission statement existed, and corporate strategies were rolled up to the supply chain level for the South African operations, but not for overseas markets.

Measurement: Measurements for the supply chain were based on objective, goal, strategy and measurement principles and existed for both the local and overseas

markets. These measurements were very much driven by the SAP system, but not all reporting functionalities were used. The planning managers stated: "We still use a lot of Excel worksheets [outside SAP]. Maintaining them is a challenge."

Culture: The supply chain culture was aligned with overseas manufacturing entities, but not with that of the agents or JVs.

Leadership: The supply chain function was headed by a "supply chain director" who handled the customer relationship management, production and IT functions. However, the supply chain director had no influence on the purchasing function (a core supply chain function).

People skills: The various personnel had adequate knowledge of supply chain functions and had completed the relevant certifications[97] from APICS. No issues were identified.

Functional integration: All supply chain functions met weekly for a supply chain meeting, while the manufacturing and distribution functions met daily. An S&OP process had been in place, although it was not effective. Eventually it was discontinued, as no one trusted it.

Business technologies: The collaborative technology used to interact with the firm's partners was not standardised.[98]

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[97] Certified in production and inventory management (CPIM), certified fellowship in production and inventory management (CFPIM), certified in resource management (CIRM) or certified supply chain professional (CSCP).

[98] The orders were sent by email, fax or telephone. Excel worksheets were used to record the orders.

5.3.3.3 Packaged food: Surya

Policies and procedures: The supply chain management policies for both local and overseas markets were not mature.

Strategies: There was no separate strategy for the supply chain functions.

Measurement: Measurement existed only at very high level, such as cost of sales and volume sold. Measurements for the lower levels of the SCOR model were not developed.

Culture: Surya faced cultural challenges in its dealings with overseas suppliers and customers. The organisation adopted a decentralised planning and manufacturing setup, which did not help to build up a supply chain culture within the organisation.

Leadership: There was no clear supply chain leader, and the CEO was inherently responsible for the supply chain.

People skills: Staff had no understanding of the overall supply chain. The production manager stated: "Our supply chain resources are well equipped with production knowledge."

Functional integration: The supply chain functions met on a monthly basis to review only production and distribution plans. There was no overall supply chain synergy.

Business technologies: Surya used a home-grown transaction recording system, and therefore the basic and advanced functionality provided by a stable ERP system was lacking.

5.3.3.4 Packaged food: AVI

Policies and procedures: A supply chain policy existed for both local and overseas markets. However, policies and procedures were not standardised.

Strategies: The corporate business strategy guided the supply chain strategy. However, no separate strategy existed for overseas markets.

Measurement: The supply chain was measured at various levels with cost drivers such as personnel, vehicles, fuel, on time in full and cost (as percentage of). These measurements were developed in-house and they had own definitions and calculation formulas, and there was therefore no opportunity to benchmark.

Culture: The culture supported the supply chain mindset of the organisation. However, the shift in mindset required for the implementation of an APS system was difficult to achieve as staff were comfortable with their established routine tasks.

Leadership: The supply chain function had a strong leader. However, the supply chain team lacked an understanding of advanced supply chain concepts, as discussed further in the next point.

People skills: Supply chain staff were skilled in their operational activities. However, sometimes they were not aware of the impact of their decisions on other elements of the supply chain and were not supportive of any major changes in their supply chain planning cycle. The planning manager stated: "We have a few people who have been working with us for more than 20 years. To bring about a drastic change in their work pattern and style is tough."

Functional integration: All the supply chain functions met monthly in S&OP meetings. Supply chain management was handled centrally; however, DC management was decentralised. Also, some of the international offices (Botswana/Namibia) were not aligned with the local (South Africa) office in terms of supply chain planning.

Business technologies: AVI used business technologies such as Cognos for reporting, MfgPro for ERP and DPM for demand and inventory planning, as well as a sales force automation tool and an Excel-based transport planning tool. These systems were not integrated and data was transferred between them in files/databases.

5.4 Steps taken by supply chain managers to deal with the issues confronting them

The steps that supply chain managers were taking to deal with the issues confronting them were identified and analysed for each case.

5.4.1 Steps taken

5.4.1.1 Personal care: Dabur

Technology: Dabur was setting up an EDI system with all its key suppliers and using e-buying and e-procurement technologies to reduce the procurement lead time. It was planning to evaluate various APS systems in order to optimise demand, inventory and distribution planning.

Supply chain setup: The organisation was setting up contracts with key suppliers to monitor supplier performance levels. It was also standardising the accounting system among all its various entities (local and overseas). It was allocating production capacity for international demand and leveraging it for local demand in down periods. It was planning to assess its home-grown supply chain setup with the aim of introducing a standard supply chain framework.[99]

Skills: Dabur was improving on its personnel's supply chain skills by rotating staff among different supply chain functions and by hiring candidates with at least a master's degree from a premier academic institution.[100]

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[99] The preferred model was SCOR.

[100] "Premier academic institutions" referred to "A" category or top-level MBA and engineering institutes.

Marketing: Dabur was focusing on developing an advertising strategy and improving product packaging in order to improve on branding and further penetrate the international market.

Planning: Dabur was improving the S&OP process in order to reduce planning inefficiencies and, in liaison with transport providers, to manage the delays in obtaining capacity commitments on vessels.

Organisation structure: The firm was focusing on aligning the organisational structure of its international and local entities.

Outsourcing: Dabur was considering outsourcing a portion of its manufacturing capability to overseas entities in order to reduce supply chain costs and improve supply chain flexibility.

5.4.1.2 Personal care: Amka

Technology: Amka was implementing an automated distribution requirement planning (DRP) system on SAP in order to optimise distribution efficiencies. It had also decided to process documents electronically and had migrated to an electronic funds transfer system instead of accepting cheques. It had implemented Vat-rax for PoD tracking functionality to enable cross-border visibility. It was also deploying advanced technologies such as SAP business warehouse for standardised and advanced reporting.

Supply chain setup: The firm was planning to improve on information exchange with its suppliers, such as obtaining confirmation notes from suppliers and managing by exception. It was also focusing on importing only a few finished goods items such as toothpaste in order to contain high import costs. It was managing the rate of transit damages and trading it off against the capacity of the containers. To control theft, it was taking precaution by taking photos of containers (empty, half full, full and sealed on both sides) and using radio frequency identification data (RFID). To control returns and quality problems, it was allocating only recently produced stocks to overseas markets.

Skills: Amka was focusing on further improving supply chain skills with training on multiple tasks. It was in the process of establishing an Amka academy (for manufacturing skills and leadership) with accreditation from South African educational and training institutions.

Marketing: The firm was drafting the necessary dumping strategies for overseas products. It had recognised the branding issue and was focusing on upgrading the look/feel of its products without impacting the price. It was also revising its advertising strategy and obtaining proper market research to validate the available hands-on information.

Planning: Amka was implementing the practice of using proactive/synchronised planning (for chemical/packaging materials) in order to address the related inventory and quality issues. It was forecasting product demand by using five models/categories, i.e. increasing, decreasing, static, erratic and undefined, in

order to improve forecasting accuracy. It was establishing SLAs with suppliers and customers and had also obtained a blanket approval for forex from the South African Reserve Bank for a period of one year, which was renewable every year.

Organisational structure: The firm was establishing an organisational structure that aligned JVs with the local operation in South Africa. It was also streamlining the roles and responsibilities of each position and drawing up the related work profiles.

Outsourcing: Amka was planning on further outsourcing some of its manufacturing operations to overseas markets.

5.4.1.3 Packaged food: Surya

Technology: Surya was looking for a standard ERP system for recording transactions and providing integration within business units and planning to extend the visibility of current systems to the stockists.

Supply chain setup: The firm was establishing a further backward integrated model to include all raw materials and to address the issues of external supplier reliability and long lead times. It was incorporating stockists into supply chain planning in order to increase visibility across the supply chain and was establishing agreements with customers in order to monitor and manage service levels.

Skills: The firm was hiring personnel from premier business schools to improve supply chain skills and training existing staff on advanced supply chain methods.

Marketing: Amka was in the process of appointing a brand ambassador to improve on branding in the national and international markets.

Planning: The firm was addressing the issue of lower product quality by improving on packaging (standardised labelling, etc.) and by procuring high-quality raw materials. It was also establishing a central call centre to address customer queries and an S&OP process in order to align the planning activities of individual business units.

Outsourcing: Amka was evaluating a model for outsourced transportation in order to reduce the outbound logistics cost to all the countries in the regional market and up to the ports for international markets.

5.4.1.4 Packaged food: AVI

Technology: AVI was focusing on integrating the various planning systems and the back-end ERP system. It was planning to roll out an APS system to its sister firms within the AVI group.

Supply chain setup: The firm was in the process of appointing an overseas agent to handle the language barriers that it was facing. It was also standardising the parameters for the costing framework in order to create the same language and was establishing clear definitions of supply chain activities. To reduce the cash-

flow cycle tie, it was improving on the commercial terms of each product category. It was also localising suppliers (95 percent of overseas suppliers were replaced by South African suppliers for Snackworx) in order to reduce lead times. It was considering evaluating its supply chain against a standard supply chain framework in order to design standardised supply chain processes.

Organisational structure: AVI was aligning the organisational structure (with respect to the number of people involved) of the overseas sales offices with that of the local office.

Skills: The firm was employing candidates with strong analytical skills in order to shift its supply chain thinking from the traditional supply chain to an advanced supply chain.[101]

Marketing: The firm was promoting its brand image locally and internationally, as customers still remembered AVI's old name, National Brands.

Planning: The firm was setting up processes for communicating forecast numbers to the various regions (Namibia/Botswana/Zambia/Europe). It was setting up contracts and aligning all parties in terms of the initiation of the contracts.

Outsourcing: AVI was using ad hoc transport providers to bridge the capacity gap.

[101] Traditional thinking referred to philosophy of execution of basic business functions, while advanced thinking referred to philosophy of optimisation, collaboration and visibility.

5.5 Other findings

Some findings did not fall under the previous section and are covered here.

5.5.1 Other findings

5.5.1.1 Personal care: Dabur

Product catalogue: The firm's product range was too big to handle. A standardisation exercise was needed in order to contain product proliferation. The sales manager stated: "We can't sell all the product range overseas, [and we are] focusing only on selective brands and packs."

Sourcing: The LCCS from China was no longer effective because of increased fuel and logistics costs.

Marketing: Supply chain managers were considering establishing a gain-share model[102] with their overseas partners in order to control costs and improve profitability.

Distribution terms: The terms primary, secondary and tertiary were used interchangeably for outbound distribution and this created confusion.

5.5.1.2 Personal care: Amka

Production: The general manufacturing practice across all personal care manufacturers was deficient in terms of quality, skills and governance. The need for a quality control system (for procedures, systems and stock control) had also

[102] Gain-share model worked with the condition the buyer paid a portion of the benefits to the seller. Different benefit calculation rules existed in this regard. Risk-reward was another name for this model.

been identified. Supply chain managers were re-engineering the factory layout to improve production efficiency.

Skills retention: Amka was improving its skills availability by setting up a system to retain skills, which operated in terms of working conditions, remuneration, acknowledgment and reward.

Foreign exchange: Foreign exchange (forex) management was crucial in order to optimise transnational differences. Customers often switched to competitors because forex rates were no longer favourable. Once it was set low, it was difficult to push the forex rate higher. The finance manager stated that "[the right] forex is important for us. International customers are very conscious of forex rates".

Industrial relations: Good industrial relations were crucial in order to avert strikes and maintain good working conditions.

5.5.1.3 Packaged food: Surya

Product catalogue: The focus on expanding the product range by setting up factories to address capacity needs was not supported by the supply chain strategy. The backward-integrated model restricted the availability of raw materials.

Regulations: The need to obtain support[103] from the federal government on tax and related subsidies on food items was identified in order for Surya to be

[103] Support initiatives identified were relaxation in taxation, incorporate food in SEZ system etc.

competitive in international markets. The CEO stated: "We need some support from the state and the central government to create [a] favourable environment for us to be export oriented."

Culture: The gap between Surya and its close competitors due to the former's entrepreneurial culture and the latter's professional culture meant that Surya's supply chain could not be benchmarked.

Definition of supply chain: "Supply chain" was an ambiguous term and needed to be properly defined for Surya.

Forex and financial accounting: The rupee-dollar exchange rate was very volatile and this nullified profits in many instances. Surya and its customers used different costing standards and accounting systems.

5.5.1.4 Packaged food: AVI

Infrastructure: Ports and international logistics were not up to the mark and getting the cargo in and out of port was an issue. The transportation manager stated: "Ports, especially Durban and Richards Bay, are congested. We might have to look at other options."

Accounting system: The accounting system needed to be improved with a set of standard terms and definitions.

Supplier negotiations: Negotiations with suppliers were handled by purchasing executives and were normally one sided.

Collaboration across business units: Other divisions needed to leverage AVI's infrastructure in terms of manufacturing and logistics capacities.

Risk: Returns were higher from the overseas market because of miscommunication between customers and AVI. There was a huge risk of export products re-entering the local market and cannibalising local demand.

Production: Different ingredient requirements for the international products created complexity in the manufacturing process.