Project Reports: Industry and Services

APO SYMPOSIUM ON SUPPLY CHAIN MANAGEMENT FOR SMEs

11-14 December 2001, Taipei, Republic of China

BACKGROUND

The basis of global competition has changed. No longer are companies competing against other companies, but rather supply chains are competing against supply chains. Indeed, the success of a business is now invariably measured not by the sophistication of its product nor by the size of the market share. It is usually seen in the light of the ability to sometimes forcefully and deliberately harness its supply chain to deliver responsively to the customers as and when they demand it.

Often than not, this necessity is brought about by the onset of new and emerging albeit sometimes disruptive technologies. In fact, it is the rapid penetration of these new technologies such as the Internet that is also transforming global commerce, shrinking the marketplace, forcing situations of highly unstable and unpredictable demand intensities, and shortening the lead times of critical information flow. Operating under this setting, the literature, both trade and academic, has time and time again reported how technology as a driver of change has impacted the practices of many a multinational corporation's (MNC) supply chain.

Already, for these MNCs, their supply chains are now intricately linked to the digital economy on a path of no return. Rightly so, supply chain management (SCM) will have to be linked to the new digital economy as demanding and technology savvy customers around the world increasingly expect goods and materials to be delivered to their doorstep at "click-speed", courtesy of broadband capabilities. Charles Fine (1999), in his book on Clockspeed, has highlighted that the ability to capture and share Internet enabled, real time information has dramatically boosted the clockspeed of many industries, dictating the key elements of survival. Countries, and firms alike, that desire to participate in global supply chains must understand and embrace (without further hesitation) the new mantra of SCM on which the new competition is premised. Likewise, Asian enterprises must adopt these new technologies to effectively participate and navigate successfully in the new economy.

Against this background, the APO organized its first Symposium on "Supply Chain Management" in January 2001 in India to provide an exploratory platform for member countries to share their experiences on the practical applications of SCM that have contributed to increasing customer satisfaction, improved productivity, better work processes and sharper competitiveness. Arising from this same Symposium, one prime concern highlighted was the financial and organizational ability, and maybe willingness, of indigenous SMEs to invest in much needed IT infrastructure (which might not yield a correspondent rate of productive return) and the other related technologies (like RFID, ADC, ASP, etc) to improve on their supply chain processes. Issues like complexity, time and space compression, and co-operating in eMarketplaces are all new challenges that SMEs must face and survive the test or risk being marginalized to either commodity players with a low value proposition at best or forced into oblivion in the worst case scenario. In addition, SCM would have to integrate such SMES to ensure greater collaboration between supply chain partners, in particular, those SMEs who serve as suppliers to larger corporations responsible for either semi-finished goods or finished goods, and work towards a synchronized value collaboration network.

In sum, this Symposium on "Supply Chain Management for SMEs" is a timely follow-up program to highlight the pivotal role and importance of supply chains to SMEs, and discuss ways in which SMEs

can effectively and efficiently leverage on SCM for greater productivity, greater competitiveness, and ultimately better customer satisfaction within their domain markets.

The methodology used is drawn primarily from:

1. case studies presented by resource persons from Taiwan's leading SMEs (e.g. Inventec, Taskco Corporation, and Digi Chain Information Co Ltd.),
2. country case papers presented by various APO participants (e.g. Philippines' mango agribusiness industry, Indonesia's herbal medicine industry, Fiji's SMED Centre, Sri Lanka's tea industry, India's Khadi and Village Commission, among others).
3. lectures from resource persons related to SCM planning and process analysis, SCM technology, SCM trends and development, and new paradigms in higher productivity strategies.
4. experiential learning through panel, syndicate and informal discussions.

Twenty (20) participants from twelve (12) member countries contributed to the deliberations. Resource inputs were provided by Dr. J D Kim, Professor, Kookmin University, Republic of Korea; Dr. Mark Goh, Associate Professor, The NUS Business School, National University of Singapore; Mr. Ryoichi Watanabe, Senior Consultant, SAP Japan, Dr. Huan-Tsae Huang, Chairman, TASKCO E-Business Corp., Dr. Chin-Wen Lin, VP, Inventec Corp., and Dr. Li-Chih Wang, Chief Advisor, Digi Chain Information Co. Ltd. In all, there was fruitful deliberation on 24 diverse presentations from the APO participants and resource persons.

Also, to facilitate the focus of discussion, the country papers were categorized under three broad sectors of public agencies, food related, and automotives and others to represent the broad classification of country papers offered for presentation and discussion. Some guidelines for the syndicate discussions were also established. Annex C contains the template used for the syndicate discussion and preparation.

SUMMARY OF ISSUES

Based on the syndicate discussions and resource persons' presentations, the symposium arrived at several key conclusions.

1. **Awareness of good SCM practices among SMEs is still low.**
   After the resource persons' presentation, participants accept and realise that SCM is critical to their business and industry. However, most participants felt that, both through the syndicate discussion and country paper presentation, their local SMEs still lack a strong awareness of good SCM practices such as maintaining ecological balance with the external environment, green productivity matters and product lifecycle management. Indeed, understanding and implementing good practices in SCM should bring about dramatic changes in the work or business process with positive results in efficiency, cost reduction, and better quality services.
2. **SMEs are slow to implement SCM.**
   Participants recognize that in today's climate of the one marketplace, intense competition, dynamic business environment, proliferation of innovation and new disruptive technologies, organizations must implement SCM. However, for one reason or another (some of the reasons will be mentioned later), those SMEs that are aware of the need to install SCM systems have been slow to do so. Failure to act quickly and link productively to the SCM ring will impede the productivity levels of the SMEs as globalization and competition (generated by the onset of WTO) will continue to haunt organizations and business systems

nationally and regionally for the APO member countries.

3. **Management of supply chain among SMEs is limited and localized.**
   SMEs being small and highly fragmented are at a natural disadvantage when dealing with the overall management of the supply chain(s) that concerns them. Unlike the MNCs, which have greater geographical reach and richness of resources, SMEs generally do not a good view of the whole supply chain outside of their immediate operations and contact. As such, these SMEs can only manage the supply chain within their close proximity. Also, by restricting themselves in this manner, they have to be subservient to the larger players of the chain, wielding little or no management control, and have to be subjected to forex variations.

4. **Information sharing is lacking among and between SME vendors and customers.**
   Best practice in SCM dictates the necessity to share and coordinate information on a global, real time basis, with all players inextricably linked and plugged into the same information network. Unfortunately, SMEs plagued by survival and competitive fears put themselves in a quagmire when it comes to unrestricted sharing of data and information. Conversely, even if the SMEs want to share information among themselves and their supply chain partners, they need help to organise their database effectively. For this reason, SMEs being fragmented among themselves within the same industry, simply cannot lend themselves to a good information infrastructure.

5. **SMEs still employ a low level of IT usage for SCM.**
   The run of the mill technologies currently employed by MNCs to extract value from the supply chain are considered to be either too expensive or too sophisticated for the SMEs' present level of business operations. For instance, SAP adoption is seen to be critical for the smooth operations and transformation of data into information but most SMEs simply cannot afford to invest in such a system not to mention the requisite maintenance and upgrading cost of the system. In the developing APO member countries, SMEs also suffer from being highly labour intensive, have lower educated employees, and consequently are weak in technology acceptance and adoption. This can serve to deter the SMEs from proactively embracing information and communication technologies willingly.

6. **SMEs want more government support for SCM development.**
   The country paper presentations and the syndicate discussions clearly alluded to the need for more governmental assistance to help drive SCM development for higher productivity. This is especially poignant in helping to establish basic SCM infrastructure required for the efficient movement and distribution of goods and services. However, it is recognized in the symposium that infrastructure development must go in tandem with skills and incentives. Governments and relevant public agencies ought to gazette clear policies in helping SMEs move with the SCM wave by facilitating the creation of logistics facilities for the survival, sustenance, growth and globalization of SMEs to effectively compete in the new millennium.

Therefore, it can be summarised that SMEs being small and numerous in the ocean of business lack the requisite ingredients in finance, facilities, and skilled faculty to effectively harness SCM for greater productivity and customer satisfaction. As the rate of globalization and intense competition increases, so too will the need to re-jig supply chain processes to better meet the changing requirements of the external environment. Until this is done, the seamless and boundary less supply chain will continue to haunt the SMEs. As such, external intervention must be introduced as quickly as possible to fast forward or propel the SMEs into the information age. Governments, NGOs and self help groups have a critical and immediate role to fulfil here. Indeed, all three groups are instrumental and need to work together to build an environmentally friendly supply chain for SMEs,

especially those engaged in the textiles, automotives, and electronics businesses.

RECOMMENDATIONS

There are many ways in which governments of APO member countries, industries and clusters in member countries, and the APO can assist to expedite the adoption of SCM for SMEs that wish to realize higher productivity. Some key recommendations are listed below:

Recommendations to the Public Sector

1. The basis of competition has changed. Enterprises can no longer afford to compete in isolated pockets or in localized markets as the arena for competition has enlarged. As such, the relevant public agencies must formulate appropriate enticing policies to encourage SMEs to undertake productivity leaps through supply chain process or systems improvement in their respective sectors, especially for the smaller or micro enterprises. Also, government policies should be pro-SME and where needed be relaxed to facilitate greater and smoother trade flows for SMEs. In particular, greater amounts of interest free loans or subsidies should be awarded specifically for encouraging SMEs to adopt IT usage.
2. The governments of the APO member countries should actively promote the awareness of SCM as a tool for sustaining economic growth and business excellence. This can be effected through sponsoring appropriate training schemes at the national or federal levels. Only then can the right set of people and skill set be established to provide a pool of technical expertise and management know-how necessary to conduct good SCM practices to achieve operational excellence. To do so, governments need to invest financially to raise the educational levels of people working in SMEs in order to harness the type of technology and systems needed for good SCM practices.
3. National level resource centers for SMEs, if not already done so, should be established immediately to serve as points of dissemination of SCM best practices, facilitate expert advisory services, repositories of publication and related case studies of successful SCM implementation. Another role of the resource center is to serve as an information / knowledge clearinghouse for domestic industries with other related industries elsewhere.
4. Governments of developing countries must engage external agencies or consultants that are providing good SCM solutions or improvement services to help set the appropriate technology standards of the future. This can help to streamline the respective country's SME's sector with regard to SCM implementation. Other SCM based standards and infrastructure should be formalized by the relevant public agencies to facilitate logistics movement for SMEs.

Recommendations to the Private Sector

1. If the private sector recognizes the value of SCM as a tool for business excellence and a roadmap for growth in a competitive marketplace, industry and enterprises must be prepared to seek external advice and help from the domain experts. To do so, industries must learn to leverage on the prevailing networks of industries around the region and draw upon their expertise and experience.
2. An association (formal or informal) or network for collaboration on SCM practices, innovation drives and benchmarking of performance management in supply chains could be instituted at either the national or regional levels among the various chambers of commerce or industry associations. Such a self help group can help to provide the necessary bridges of knowledge on SCM, information sharing about current cost reduction best practices, good process redesign tools and techniques, and technology enablers

adoption. In this way, the awareness level and implementation of SCM practices can be promoted and expedited. Further, SCM implementation challenges can be reduced.

3. SMEs in the respective industries and local economies should form their own consortia to overcome the inherent weaknesses of small firm size, low value add manpower capability, and financial inability, and to leverage on the consortia to produce a stronger synergistic supply chain network. This consortia or cooperative should then have better bargaining powers when it concerns buying or selling in the larger business context. Economies of scale are needed for efficient supply chains. Such a consortia can also be more cost effective when it concerns the much needed setting up of an information database by management consultants for SMEs.
4. Finally, SMEs need to work with their respective local governments to actively support and push for the adoption of appropriate information and telecommunications technology in their industries, and to support government-sponsored training programs, where possible.

Recommendations to the APO

1. Organize a follow-up workshop/symposium on best practices in SCM to build on the momentum created at this meeting. The focus of this intended deliberation would be on presenting relevant and in-depth Asian case studies of SMEs that have demonstrated measurable success in their SCM implementation. Through the deliberation of such best practices, other member countries and their enterprises can benefit through the creation of an awareness avenue for indigenous SMEs who have yet to feel the full impact of SCM changes on their operations.
2. Create a link or network in the current APO web site to disseminate to interested SMEs updated SCM information, practices, adoption rates and related resources. For instance, various useful information such as symposium papers related to SCM, best practices web sites can be included in such a link. APO can also use this link to showcase those SMEs which have adopted best practices in SCM and provide that initial point of contact for other SMEs wishing to improve or implement SCM. In this way, the learning curve for the implementation of SCM can be expedited.
3. Arrange for a study mission of SCM in developed APO countries to showcase to other member countries how the respective SMEs in targeted industries have physically and practically implemented SCM into their processes. The visual sharing insight and interaction can serve to enlighten participants more on the practical realities and fruits of SCM and operational excellence, and initiate deeper networking possibilities among such enterprises or industries. One particular focus is the degree of technology usage in SCM.
4. Initiate more enterprise level training and exchange programs on SCM understanding and awareness between APO member countries. APO, through the various NPOs, may think about facilitating and engaging endorsed reputable trainers for short consultative based courses on SCM implementation and innovation software or tools specially targeting specific industry clusters such as agribusiness and automotives.
5. Related to the awareness on SCM and environmental friendliness, there appears to be a need to educate SMEs on maintaining and subscribing to the ecological balance of the external environment. The APO could consider forming another workshop/ symposium to highlight to SMEs particularly those from less developing countries on strategic relationship between environmental friendliness and SCM, and good resource allocation management. Companies that have or are still actively practicing reverse logistics or green productivity should be encouraged to be case studies.

ANNEX

Download ANNEX C -- Symposium Materials (PDF format)

PROGRAM

APO Symposium on Supply Chain Management for SMEs
11-14 December 2001, Taipei, Republic of China

Venue: China Productivity Center, Taipei Hsien, Taiwan

Time	11 December (Tuesday)	12 December (Wednesday)	13 December (Thursday)	14 December (Friday)
09:00 - 10:20	**(09:50-10:20)** Opening Ceremony	Presentation by Mr. Ryoichi Watanabe "Emerging Technologies to Support e-Business"	Presentation by Dr. Li-Chih Wang "Implementation of SCM System for SMEs in Taiwan"	**(08:45-11:30)** • Syndicate Discussion • Outcome Presentation by Group • Closing
10:20 - 10:40	**Coffee Break**			
10:40 - 12:00	Presentation by Dr. Huan-Tsae Huang "How to build the SCM System"	Country Papers Presentation (I)	Presentation by Dr. Chin-Wen Lin "Application of SCM to PC Industry - the ROC Experience"	
12:00 - 13:00	**Lunch Break**			
13:00 - 14:20	Presentation by Prof. Mark Goh "Overview of Development of SCM for SMEs and the Singapore Experience"	Country Papers Presentation (II)	**Field visit (Inventec)**	**Open** (An optional visit to Chinese Handicraft Mart)
14:20 - 14:40	**Coffee Break**		**Coffee Break**	
14:40 - 16:00	Presentation by Prof. Jong-Dae Kim "Value Proposition		Syndicate Discussion	

	through Cross Company Process Innovation"		
18:00 - 19:30		**APO Farewell Dinner** Ambassador Hotel	

COUNTRY PAPERS PRESENTATION SUMMARY

1	Fiji	Anjna Deb	Paper presents role of development bank in aiding suppliers to do partnerships with SMEs. Highlights three mini cases of Fijian SMEs with other foreign players (Korean and Australia). SCM relationship in small enterprises are non-existent. SCM exists in medium to large enterprises with focus on export industries. Needs Government to address SCM issues. The working relationship in a supply chain partnership, or some form of alliance (working for the betterment of the operators, the business, and the economy) is emerging and apparent to varying degrees in Fiji. Issues related to SCM action include political stability, market and product identification, and technological improvement.
2	India	Shankar Haldar	Recognize shift from physical distribution, to logistics management system and over to SCM system. SCM system is just integrated logistics management system with technology. Views SME development from a government's perspective. Highlighted characteristics of small scale industries in terms of flexibility, cost of production, high capacity to innovate and export. Internal barriers can be handled by SMEs but there are many aspects of SCM beyond the control of the enterprise. The velocity of business is greatly impeded by external factors like lack of infrastructure, delay caused by Government procedures in customers excise and port formalities. The management of these external factors outside the control of the enterprise that cause delay becomes a major issue in SCM. Lack of financing and technology support were mentioned as main challenges.

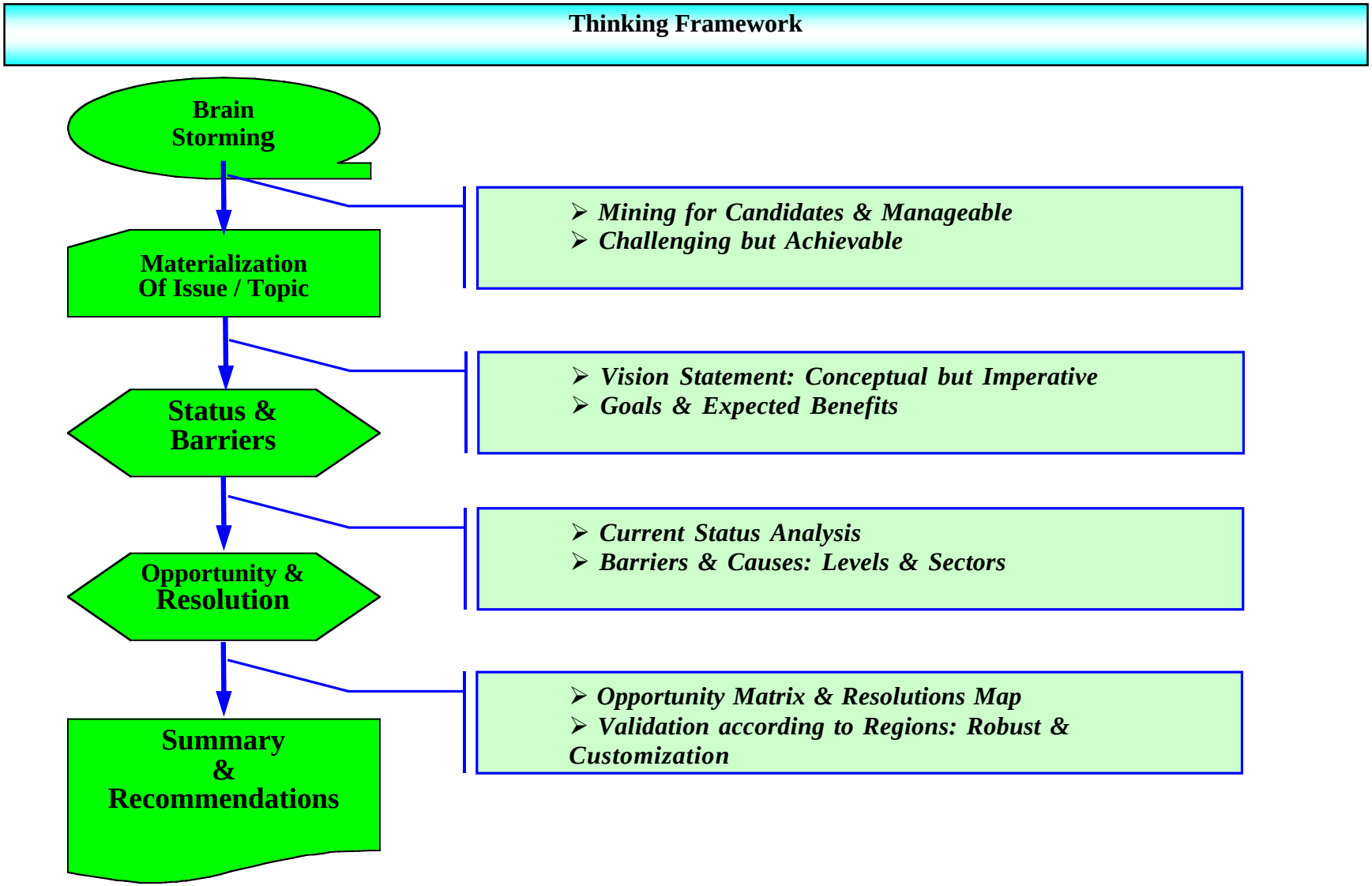
3	India	T S Gopi	Presents case of government enterprise (Scooters Kerala) responsible for assembling scooters. SCM is not the same as vertical integration, which normally implies ownership of upstream suppliers and downstream customers. SCM is active integration. Logistics is essentially a planning orientation and framework that seeks to create a single plan for the flow of product and information through a business. SCM builds upon this framework and seeks to achieve linkages and coordination between processes of other entities in the pipeline, i.e. suppliers and customers and the organization itself. Case of Kochin Agro machinery was included.
4	India	Chinmay Basu	Presents case study of Khadi, a traditional labor intensive hand woven cloth made of hand spun yarn. Paper highlighted the difficulty of keeping pace with market demand. About 1.5 million Indian people earn their livelihood from the Khadi sector. Issues highlighted include the lack of ability to produce goods to achieve common satisfaction as per changing needs, lack of strategic alliances between various producing institutions to build up a sustained supply chain, inadequate inventory management, restrictive laws & regulations, and lack of technology up-grading. There is a need to promote faster product development and to invest in an e-supply chain.
5	Indonesia	Oktiza Dwi Wenginarti	Paper presents case study on Indonesian cement company - PT Semen Padang. Mentions challenges in cement industry such as strong organizational vision for channel management in supply chain, technology and people. To win the competition, the company uses a cost leader strategy with efficiency. The SCM concept is a tool to reach the efficiency and the way to win the market because of synchronization of the activities. Paper also highlights the implementation of SCM starting from scheduling up to the retailer/end user.
6	Indonesia	Suhatsjah Sjamsuddin	Paper presents the Indonesian herbal medicine industry where the producers of herbal medicines are mostly small and middle level entrepreneurs. They do not have the technology of herbal medicine production and quality control, also their marketing techniques should be improved, through supply chain management.

7	Iran	Ramezanali Pourmojib	Paper examines impact of WTO on SMEs and their supply chains. Supply chain of the auto industry is confined to domestic market due to the large size of the market.
8	Korea	Sangmoo Shin	Paper presents study on Korean textile and apparel industry. Focus is on Quick Response (QR) as an important infrastructure for gaining competitive advantage in the industry. As a theoretical framework of this study, paper used stage two of Rogers' innovation diffusion theory. SMEs accounted for 99.1% of the number of establishments and 74.4% of the number of employees in all industries. Paper recognizes that as the fashion market changes very rapidly in modern society, it is very important to get the market sales information, which reflects the actual and future demand of consumers, in real time. The fast flow of information will also lead to shortened lead-time and reduced inventory stock from the raw materials to the final products in the physical world.
9	Malaysia	Aldrin Husni Kamaruddin	Paper presents the local parts vendors' perspective of the Malaysian automotive industry and the impact of AFTA on the supply chain of the automotive market. The effects of seamless and boundary less supply chain is shared as a concern for Malaysian SMEs. For local vendors, the issues at hand are related to cost consciousness internally and externally, extending marketplace beyond national economy, and greater alliancing with competitor automotive makers in neighboring countries.
10	Mongolia	Samdan Batmunkh	Paper presents review of SCM in Mongolia and a case study of the Zuun Kharaa Vokka distribution company. Mongolia has 98% of enterprises as SMEs. Key constraints for SCM for SMEs are due to policy framework, legal environment, limited domestic market, high exchange rate, high interest rate, lack of it, and infrastructure communication cost very high.
11	Nepal	Davendra Pradhan & Sherjung Adhikari	Paper presents low level of SCM development due to the extremely low level of education and the very small size of SMEs. The barriers that exist are due to geography and infrastructure. Internet development is still confined to built up areas. There is a new IT2000 policy to push for better

			SCM development for SMEs.
12	Nepal	Mahesh Kumar Agrawal	Paper presents case studies of the Kalimati vegetable market, Kuleshwar wholesale farm output market in Nepal. Highlighted a strong need for good management practices for SMEs especially on SCM. Paper also mentions typical barriers in SCM as per those found in other developing countries.
13	Philippines	Anton L L Sayo	Paper presents extremely short shelf life of fresh fruits (7 days before mango turning to yellow) and the mango agribusiness. Current emphasis is on supply management and production. Provides details on barriers and issues
14	Philippines	Marlene D Tablizo	Paper presents a policy perspective to SMEs in the food processing sector based in the food basket of Mindano in Southern Philippines. Highlights current initiatives of SCM focus on area clustering with 85% of all establishments are SMEs. The aim of industrial clustering is to provide a single integrated plan for marketing, distribution, manufacturing and purchasing along the supply chain. Main issue lies in sourcing of raw materials (sugar, chemicals, food) for food sector from other countries, which is affected by forex variations especially sugar.
15	Sri Lanka	Nanda Bandara Kohona	Paper focuses on an important tea industry in Ceylon. Paper walks through the tea production process. One key concern is on increasing competition among under developed countries for declining market shares. There is an explicit need for tea SMEs to focus strongly on SCM and overcome the internal barriers which include better management of the supply chain. Current plans include moving the tea auction (24 tons in 24 hours) to an online system
16	Thailand	Suchada Pocharoen	Paper presents the role of government in helping SMEs and SCM. The policy framework is well spelt out.
17	Thailand	Mana Chaiwongroj & Chantalux Mongkul	Paper focuses on supply chain of 711 stores (1711) in Thailand. 711 has key plans to improve SCM performance. The net result was faster turnaround time (25% productivity improvement) by 7 days (28 to 22 days). Now it takes only 22 days to construct and open new outlet from 45 days

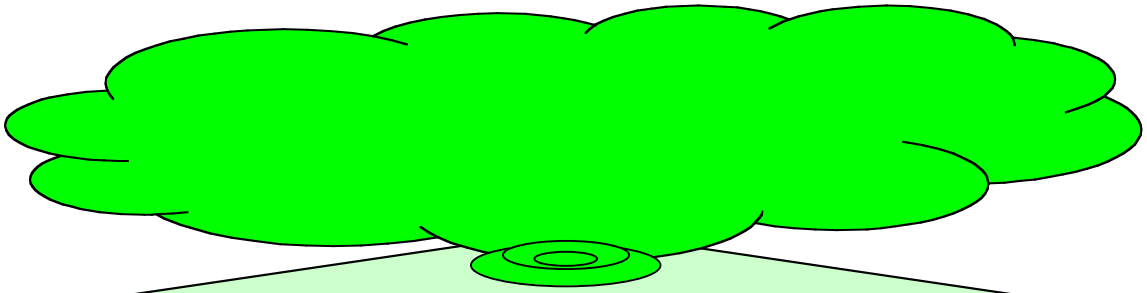
			previously, this was a result of early supplier involvement. 711 realize the need to be more process oriented and achieve process excellence.
18	Vietnam	Oanh Dao Thi Ngoe	Paper presents case study on Vital, a natural mineral water company based in the Northern province Thai Binh of Vietnam. Some of the issues confronting SMEs and their SCM involve the lack of familiarity of SCM as a concept.

ANNEX C


Thinking Framework
Brain Storming
Materialization Of Issue / Topic
Status & Barriers
Opportunity & Resolution
Summary & Recommendations
➢ Mining for Candidates & Manageable
➢ Challenging but Achievable
➢ Vision Statement: Conceptual but Imperative
➢ Goals & Expected Benefits
➢ Current Status Analysis
➢ Barriers & Causes: Levels & Sectors
➢ Opportunity Matrix & Resolutions Map
➢ Validation according to Regions: Robust & Customization

Materialization of Topic / Issue

Vision Statement



Goals & Expected Benefits

Goals

Expected Benefits

Status & Barriers: Current Status & Undesirable Effects

Current Status

Undesirable Effects

Status & Barriers: Barrier Analysis

Industry Organization & Governance Perspective	
Strategic Gap & Organizational Perspective	
Infrastructure Perspective	
Cultural & Other Perspective	

Opportunity & Resolution Map: Portfolio of Opportunity

Area	Opportunities / Enablers
Strategy Refinement & Organizational Alignment	
Process Alignment & Supporting Technology	
Infrastructure Dimension	
Government & Social Infrastructure	

Opportunity & Resolution Map: Resolution Map

Area of Improvement	Major Activities & Direction	Primary Responsibility

Opportunity & Resolution Map: Regional Deviation & Resolution

Area	Specific Effect & Regional Deviation	Potential Remedy / Resolution

Summary & Recommendations

Summary of Key Issues & Conclusions	
APO Member Country	
Industry Level	
Enterprise Level	