

Case Study Application of VSM to Transfer Pricing

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Received September 16, 2004; revised March 18, 2005

Transfer pricing is a challenging problem for MNEs. This research reports quantitative results from a survey of Taiwanese MNEs operating in China, indicating differences between method frequency domestically and internationally, and mainly authoritarian top down transfer pricing decision-making. A transfer pricing system, based on the viable system model (VSM), is proposed to introduce an open systems holistic approach. The proposed VSM transfer pricing system is applied in seven MNEs, and the outcome of the applications is reported from interviews with CEOs. The proposed VSM transfer pricing system was reported to lead to improved transfer pricing decision-making, because of more complete information, integrated information flow, people know their responsibilities, more accountability, fewer conflicts, more participation, and more proactivity.

KEY WORDS: case study; management systems; transfer pricing; viable system model.

1. INTRODUCTION

Transfer pricing is the process used to determine the exchange prices of goods and services transferred between organizational units (Atkinson *et al.*, 1997). Transfer pricing between units in the same country is difficult enough but for the multinational enterprise (MNE) there are extra complexities owing to variations in factors such as tax rates, customs duties, government legislation, business practices, and currency exchange rates. Furthermore, corporate managerial decentralization and profit-center autonomy concepts have emphasized the need for an effective transfer pricing system to ensure optimal allocation of corporate resources and to deliver a meaningful measure of divisional profitability (Anthony and Govindarajan, 1998).

The problems of transfer pricing remain largely unsolved even after the application of many theories (Grabski, 1985). However there is a growing concern for all MNEs with the advent of the global marketplace and international

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sourcing of product design and manufacturing (Doole and Lowe, 1999). It is a particular problem for Taiwanese MNEs operating in China because trade between Taiwan and China has risen to USD 8.7 billion in the first 4 months of year 2000 (Wang, 2000), and Foreign Direct Investment (FDI) in China from Taiwan has now increased to USD 26 billion (Tao, 2001).

As Taiwan enterprises' activities are increasing in China, there is rising concern about transfer pricing of both tangible and intangible properties including raw materials, fixed assets, services, capital financing, semi-finished and finished products. Transfer pricing is an important tool for allocating various resources in the divisionalized organization and as a contingent means for operations and strategy implementation against a dynamic market. Transfer pricing tax policy drives companies to review continuously what changes to make, how to communicate and implement the changes, and how to monitor the effects on resource allocation. However, transfer pricing guidelines are lacking for MNEs which makes it difficult for resources allocation to fully reflect the relevant economic, strategic, organizational, and behavioral characteristics.

From all these aspects, MNEs would benefit from a transfer pricing system which can adapt and respond to the rapid changes of the dynamic international marketplace, deal with cross-cultural factors, and exploit the recent advances in information technology.

2. THIS STUDY

2.1. Aim

The aim of this paper is to report on an investigation of the potential of the viable system model (VSM) as a way of developing an open systems holistic approach to transfer pricing. This involved proposing a transfer pricing structure based on the VSM and then examining its suitability and efficacy for Taiwanese MNEs operating in China by interviews with users.

2.2. Method

The study was part of a survey in 2000/2001 of the transfer practices of Taiwanese MNEs operating in China (Chen, 2004), which used a questionnaire to discover both quantitative and qualitative primary data about transfer pricing objectives, methods, policies, and decision-making. The questionnaire was distributed to 282 Taiwanese MNEs operating in China, and usable responses were received from 70 companies, thus the response rate was 24.82%.

Ten respondent CEOs, all using, or about to introduce, an integrated real-time information system (e.g. ERP), agreed to participate in follow-up interviews to provide both cross-sectional and longitudinal qualitative feedback particularly

relating to the application of a proposed VSM transfer pricing structure. This paper reports on those interviews and in addition reports some of the quantitative findings to indicate why these MNEs need an improved transfer pricing decision-making system.

3. BACKGROUND TRANSFER PRICING THEORY

Cook (1955) advocated a transfer pricing system based on market prices, at least as an ideal, whereas Dean (1955) recommended using negotiated competitive prices. Hirshleifer (1956, 1957), and Gould (1964) suggested a micro-economic transfer pricing model involving a systematic framework for the analysis of the economics of transfer pricing, but simplifying and restrictive assumptions limited its utility. Subsequent research favored a linear programming approach, which used opportunity cost as a general rule for pricing intracompany transactions (Onsi, 1970; Samuels, 1965). The characteristics of linear programming imply that the optimal solution of the primal is equivalent to the optimal solution of the dual. The optimal values of the dual are called "shadow prices." Shadow prices show the opportunity cost of a unit of scarce resources in terms of the amount of contribution that could be added if the intermediate division increases its productive capacity by adding one more unit of the scarce resource. But as Bernhard (1968) pointed out shadow prices are accurate measures of opportunity cost only if the product mix does not change and resources are used efficiently.

Chang (1995) noted that an international transfer pricing strategy must achieve nine general objectives: (1) a system of performance evaluation; (2) motivated subsidiary managers; (3) goal congruence; (4) reduced income tax; (5) reduced tariffs on imports/exports; (6) minimized foreign exchange risk; (7) minimal conflict with host government; (8) cash flow management; and (9) competitiveness in the international market. Hansen and Mowen (1997) concluded that transfer pricing must accomplish two main objectives: performance evaluation and optimal overall company profit. While Anthony and Govindarajan (1998) observed there is a difference between the transfer pricing that management would use solely for control and the legally allowed transfer pricing to minimize tax and tariff duties. There appeared to be two extremes of policy. Firstly, MNEs may allow subsidiaries to deal at arm's length and take the consequences of taxes and tariffs. In this case international transfers would be similar to domestic transfers. The alternative policy was for corporate headquarters to control international transfer pricing to minimize total corporate costs, maximize dollar cash flow, or optimize the mix of currency positions.

Grabski (1985) extensively reviewed the transfer pricing literature and concluded that the effect of organization structure on transfer pricing needed investigation. Spicer (1988) set out to develop a theory of transfer pricing and recognized that transfer pricing theory had to take into account several dimensions of

transactions concerning product investment characteristics, frequency and volume, level of uncertainty and complexity, relative economies of scale, and contractual hazards.

Spicer pointed out that an organizational theory of the transfer pricing process requires wide consideration of relationships among a firm's diversification strategy, its intra-firm transactions, its organization structure, and its management accounting and control systems. Mintzberg (1983) and Grabski (1985) concluded that transfer pricing research needed to address the integrating process covering organization structure, evaluation procedures, and the transfer pricing system together with control and co-ordinating mechanisms.

Spicer (1988) described a model of the process of negotiation to resolve conflict and reach arbitration between units in transfer pricing decision-making. Spicer recognized that the supplying division has cost-based information and can use cost plus pricing to propose a transfer price, while the buying division has market-based information and bids from other possible suppliers to propose a transfer price. The two divisions negotiate from these two perspectives, and may go through a conflict stage to reach an arbitration position. However, problems arise when the transferred product has a degree of customization, which eliminates accurate market information.

Thomas (1980) thought that no transfer pricing system will be right in all circumstances because an allocation method that is behavior-congruent with respect to one decision and set of circumstances need not be with respect to others, and transfer pricing allocations can be perverse with respect to decisions involving the evaluation of divisional managers' performance. Also, Grabski (1985, p. 482) observed that "Conflict might be a symptom of an inadequate organizational structure" and concluded that use of only one of the transfer pricing models could not produce optimal transfer pricing decision-making at all times.

Transfer pricing problems are multidimensional and complex (Tang, 1993). In particular, there can be difficulties in balancing the centralization versus decentralization issue (Kaplan, 1983; Kaplan and Atkinson, 1998). Total decentralization means absolute power for responsibility centers, but this will lose the potential synergy gains from co-operation (Abdallah, 1989) and can lead to serious dysfunctional effects for the corporation (Abdel-Khalik and Lusk, 1974; Thomas, 1980).

The implication is that the MNE must decide whether it wants motivation, profit maximization, performance evaluation, or risk sharing for the transfer pricing strategy. Thus, if the focus is on performance evaluation, the units must have autonomy, but if profit maximization is the aim, then there is need for centrally controlled transfer pricing, however risk-sharing must mean some sharing of profit between units. Acknowledging this centralization/decentralization dilemma for the MNE, how can units be given autonomy to motivate them to generate profits, and

the results be used for performance evaluation, while at the same time coordinating the units to achieve profit maximization for the MNE?

The solution may be a transfer pricing decision-making structure based on an open systems holistic approach, e.g. the Viable System Model (VSM). The need for an open systems holistic approach is consistent with the importance of structure, autonomy, integrating processes, centralization–decentralization balance, internal and external transactions, control, co-ordination, evaluation, and environmental links referred to in the transfer pricing literature. Also, with the advent of electronic commerce and “cybernetic” web organizations, the cybernetic VSM potentially offers a solution to information asymmetry problems and dysfunctional behavior resulting from autocratic transfer pricing decisions.

4. PROPOSED VIABLE SYSTEM MODEL (VSM) FOR TRANSFER PRICING

Beer (1979, 1981) put forward the VSM as a design to deal with organizational complexity involving an open systems holistic approach in contrast to traditional analytic/reductionist models. Viable means that the system is able to respond successfully to even unanticipated imposed changes. The VSM consists of five main management functions—operations, co-ordination, control, intelligence, and policy—which are linked by specific information and control flows. These flows include information feedback loops which generate organizational closure for operational stability. The five main management functions are called system 1, system 2, system 3, system 4, and system 5.

System 1: This represents the operational processes of the organization. It can contain several parts. Each part is a viable system itself (which contains its own five systems). Each system 1 interacts with the other parts of system 1 and with the environment. Its own local management has delegated autonomy to absorb the variety of its environment but receives instructions from, and reports to, higher level systems.

System 2: This function co-ordinates the activities of all the system 1 parts. Since the system 1 parts have some autonomy, there needs to be co-ordination to ensure that their activities do not conflict between themselves or with the viable system. Using ERP II, for example, this system can receive and monitor real-time costing, pricing, buying, and planning information from system 1 parts and ensure it is nonconflictual, without need for system 3 real-time intervention. Effective co-ordination can maximize the productive capacity of the whole organization.

System 3: This is a control function for all of the system 1 parts. It receives information directly from each system 1, from system 2 coordination, and by using the system 3 audit channel. System 3 is responsible for the day-to-day operation of the viable system, by receiving and transmitting information to both higher and

lower levels, and ensures that resources are distributed to the system 1s and that policy is implemented.

System 4: This is the intelligence function. This function gathers internal information from all other systems and external information from the environment, and identifies environmental threats and opportunities. It communicates its findings to system 5 and system 3. System 4 contains organizational departments such as corporate planning, market research, and research and development.

System 5: This part of the viable system decides the policy of the viable system based on the information received from system 3 and system 4, using a “multinode” of interacting managers. The updated policy decisions are given as instructions to relevant parts for implementation.

Both Flood (1999) and Jackson (2000) have critically examined the strengths and limitations of the VSM, and indicated that provided the VSM usage pays attention to avoiding its potential limitations (principally the possibility of ineffective democracy), the strengths of the VSM can benefit organizations. Clearly, those MNEs with the most holistic, responsive, and rapid transfer pricing decision structures will be better able to adapt successfully to change, which highlights the potential advantages that could result from using the cybernetic ideas of the VSM in the transfer pricing decision-making design.

The proposed VSM model for use as a transfer pricing (TP) decision structure is shown in Fig. 1. It consists of five systems—TP Policy; TP Intelligence; TP Control; TP coordination; TP operational units—linked by exchange TP information flows between the systems and with the local TP environments and the wider TP global environment. The TP control oversees the resource allocation

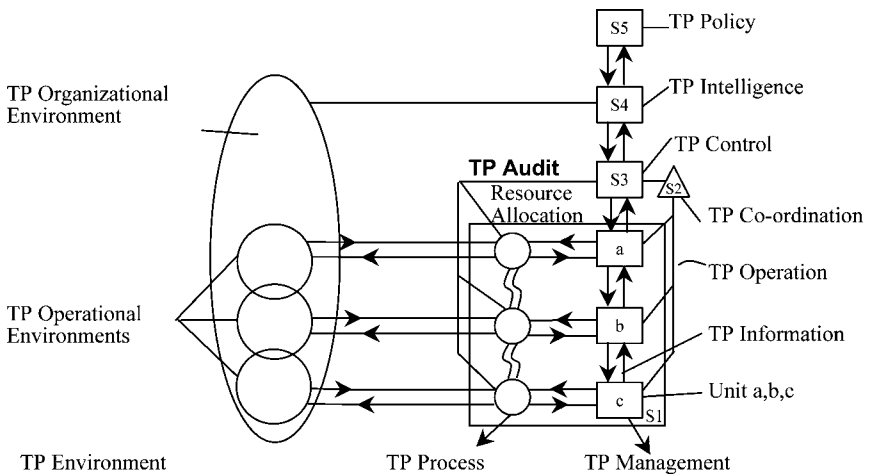


Fig. 1. Proposed viable transfer pricing system.



Table I. Transfer Pricing Method Usage

Pricing method			Within Taiwan domestic		From Taiwan to China international		
Category	Type	Method	Frequency	%	Frequency	%	
Cost oriented	1. Variable cost	1.1. Actual	2	2.5	1	1.3	
		1.2. Standard	8	10.0	4	5.2	
		Subtotal	10	12.5	5	6.5	
	2. Full cost	2.1. Actual	4	5.0	0	0.0	
		2.2. Standard	3	3.7	3	3.9	
		Subtotal	7	8.7	3	3.9	
	3. Cost plus	3.1. Actual variable cost	3.1. Actual	17	21.3	4	5.2
			3.2. Actual full cost	22	27.5	25	32.4
		Subtotal	39	48.8	29	37.6	
		Subtotal (cost oriented)	56	70.0	37	48.0	
Non-cost oriented	1. Market based	1.1. Market	8	10.0	14	18.2	
		1.2. Market price less internal cost saving	2	2.5	9	11.7	
		Subtotal	10	12.5	23	29.9	
	2. Other non-cost oriented	2.1. Negotiated price	2.1. Negotiated price	12	15.0	14	18.2
			2.2. Mathematical programming	0	0.0	0	0.0
			2.3. Dual price	1	1.3	2	2.6
			2.4. Other	1	1.2	1	1.3
		Subtotal	14	17.5	17	22.1	
	Subtotal (non-cost)	24	30.0	40	52.0		
	Total			80	100.0	77	100.0

between the operational units as decided by the TP policy committee of both headquarters (HQ) and unit managers who have access to both local and global relevant TP information.

5. FINDINGS

5.1. Quantitative Information from Questionnaire Survey

Table I reports the transfer pricing (TP) method usage for domestic (within Taiwan) and international (from Taiwan to China) transfers of goods or services between units of the Taiwanese MNEs.

The number of respondents in the survey was 70 MNEs. Companies were asked to categorize their TP methods in one or more of 12 types of transfer pricing.



Table II. Transfer Pricing Policies Decision Makers

Method	Firms	%
Top executives	36	51.43
Top executives of your parent after close consultation with your China units	20	28.57
Executives of the China units	14	20.00
Other methods	0	0.00
Total	70	100.00

The total number of methods for “within Taiwan” is 80, and for “Taiwan to China” is 77, because some firms use more than one method.

The actual full cost plus method had the highest individual usage for both within Taiwan domestic (27.5%) and Taiwan to China international (32.4%). In terms of category, the cost plus method was the most preferred method both for transfers within Taiwan (48.8%) and Taiwan to China international (37.6%). However, the results reveal a major difference between domestic and international transfer pricing because within Taiwan the highest preference was for cost-oriented categories (70%) whereas for Taiwan to China international transfer pricing the highest preference was for non-cost-oriented transfer pricing (52%).

In general, it would be expected that MNEs without an effective TP system would use the cost-based method because this relies on internal information.

The companies were asked to report the primary TP decision-maker. Feedback data from the 70 firms (Table II) shows that the primary decision-maker of the transfer pricing method is the highest authority of the parent company and no intermediary consulting was used (36 firms, 51.43%); followed by the highest authority of the parent company after consulting with subsidiaries (20 firms, 28.57%). These results reveal the highly centralized nature of transfer pricing decision-making in Taiwanese MNEs in China, which is therefore likely to be based on incomplete internal and environmental information.

Companies were asked to indicate their corporate policy toward outsourcing by their MNE units. The results are given in Table III, which shows that almost

Table III. Corporate Policy Attitude Towards Outsourcing

Outsourcing attitude	Taiwan units		China units	
	Number	%	Number	%
With headquarters' approval	47	68.58	53	75.71
With complete freedom	18	25.71	10	14.29
Prohibited	4	5.71	7	10.00
Total	70	100.00	70	100.00

Table IV. Final Authority for Conflict Settlement

Authority	Firms	%
CEO of Taiwan parent company	37	52.86
Financial executives of parent company	17	24.29
Negotiation between the units involved	12	17.14
Others	4	5.71
Total	70	100.00

70% of Taiwan units and over 75% of China units require headquarters approval for outsourcing of supplies. About 25% of Taiwan units are reported to have complete freedom, while this is true for only about 15% of units in China.

Transfer pricing conflicts between units were mostly resolved by the parent company CEO (37 firms, 52.86%), followed by the financial executives of the parent company (17 firms, 24.29%), while negotiation between the divisions occurred in only 12 firms (Table IV). This means that in more than 75% of cases the conflict settlement is a centralized decision from the MNE headquarters, further indicating the centralized nature of transfer pricing decision-making in Taiwanese MNEs.

This centralized decision-making bias strongly suggests that transfer pricing information asymmetry problems must exist in most Taiwanese MNEs.

5.2. Findings from Qualitative Interviews with 10 CEOs

5.2.1. Cross-Sectional Face-to-Face Interviews with CEOs in 2000/2001

Rather than include the full lengthy interview transcripts of each of the 10 CEOs, the main points from the interviews are discussed in relation to the potential of the VSM as a transfer pricing decision structure.

All the interviewees requested anonymity so that their comments could not be directly associated with their MNEs, which supported the conclusion that transfer pricing information is of a sensitive confidential nature. The quantitative environmental study findings were accepted with interest but without criticism by all the CEOs.

The interviewees thought that traditional transfer pricing structures lead to asymmetry of information, causing unit managers' dysfunctional behavior. For example, CEO 3 decided transfer pricing policy but consultation with other parties may or may not occur, and CEO 3 gave no answer concerning information sharing. CEOs 1, 2, 9, and 10 referred to the centralization/decentralization management dilemma of MNEs. They recognized that the granting of a specified degree of autonomy to the divisional managers to make local transfer pricing decisions could produce timelier and more relevant decision-making, because only the divisional

manager can be fully aware of the complexity of the local situation in order to achieve subunit profits. However, this decentralization risked the overall cohesion of the MNE and the overall corporate profitability. CEOs 4, 5, 6, 7, 8, 9, and 10 had already introduced the ERP system to their MNEs to bring more accurate and timely information exchange, and all of the CEOs thought ERP was, or would be, advantageous because it enabled better transfer pricing management.

The interview findings, particularly from CEOs 4, 5, 6, 7, 8, 9, and 10 who are already using ERP, revealed that information flows for smooth and timely communication of essential information can be established in the MNE, particularly using online systems such as ERP linking all divisions. Indeed, users of ERP reported that it produced accurate real-time information and this led to significant operating cost savings and efficiency increases. However, several CEOs (3, 5, 6, 7, 9, and 10) pointed out that ERP combined with the viable transfer pricing structure was in theory even more advantageous because ERP information alone had limitations. For example, CEO 10 indicated that the VSM is important because it can bring wider involvement, flexibility, and creativity, whereas the ERP alone may produce a too authoritarian “command and control” system. CEO 1 said that he thought the VSM design would be useful because it can create harmony, because there is participation and information sharing. Overall, the interviewees pointed out that the interconnected VSM transfer pricing decision structure was potentially important because of cultural factors, arbitration mechanisms, conflict settlement, transparency, involvement, innovation, creativity, flexibility considerations, response time, and decision quality. All 10 CEOs recognized the value of the proposed VSM five functions TP structure particularly when supported by information technology systems because it has the potential to allocate resources optimally from both internal and external intelligence and to set the most appropriate global transfer pricing policies which are also relevant to important factors arising in the subsidiary unit local environment. In fact, both CEO 3 and CEO 9 indicated that combined use of ERP and VSM transfer pricing decision structure was essential. However, the need for an organizational culture shift from authoritarian to more consultation to implement the combined VSM and ERP system most effectively was also indicated by CEOs 3, 4, and 7.

Thus, all 10 CEOs considered that, in theory, the five functional TP model based on the VSM could offer great help to the transfer pricing process because it can influence, monitor, and coordinate transfer pricing of each Taiwan and China unit and feedback the important local operating and environmental influences of each unit to the headquarters which is then more aware of the whole MNE situation, and of the larger international environmental picture. CEO 3 and CEO 5 had actually applied the VSM transfer decision structure. CEO 3 said use of the VSM transfer pricing structure produced improved information sharing, coordination, and transfer pricing negotiation. CEO 5 reported that change to a VSM

transfer pricing structure with ERP had improved transfer pricing information flow, response time, and decision quality.

5.2.2. Longitudinal Follow-Up Telephone Interviews (April 2003)

To further strengthen the qualitative research of this study, follow-up telephone interviews with the 10 previously interviewed CEOs were carried out to provide longitudinal data. This follow-up research was aimed at overcoming the potential criticism that the support for the proposed VSM transfer pricing structure, voiced by the CEOs in Section 5.2.1, resulted because Chinese culture prevented critical comments, and they may not actually apply the ideas in practice.

The telephone follow-up interviews revealed that 7 of the 10 CEOs had applied the proposed VSM TP structure linked by ERP software. These CEOs (1, 2, 3, 5, 6, 7, and 10) who had applied the VSM transfer pricing decision structure all said that the new structure had led to improved transfer pricing decision making. The reasons given for the improvement were because there is more complete information, integrated information flow, people know their responsibilities, more accountability, fewer conflicts, and more participation. Compared with the situation before the introduction of the proposed TP VSM structure, users said there were fewer TP problems after introduction. However, more time may bring further improvements because three CEOs (3, 5, and 10) indicated that culture change is slow, and CEOs 6 and 7 indicated interactions between participants in the VSM transfer pricing structure are not yet ideal.

Three CEOs (4, 8, and 9) had not applied the proposed VSM transfer pricing structure. CEO 4 found introduction of ERP alone had lessened conflict, while CEOs 8 and 9 thought the proposed VSM transfer pricing structure would be too complicated in practice. CEO 3 agreed to a more in-depth consideration of before and after introduction of the proposed VSM TP structure, as reported in the next section.

5.2.3. Longitudinal Follow-Up of CEO 3's MNE

The first interview with CEO3 was carried out in October 2000. At that time, CEO3 was interviewed and agreed to apply the proposed VSM structure to transfer pricing decision-making. The initial feedback from CEO3 was positive. Briefly, before VSM structure, there was no information sharing, no coordination, and individual profit motivation. Using the VSM structure, there was on-line information sharing, TP intelligence, TP control, TP coordination, and TP audit via HQ ERP hub server.

Follow-up interview with CEO 3 on March 27, 2003 (nearly two and a half years of using the proposed VSM transfer pricing structure) produced the comparison information shown in Table V.

CEO 3 had already decided to use the SAP ERP II system, that is ERP, SCM, and CRM (Enterprise Resource Planning, Supply Chain Management, and

Table V. CEO 3's MNE—Before and After VSM

Points	Before VSM and ERP	After VSM and ERP
1. Main TP objective	Performance evaluation	Overall consolidated profit
2. TP conflict settlement and frequency	By CEO; some conflict	Between units, lower conflict
3. Outsourcing	Prohibited without HQ approval	Complete freedom for non-core items
4. Final authority	CEO all	Non-core between units; core by CEO
5. TP method	All cost plus	Some market price and full cost
6. Coordination	Less	More
7. Information	Fragmented, historical	Integrated, real time
8. Information sharing	Selective	Full
9. Capacity utilization and productivity	Not ideal	Higher
10. TP function mechanism	Resources allocation tool	Resources collaboration tool
11. TP factors for units	Performance evaluation; competitiveness	Optimal group result
12. TP factors for HQ	Goal congruence	Consolidated profit, network information integration

Customer Relationship Management), to integrate all departmental activities and interlink group companies in Taiwan and China for internal transfers to offer a dynamic transfer pricing and rapid environmental response. However, the MNE needed a new structure to materialize this vision, and thought the proposed VSM transfer pricing structure would be appropriate to replace the existing decentralized profit centers. Therefore, this new structure was applied with a Business Warehousing databank server (as VSM system 4 function) to bring together internal and external information judged to be vital by policy (set by system 5) in Taiwan HQ, and with the Taiwan HQ also implementing VSM systems 2 and 3. The policy is set or modified during regular HQ and unit managers summit meetings (i.e. the system 5 multinode). The Taiwan and China units are the VSM system 1s with defined responsibilities and information flows, including supplying specific local unit information (as specified by policy) to other systems and real-time cost, pricing, buying, and planning information to a coordinator (system 2) using the ERP II system. The system 2 coordinates activities of units in order to maximize production capacity utilization of the whole organization. All on-line information is available to the overall controller (system 3), who only needs to intervene if contacted by the system 1 units, if there is departure from policy or if there are conflictual problems not resolved by system 2. The new structure with the ERP II system provides designated responsibilities and a more holistic real time picture for better TP decision-making.

The new system has worked well, there is more agreement and less internal conflict, and after over 2 years people have become more familiar with their

responsibilities and adopted the new culture of participation and information sharing. Maximizing overall group profit is the target for everyone, and there is reportedly more proactivity now.

6. DISCUSSION

From the literature, there can be little doubt that transfer pricing is an important tool for multinational enterprises to allocate and re-distribute resources among the divisionalized organization in a dynamic market environment particularly in the new age of globalized production and marketing. Taiwanese MNEs operate in China in order to develop and maintain competitive advantages, and consequently appropriate transfer pricing is particularly important to them. However, prior to this research, there was no published information regarding transfer pricing practices among Taiwanese MNEs operating in China.

In the qualitative interviews with 10 CEOs of Taiwanese MNEs operating in China, all 10 CEOs accepted the quantitative findings about transfer pricing methods and practices with interest but without criticism because they found the findings to be generally consistent with their own transfer pricing method usage and practices. Therefore, with the quantitative survey results reported in this research, CEOs now have a guide regarding how their transfer pricing methods usage compares with Taiwanese MNEs in China.

Achieving optimal overall profit, performance evaluation, coordination, and unit autonomy without dysfunctional behavior seems a difficult problem for MNEs, owing to the centralized/decentralized structure dilemma. If the transfer pricing objective focus is on performance evaluation, the unit must have autonomy, freedom for outsourcing, and cost-plus transfer pricing but, in this study, corporate policy attitude toward outsourcing was for Taiwan units 25.71% with complete freedom, while for China units only 14.29% had complete freedom, perhaps explaining the higher frequency of non-cost transfer pricing internationally.

The survey found that final authority for any conflict settlement between units was CEO or CFO of parent company for 77.15% of respondent MNEs, indicating that transfer pricing information asymmetry problems need resolution for effective decision-making. Furthermore, the interviewees stressed the need for relevant and timely transfer pricing decision-making because of fast changing environmental variables, which requires accurate, relevant and timely operational, environmental, and market intelligence.

Use of ERP to share and disclose transfer pricing information on-line in real time can help overcome the information asymmetry, which should enhance headquarters ability to decide transfer pricing policies and provide improved conflict negotiation and arbitration process in a cost and time effective way. In the survey, it was found that 61.3% of the respondent Taiwanese MNEs were already using ERP

technology to try to keep aware of internal factor changes. However, the interviews revealed that use of the ERP system alone generally appeared to be aimed at centralizing transfer pricing management control, because its aim was to further enable the HQ ability to take isolated transfer pricing decisions. Therefore, ERP alone may actually lower the opportunities for gaining advantages from the widened inputs of a participatory management system. Also, there is the danger that continuous real-time on-line information transmission could swamp top management with an overwhelming variety of detailed data, unless there is an appropriate management structure.

Most of the interviewed CEOs showed enthusiasm for applying the proposed VSM transfer pricing structure because it can protect management from being swamped with too much detail and overcomes the centralization/decentralization dilemma by allowing sufficient autonomy to maximize local motivation and profits, and yet simultaneously can provide a control, information, and decision structure which can coordinate divisional efforts to maximize MNE group profit.

The follow-up longitudinal interviews revealed that 7 of the 10 CEOs were applying the VSM transfer pricing structure and all 7 reported improved TP decision-making with fewer conflicts. The consensus was improved decision-making because of more complete information, integrated information flow, people know their responsibilities, more accountability, fewer conflicts, and more participation. The feedback suggested that use of the VSM transfer pricing structure helped management become more proactive. Furthermore, the longer term applicability of the proposed VSM TP design was indicated by the many positive outcomes from using the viable system transfer pricing design for over two and half years.

An effective working design solution appears to be for the HQ to set up the ERP/SCM system hub using real time information for transfer pricing intelligence (system 4), allowing response to transfer pricing environmental changes for transfer pricing policies (system 5), control (system 3) influencing transfer pricing process management (system 1), with divisional units access to local databank information but with transfer pricing coordination to maximize overall productive utilization (system 2). This resolves information asymmetry and counters dysfunctional problems.

7. CONCLUSIONS

Transfer pricing continues to be an important tool for multinational enterprises to allocate and re-distribute resources among the decentralized organization to try to optimize profitability in a dynamic global market environment.

For Taiwanese MNEs operating in China, the TP methods within Taiwan were mainly cost-oriented (70%), whereas for Taiwan to China international methods were mainly non-cost-oriented (52%).

The primary transfer pricing decision maker was most often the parent company CEO. Outsourcing overwhelmingly required HQ approval. Any conflicts were settled at HQ in 77.15% of cases. These findings indicated mainly authoritarian top down transfer pricing decision-making, prior to use of the proposed VSM TP structure.

Interviews with 10 CEOs, indicated application of the proposed VSM transfer pricing model by 7 MNEs who reported an overall improvement in transfer pricing decision-making because there was more complete information, integrated information flow, people knew their responsibilities, more accountability, fewer conflicts, more participation, and more proactivity. Benefits were still being reported after longer term application.

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