

# Accounting Information and Supply Chain Management Practices in the Era of IR 4.0: The Case of a Japanese Subsidiary in Malaysia

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## ABSTRACT:

**Manuscript type:** Research paper

**Research aims:** This study aims to explore the interplay between accounting information and supply chain management (SCM) practices of a Malaysian subsidiary whose shares are largely owned by a Japanese parent company.

**Design/Methodology/Approach:** This study follows a qualitative, case study methodology. The major sources of this study's data were collected through semi-structured interviews, documentary reviews and informal observations.

**Research findings:** Influenced by its parent company's management style that concerns aligning business practices with the fourth Industrial Revolution (IR 4.0), the case company has subscribed to a set of accounting systems and SCM practices to manage its complex business activities. As much as accounting systems influence its SCM

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practices more naturally, SCM practices also influence its accounting practices quite extensively. On the one hand, it has used accounting reports to manage its cashflow, to develop its marketing plan, and to monitor its performance. On the other hand, its SCM practices have shaped the ways pricing and performance measures are set with much negotiation.

**Theoretical contribution/Originality:** Using the Resource Based View (RBV) as a theoretical lens, this study analyses the role of accounting within the context of the supply chain network by exploring how accounting systems influence and/or get influenced by SCM practices.

**Practitioner/Policy implications:** The findings are important in shedding light on the interplay between accounting and SCM in view of their strong networks and mutual roles in relation to the natural supply chain setting of a Japanese subsidiary company by relating to the IR 4.0's demands.

**Research limitation/Implications:** This study is based on one case study and that the specific accounting information that were reported in the company were not identified. This study has revealed that information sharing has streamlined SCM and influenced performance as members in the supply chain network are able to collaborate in a more integrated and seamless manner to enhance the organisational competitive advantage as highlighted by the RBV theory and as emphasised by IR 4.0.

**Keywords:** Accounting Systems, Case Study, Japanese Subsidiary, SCM Practices, IR 4.0

**JEL Classification:** M41

## 1. Introduction

Supply chain management (SCM) has been hailed as an important business practice that involves managing supplies and processes through various stages of a project, product or business deliverable. It concerns overseeing processes that integrate suppliers to work efficiently together right from the first stage to the customers' hands, taking into account supply and demand along the way. Christopher (2016) defines a supply chain as the network of organisations (or parties) involved in the linked upstream and downstream activities that add value to the products and/or services delivered to customers. In view of the complexity and dynamics of supply chain as implied in such network, there is a need for sound SCM. SCM concerns managing the total flow of a distribution channel from supplier to the ultimate customers and involves integrating key

business processes to improve the overall business and/or supply chain performance (Cooper et al., 1997; Gunasekaran et al., 2001; Kumar et al., 2020).

Indeed, managers appear to rely on accounting information to make and/or support informed decisions related to supply chain activities in view that it promotes integration (Gunasekaran et al., 2001; Christopher, 2016). In the era of the fourth Industrial Revolution (IR 4.0), organisations require information systems structure beyond the usage of the commonly used software tools to make insightful decisions (Ashaari et al., 2021). IR 4.0 technologies enable organisations to share and analyse data using advanced analytics, which can facilitate them in making decisions and also reducing the complexities of monitoring their supply chain (Mageto, 2021). Accounting is recognised as a language that facilitates communication and negotiation along the supply chain (Agndal & Nilsson, 2010). It is capable of resolving issues that revolve around information asymmetry and behavioural uncertainties (Agndal & Nilsson, 2010). Accounting information in a company is therefore vital to improve supply chain management. However, there appears to be limited research on the role of accounting information related to the supply chain activities and relationships of an organisation (Hezabr, 2018).

In managing the integration of diverse supply chain activities and relationships, the role that accounting systems plays is deemed crucial (Free, 2007). While accounting can influence the stability of supply chain activities and relationships, it can also pose some danger as it is often associated with conflict and ambiguity when dealing with SCM (Chua & Mahama, 2007; see also Seal et al., 2004). For example, particular accounting systems may not function well in certain relationships due to a lack of integration, and particular accounting practices that are used to determine the product cost and price might only be useful up to a certain level of linkage, but not the entire supply chain. Thus, accounting functions need to be considered and understood in a larger set of connections beyond buyer-seller relationships

Therefore, based on the integration between various supply chain activities and relationships as documented by prior research, this study will analyse the role of accounting (and its impacts) within the context of the supply chain network in terms of how accounting systems (particularly the accounting information that they produce) influence and/or get influenced by SCM practices of a Japanese

subsidiary that involves distributing and selling electrical and electronic products throughout Malaysia. We chose this subsidiary as our research subject in view of its significant SCM practices that were mainly shaped by its Japanese parent company's direction and practices, as well as its strong emphasis on economic returns which had significantly shaped the role that accounting plays. In terms of managerial implications, this study seeks to shed light on the interplay between accounting and SCM. This because they provide practical contributions that have important implications on SCM practices particularly, in terms of their mutual roles in relation to, and implications on the natural supply chain setting. In terms of academic implications, this study seeks to contribute to the body of knowledge on the usage of specific accounting information that is typically reported within the context of SCM, under the Resource Based View theory lens.

The remainder of this paper is organised as follows: Section 2 reviews the supply chain management and the role of accounting. Section 3 describes the underpinning theory of this study, while Section 4 details the methodology employed. Section 5 disusses the results. Finally, Section 6 concludes the study by providing research implications.

## **2. Literature Review**

### **2.1. Supply Chain Management (SCM)**

The extant literature has defined SCM as the act of managing all activities, data, human and financial resources in relation to the operation and transformation of goods and services upward, which start from engaging suppliers of raw materials, parts and components in anticipation to meet customers' needs and demands (Weele, 2000; Christopher, 2016; Hugos, 2018). In more broad terms, SCM integrates the process between suppliers and customers to reduce costs and to better manage inventories. For organisations to compete in a challenging global environment successfully, there is a need for them to manage the supply chain effectively and efficiently (Cooper & Ellram, 1993; Waweru et al., 2004; Hugos, 2018).

Supply chain concerns "passing" of materials between entities that are involved in manufacturing products and transferring them to end users through supply chain activities and relationships. SCM is implemented to effectively reduce costs and to efficiently allocate

resources (Christopher, 2016). Well managed SCM practices have the tendency of improving customer satisfaction through the increase of inventory availability and reduced order cycle time (Hugos, 2018). It is not uncommon in the SCM environment that a customer-enriching supply focus is inclined to develop innovative solutions and to synchronise the flow of products, services, and information so as to create individualised sources of customer service value. Driven by economic performance, SCM encourages organisational members to work together and build partnerships with each other to enhance the competitive advantage of the supply chain and thus maximising profit (Mentzer et al., 2001).

Studies conducted by Lee & Whang (2004) and Towill et al. (2000) reported some success stories of such well-known organisations as Dell, General Electric, Cisco, and Ford in reaping significant benefits from SCM practices. Generally, they indicated the need for these organisations to manage their supply chain relationships that were complex, and to become more flexible in responding to changes in customers' demands. Figure 1 depicts the three different types of supply chain relationships.

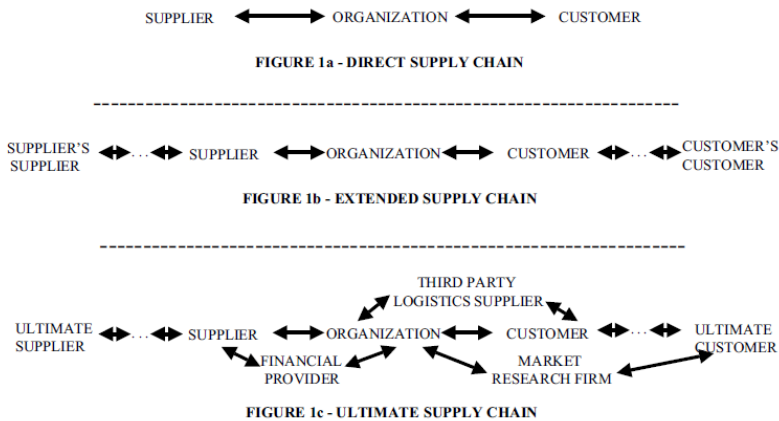


Figure 1: Types of Supply Chain Relationships (Mentzer et al., 2001)

Even though one may recognise that some activities and relationships are complex over the others, supply chain in general comprises all organisations (and/or parties) involved in the upstream and downstream movements of products and/or services

and emphasises the flow of information between suppliers and customers (Mentzer et al., 2001). As shown in Figure 1, the complexity of activities and relationships between organisations is different and this determines a particular reach of SCM that ranges from purchasing function to distribution function.

## ***2.2 Information Sharing and the Role of Accounting***

It is not uncommon that members of supply chain network share information on inventory, sales, demand forecast, order status, product planning, logistics, production schedule and so on. This accounting information represents the details of different functions in relation to accounting and is deemed to have significantly influenced SCM practices in many organisations (Baines & Langfield-Smith, 2003; Waweru et al., 2004; Chua & Mahama, 2007). Indeed, information sharing is claimed to have helped them to discharge their functions well as it has the capability to hinder such problems as misappropriation of funds, supplier disappointment, breach of contract, supply of substandard materials, and delay in payment (Olaore, 2013; Christopher, 2016). In this regard, accounting information appears to play a major role in SCM practices. For example, in the case of inventory management, the information is deemed crucial to run the day-to-day business operations. The number (and amount) of orders placed to the immediate upper stream supply chain members can be decided based on the inventory information.

Other than assisting purchasing on price, quality of goods, reliability and speedy time of delivery, Joyce (2006) suggested that accounting can contribute towards value-analysis, make-or-buy analysis, as well as supplier audits and certification. Thus, the linkages with accounting functions should be developed and/or maintained throughout the SCM as accounting can provide information needed in the supply chain. Berry et al. (1997), for example, argued that accounting has facilitated organisational operations through its value chain analysis, cost control measures and performance measurement. Generally, performance management within the supply chain context has received much attention in the literature. Some studies have highlighted the importance of performance management as a key tool for managing supply chain (Chiarini & Vagnoni, 2015; Hong et al., 2018), enhancing SCM activities and relationships (Mouritsen et al., 2001; Hofmann & Kotzab, 2010), reducing relational risk or promoting greater cooperation through trust building (Coletti et

al., 2005; Abdullah et al., 2020). As pointed out by Velayutham et al. (2021), the recent Covid-19 pandemic has uncovered the lack of visibility as a problem in certain supply chains and they identified that accounting information can be used to increase the visibility throughout the supply chain.

Thus, there is a need to recognise the importance and usefulness of accounting in influencing SCM's activities and relationships, which consequently have some impact on organisational performance. Although Abunar and Zerban (2016) argued that the gap in reporting accounting information alone may not be adequate for operational decisions, the flow of information in a supply chain is regarded as critical to attain competitive advantage (see also Jernsittiparsert & Rungsisawat, 2019. As Hezabr (2018) claims, other than being crucial in supply chain strategy development and implementation, accounting information is also important in increasing the collaboration among supply chain members, where decision support systems are used as tools to gather and report the information throughout the supply chain.

Norris and Hurley (2000) stated that accounting functions along with other functions, such as human resources and marketing, support the flow (of supply chain) and provide information specific for the supply chain. Costs and revenues are important for evaluating the performance of SCM. Accounting shows the evolution of costs, revenues and profitability which improves the understanding and application of the performance indicators (Petrică, 2013). Moreover, supply chain is often associated with costs and revenues. Thus, it is crucial to quantify them, in which performance evaluation exercise can be facilitated. Performance indicators can be used as an analysis tool to guide the business for the employment prospects and targets in a supply chain project.

While the role of accounting appears to be vital for organisations to enhance their supply chain activities and relationships by pursuing appropriate strategies, Dekker and van Goor (2000) have argued that the role of accounting (information) in inter-organisational relationships is still far from being clearly spelled out, despite it has received increasing attention in the past few years (Chua & Mahama, 2007; Mouritsen et al., 2010). Instead, many researchers have looked into the managerial challenges of supply chain faced by organisations and the impact of the implementation of SCM on accounting, and in particular, management control systems. Most of the challenges are centred around the efficiency and effectiveness of

inter-organisational relationships which may be influenced by the supplier's lack of incentive to work (hidden action problem) and the possibility of a party having private information (hidden information problem). Organisations can use decision support systems as instrument to mitigate the incentive problems by designing control mechanisms to induce suppliers to work diligently and to motivate buyers to report information privately (Demski & Sappington, 1993).

In view of the above, this study attempts to uncover the interplay between accounting and SCM, particularly examining the role of accounting systems in managing and integrating supply chain activities and relationships in an electrical-based manufacturing company using a qualitative case study approach.

### **3. Theoretical Framework**

The theoretical focus for this study is the resource-based view (RBV) theory. Through the RBV theory, for firms' resources to potentially support a sustained competitive advantage, resources must be valuable, rare, imperfectly imitable, and hard to substitute (Barney, 1991). RBV theory provides theoretical support to conditions where SCM can be the source of competitive advantage (Barney, 2012). According to the RBV theory, a supply chain integration, which includes internal and external integration, can be a form of strategic resource of companies that influences their performance (Leuschner et al., 2013). Strategic resources create heterogeneity in the company and potentially affects the sustainability of competitive advantage of the company (Ali et al., 2021). Therefore, in this study, the interplay between accounting information and supply chain management, which heavily reliant on integration and enhances competitive advantage, is examined under the lens of the RBV theory. By so doing, an analysis of accounting's role and influences within the context of the supply chain network could be performed to enhance our understanding of how a company can develop its business and achieve desired business performance. More importantly, RBV shall explain how a company can gain competitive advantage in a more integrated manner through resource empowerment and reinforcement (Yang et al., 2019).

### **4. Methodology**

The primary aim of this qualitative study is to examine the ways in which the accounting systems of a Japanese subsidiary in Malaysia have influenced the SCM practices and vice versa. To achieve this



aim, we examined its accounting systems and SCM practices of this subsidiary that is largely owned by a Japanese parent company using an interpretive case study approach. We documented the applications of the systems and practices in terms of the ways in which they have been translated into day-to-day activities. Additionally, we examined how the accounting information, which is generated by the accounting systems, has been mobilised within the SCM practices. Many fields of social and business research have used the case study approach given that it allows researchers to obtain an in-depth understanding of issues for the consumption in the research under investigation (Creswell, 2007). According to Urban & Czernska (2016), such understanding relies heavily on the data obtained through the fieldwork. In many studies, it is not uncommon that researchers obtain data from multiple sources. This should enable them to establish a chain of evidence to address the issues related to reliability and credibility in the data analysis (Burns, 2000).

The Japanese company in Malaysia that we selected for this case study, is MachCo. It is an electrical and electronic-based manufacturing company located in Klang Valley, Malaysia. MachCo was chosen based on its interesting context of operating its business in a subsidiary capacity which was subject to its Japanese parent company's direction and practices concerning the integrated supply chain quite extensively. The case selection in qualitative research is directly related to the research issue (Flick, 2002; Azhar, 2015; Azhar, 2020) with an objective of unravelling some important phenomenon (Parker & Northcott, 2016). The study involved three stages of data collection that overlapped and iterative rather than following a sequential order of analysis (Ahrens & Chapman, 2007). Throughout these stages, we managed to interview key personnel who were directly involved in the company's accounting systems and SCM practices, to review relevant documents, and to observe key organisational processes and activities.

## ***4.1 Data Collection Methods***

### ***4.1.1 Semi-structured Interviews***

The data were collected using a series of semi-structured interview with key personnel in MachCo. Engaging multiple and relevant information sources in the interview was critical for this study to provide better understanding of the supply chain activities and relationships of MachCo, as well as to determine the stretch of

accounting influence in its management. Further, the use of various informants in this kind of study was deemed consistent with Ferreira and Merchant (1992). In this study, the targeted interview participants were made up of those key decision makers and operational officials who could give meanings to the SCM activities observed and who could demonstrate and articulate their experience and actual practices (Parker & Northcott, 2016). Their selection was governed by our judgement as to whether or not they were likely to provide useful information on SCM practices in MachCo.

At the beginning of each interview session, we presented some information to its key personnel concerning the purpose of the study (i.e., to examine the interplay between accounting systems and SCM practices in rendering the electrical and electronic business). This was followed by approximately 1 to 2 hours of in-depth interviews. Eighteen interview sessions with 11 interview participants (in which some were interviewed twice) were recorded to ease the data transcription process. As shown in Table 1 below, a majority of the interview participants that we interviewed between 2018 and 2019 were senior members in their respective departments and involved directly in MachCo’s accounting and SCM functions.

Table 1: List of Interviewees

Code	Interviewee	Department
T1	Senior Manager	Human Resources
T2	Chief Accountant	Accounting
T3	Senior Manager	Marketing
T4	Senior Manager	Sales
T5	Executive	Human Resource
T6	Accountant	Accounting
T7	Senior Executive	Marketing
T8	Executive	Marketing
T9	Senior Executive	Purchasing
T10	Representative	Purchasing
T11	Executive	Sales

Each interview was transcribed, and a summary was constructed to reflect emerging insights flowing from the interview processes. We gathered interview participants’ similar views and actions as our analysis progressed (Dahlsrud, 2008). Upon confirmation of

each transcript, we then identified the themes and defined the data that they provided related to the research issues that we set as our focus. The original transcripts were reorganised to build up our understanding on MachCo's key business operations, and how the accounting systems influenced SCM practices, as well as how the SCM practices shaped accounting systems (in terms of their functional capabilities in reporting, decision-making activities, etc.). Our data was first arranged according to the business units, as well as departments involved, which comprised five main ones: the Sales Department, the Marketing Department, the Services Department, the Finance Department and the Human Resource Department. To enhance the credibility of our analysis, we examined the transcripts' reasonableness across the multiple data sources by relying upon some printed and online sources (i.e., documentary review), as well as one scheduled observation at the corporate office for about two months.

#### *4.1.2 Documentary Review*

In addition to data derived from a series of semi-structured interviews, we used secondary sources by systematically collecting and assessing organisational previous data, as suggested by Scapens (2004). Among the documents that were made available to us were MachCo's minutes of meetings, memos, email messages, annual reports and supply chain performance reports. We also reviewed MachCo's strategic business documents (however limited) such as the manuals of accounting applications, as well as the discussion notes and internal records outlining the important roles, and important implications of accounting information on the SCM practices. From the review of minutes of meetings with customers, we could determine the extent of use of accounting information on organisational supply chain, and controls. By reviewing the documents that we had access to, we were able to identify issues that were raised by some accounting personnel and by MachCo's stakeholders. In particular, our attention was directed towards how accounting functioned within MachCo and how certain suppliers, or customers, responded to the demands within the complex SCM activities and, which have had important implications on MachCo's overall business performance and the ways it managed business performance. We discuss these insights in our analysis section.

### *4.1.3 Observation*

Apart from semi-structured interviews and documentary review, we were able to observe the accounting functions in MachCo, and how such functions were useful in managing the company's supply chain. We were granted a visit to MachCo's headquarters to closely observe how the accounting personnel, business managers and executives dealt with accounting information at work. Specifically, we were allowed to observe how accounting information was useful in this Japanese subsidiary. This had enabled us to better understand the major accounting processes, the ways in which different groups of people made use of accounting information, and the sorts of issues they encountered with regards to SCM. The direct observation provided us with the opportunity to cross-examine the employees informally as well. Throughout the visit, notes were taken during and/or after observations for the purpose of data analysis.

## *4.2 Data Analysis*

In this study, the task of analysing the data was divided into three stages. The first stage involved explaining and analysing the industry, and operational background of the company. We deemed that this analysis was important to enhance our understanding on the characteristics of MachCo's SCM practices, and to provide insights into the role and effects of accounting in the context of SCM in this Japanese subsidiary. We also analysed the internal documents (e.g., regular organisational communications (in the form of reports), as well as information about the company's latest development (mainly on products and performance) to gain better understanding on the organisational background. The second stage involved reviewing the interview transcriptions to identify important themes for better articulation of the storyline. The conceptualisation of the SCM in the case company was important in determining the role and effects of accounting within MachCo's supply chain activities and relationships. This required further examination of the similarities and differences of data derived from the various sources. The final stage of the analysis involved matching the consistency of the data derived from: (i) the semi-structured interviews, and (ii) the documentary reviews. For any contradiction identified from these two methods, we would follow up with the relevant third parties for further confirmation. This triangulation prompted interesting analysis, as contrasting views allowed us to elaborate further. More

importantly, the triangulation tended to enhance the validity of this study's empirical findings as suggested by Creswell (2007).

## 5. Findings

This section describes the background of MachCo. Specifically, it describes the business overview and managerial structure of the company (including some highlights on the internal and external environments and the recent changes in business ownership). To understand the main issues faced by the company, this section also explains the core business of the company in relation to the SCM and how its supply chains are being managed, as well as the integration that have ensued from the application of accounting systems.

### 5.1 *MachCo's Background*

MachCo was founded in Malaysia more than 40 years ago. It specialises in sales and marketing of electrical and electronic products with majority shareholding held by its Japanese parent company. Its main business activities concern the distribution and sales of electrical and electronic products, such as audio visual and home appliances products. The audio-visual products include LED TVs with Android, Web Contact TVs, LED and LCD TVs, as well as Blu-Ray Player. Meanwhile, the home appliance products include refrigerators, washing machines, rice cookers, telephone set and electric pots.

Like any other Japanese companies, the parent company does not have a local headquarters office, but rather maintains regional headquarters known as the "representative offices". One of the representative offices of MachCo (known as "Honshu" Asia Pacific Pte Ltd (HAPL) located in Singapore) oversees the Southeast Asian, Indian and Oceania operations, particularly in ascertaining that their business practices are aligned with the IR 4.0's technological nuances as prescribed by the parent company. Every regional office is responsible for some different functions in making business plans visibly clear and in aligning business analytics capabilities with the broader business strategy. HAPL Singapore is in charge of computer-related business. HAPL supports regional-wide administration, planning, branding activities, environment activities, financial administration, industrial systems, power systems, social infrastructure systems, industrial ICT solutions, and building solutions.

At the time we conducted our fieldwork, there were at least 150 employees in MachCo. These employees were attached in five main departments which assumed the key strategic functions of the business namely Accounting, Human Resource, Sales, Services and Marketing (see Figure 2).

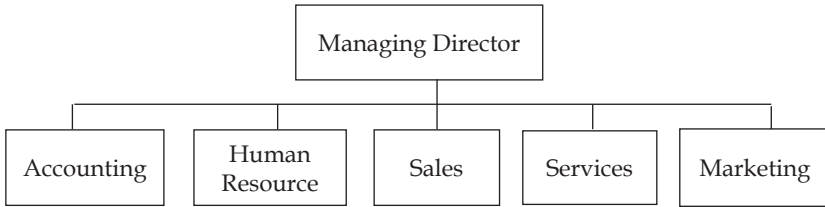


Figure 2: Main Departments in MachCo

The company had three lead departments (i.e., Sales, Services, and Marketing), and two key support departments (which comprised of senior officials of human resources, and accountants) as the strategic planners. There were approximately 35 management employees in MachCo (as at December 2018) with various management positions. Figure 3 summarises the key positions with the structure of support staff in MachCo.

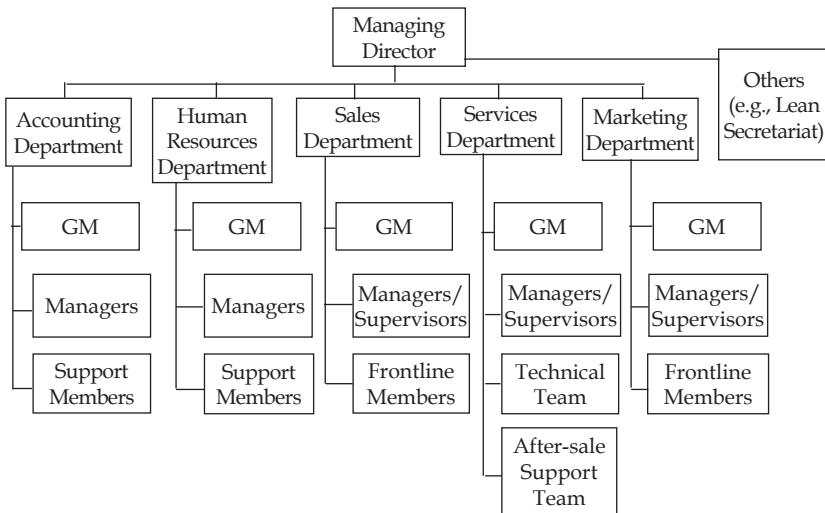


Figure 3: General Positions in MachCo

The above structure is deemed appropriate within MachCo given that it practiced lean management since the early 2000s. The ultimate goal for adopting lean management was to enhance the customer value through a zero-waste creation process. As a lean-practicing company, it had considered factors that adds to customer value and put its focus on key processes. These were made possible through the information sharing and dissemination. Interestingly, following the emergence of the IR 4.0, more analytical reports and analysis that synchronise different business functions have become more integral in most of MachCo's business practices including SCM.

## 5.2 *SCM in MachCo*

The SCM in MachCo is centred around a business plan to allow business managers and supply chain counterparts from across the chain (both internal and external) to focus on the strategic aspects under their respective control and responsibility. The accounting information (mainly communicated through "budget reports") is used by MachCo to translate abstract strategic messages (enforcing cost savings, attaining specific performance targets, adding customer values, and enhancing operational integration) into specific objectives and targets throughout the entire network. Such information serves as catalyst to compel the whole supply chain network to support business objectives through various KPIs. Interestingly, Machco uses budget figures for its major departments to tailor to their particular needs that form a basis to prepare a comprehensive corporate business plan. Interviewee T6 provided a scenario to explain the role of budget:

*"Budget must be made available by every department... [basically in terms of] what they intend to do. So, this shall serve as their "promise" to meet whatever KPIs imposed [by the corporate office] or agreed upon [by each department]. Our business plan will be based on the budget figures."*

Business plan preparation starts three months before the beginning of the new calendar year. Although the lateral translation begins with the question of how to develop a realistic business plan, MachCo often encounters with an issue as to who to identify to enrol in designing the business plan and how to align with their interests. This led many parties to question how MachCo can develop a realistic business plan by engaging the right KPIs and encouraging business

managers and supply chain counterparts to enrol and actively engage in the network that they have significant dealings.

In the case of MachCo's SCM, it appears that it does not own a manufacturing line, as it is a distributor company. MachCo purchases ready-made supplies from a single manufacturer (i.e., another entity in the group that manufactures electrical and electronic products). All products are manufactured in two plants located in the Southern part of Peninsular Malaysia and in Thailand. Given that the manufacturer is a separate entity from MachCo, and it only manufactures the products based on demands, its production capacity depends entirely on the effectiveness and efficiency of a limited number of suppliers. This sometimes creates issues and/or tension between MachCo and its manufacturer. As Interviewee T9 explained:

*"Of course, we find it difficult to cater for ad-hoc demands from our customers. Even if the demand is high at this time around, we still cannot sell as it depends on the availability from our manufacturer. This is not good, you see."*

To improve the manufacturing process, and the relationship with its manufacturer, and its supplier, MachCo has hardly skipped meetings organised between the two parties. Interviewee T10 did express the following:

*"We have three meetings with our manufacturer every month... normally at the beginning, middle, and end of the month to ensure that the forecast order and production are in line with both parties' capacities and constraints. The meetings are normally held at the factory sites [plants]. All meetings are conducted verbally, and reports are issued at the end of the meeting. A forecast report is prepared every three months by the Sales Department and sent to the factory for planning and evaluation purposes so as to accommodate business demands and order production. However, there are times where the factory [manufacturer] fails to accommodate our customers' demands, due to, for example, shortage of inventory caused by its suppliers. They have their own problems that put us in real trouble. Regardless, we try our best to resolve some "domestic" issues."*

Since its manufacturer's business relies heavily on MachCo, there is a need for this subsidiary to request for prompt payments for the supplies shipped. This requires MachCo's marketing team to keep negotiating with the manufacturer on the more effective pricing for per unit of product and the freight-on-board. If the team finds the price requests are too high, a negotiation would be initiated for



much lower price. Normally, the negotiation attempts will have higher success rate if the team appears to be well prepared, and well informed about the market pricing, and the effective level of quantity required.

As for the finished goods, they are transferred from the manufacturer to the warehouse for storage. Warehousing is another function that is being outsourced by MachCo. The external contractor that MachCo outsourced its warehouse functions, is also in charge of all the logistic of the products such as, keeping, handling, uploading and forwarding the inventories.

Before a new product is launched in the market, it is customary for MachCo's marketing team to have a meeting with the manufacturer, and the sales team to assess the feasibility of the products in the targeted markets, or as explained by Interviewee T10:

*"We use a third-party market research report for forecasting sales [as instructed by the parent company in Japan to align with the broader IR 4.0 agenda]. This market research looks at the changes in demand of different categories of products. For example, consumers may move their purchase from a 7kg capacity washing machine to a bigger capacity of 8kg. The report shows the changes in market and the latest trend as a benchmark or reference to enable the marketing team to forecast the sales. The Sales Department usually supports this effort by providing feedback on the models to market in conjunction with aggressive competitors."*

Interviewee T2 further explained the following:

*"We usually compare our cost structure with our competitors' products of similar capacity and features in determining the selling price of the products in local currency. The benchmarked price will be submitted to the Marketing Department's general manager for his final decision on the benchmarking. The Marketing Department will discuss with the Sales Department to align on the pricing strategy based on the concerns from both ends. For this, we use a conventional mechanism in determining the cost structure and in setting the margin for selling price. For international sales, we use different pricing models. We consider things like the affordability of the local customers and the economic structure or condition of that country before setting the price. I think this works quite well in here so far."*

The above two quotes suggest that MachCo does not deal directly with end users, as all matters on sales are handled by the dealers. All dealers are appointed by MachCo, and there are no self-appointed dealers, or as Interviewee T9 indicated:

*“The appointment of dealers is under our prerogative. The appointed dealers will sign a trading agreement with us, and they will be given an authorised certificate. Although so, they are not given access to our system. They can only make their orders through the assigned salespersons. Each salesperson will submit the sales order to the Sales Department and our salesclerks will key in the orders into the system. After receiving orders from the dealers, the sales team will instruct the forwarder (an outsourcing entity) on the products that needs to be delivered, and the forwarder will handle the order and forward the products to the dealers.”*

### **5.3 Local Accounting Systems and Performance Management**

Accounting systems in MachCo appear to be significant in such areas as reporting and performance management. In terms of reporting, MachCo adopts the Malaysia Private Enterprise Reporting System (MPERS). Under MPERS, it is required to report its financial statements to Japan in compliance with MPERS on a monthly basis. The required financial reports comprised the profit and loss account, financial position, and ageing reports on inventories, accounts receivable, and accounts payable. In terms of performance management, MachCo is required to submit its accounting reports to HLPS so as to enable them to incorporate MachCo’s business results into its financial statements before submitting them to Modus Group for performance evaluation, and monitoring. MachCo communicates directly with HLPS concerning the prevailing reporting requirements.

While there are various competitive accounting tools available that meet the demands of financial and SCM reporting, it appears that the Accounting Department of MachCo views the software systems to only serve as a support tool for enhancing decision making capability, and also as a platform for preparing the financial reports. At the operational level, the Accounting Department is currently using an accounting system called “Navision” – a Windows-based off-the-shelf system. This system was introduced following the escalated demand to introduce a more reliable system that could integrate the isolated Enterprise Resource Planning (ERP) systems, and to improve the quality and the speed of information generation, especially for the managers and directors at MachCo. The implementation of Navision started in May 2014. This system is claimed to be useful for functions such as purchasing, sales and inventory management. Interviewee T6 said the following:

*"We started to use Navision since 2014. We've made some customisation to the system in order to meet our reporting requirements. We've used Navision as a kind of ERP system to customise our own reports and programmes according to our operations. This system focuses more on the purchase and sales orders, as well as inventory management. It can only generate certain reports and billing, while the rest is done through Oracle."*

In discharging its accounting functions, MachCo does not rely solely on Navision, but also using a software called Oracle. As a platform for financial (integrated) applications, Oracle serves mainly as a support tool for Navision to execute specific business processes. It is particularly useful for recording, for example, purchases- and sales-related transactions and linking them up with specific accounts receivable, accounts payable and general ledger that ultimately update the financial statements such as the profit and loss account and the balance sheet. To operate Oracle, data from Navision is uploaded to the system, and then it can use the data to generate inventory ageing reports, accounts receivable ageing reports, accounts payable ageing reports, and financial statements.

MachCo's marketing team is responsible for managing the purchase (or supply), and sales of electrical and electronic inventories at MachCo. The team provides useful reports such as, the customers segment, product demands, and inventories availability. This requires its team members to develop the marketing plan to promote for MachCo's products, and services. The plan consists of, among others composing for persuasive campaign, television commercial, and newspaper and radio advertisements. To increase the visibility of its products, some of the team members are engaged with market research works that studying the acceptance of product and service promotions. As emphasised by its Managing Director during the recent management meeting, the research ought to be focusing on the feasibility of product(s) and provide relevant data to the Sales Department to assist them in developing promotional plans such as, bundle sales for dealers, or retailers, and in setting the sales targets.

Based on the interviews conducted, it appears that the information sharing and information dissemination between departments are efficient. However, this is probably because all the departments are located on the same floor, which can reduce the cases of information losses. As a respondent in the Sales Department put it:

*“Direct communication is something that we practice here. As we are located not far from each other, we request this and that by visiting directly or alerting our colleagues through internal [local] messages. So, I suppose there is no issue with the communication.”*

Such communication had enabled MachCo to better coordinate its reporting function, which had some specific emphasis for meeting the organisational critical needs, such as meeting the earnings performance target. Inter-departmental integration is viewed as highly important to MachCo due to its nature of business, that is selling and marketing the electrical and electronic products. In such high-risk business, close monitoring of business regulations would save the company from costly penalties and sanctions from the government, legal suits and backlash from the customers, or even, major economic losses. Similarly, business performance is also given much emphasis by MachCo to ensure that it remained competitive and survived in the business. This is observed in its performance management practices.

Generally, MachCo has implemented a performance monitoring practice since 2015. This practice, which has been regarded as a self-improvement project (similar to the Balanced Scorecard), was imposed by its Japanese parent company to achieve an effective monitoring and evaluation of the company’s overall performance. In succeeding this practice, the parent company set up a specific office in Japan to deal with the performance targets from all subsidiaries, including MachCo, through a stringent monitoring exercise. Such an exercise requires representatives from the parent company to pay visits to the subsidiaries to monitor their performance.

In MachCo, accounting is regarded as a powerful tool in enabling and influencing economic decisions. The provision of information to manage MachCo’s performance, for example, may be conceived of as potentially fostering or stifling organisational planning and monitoring. However, differences may exist in the ways they influence each other. At MachCo, the process of reporting has eventually triggered more active measuring of KPIs in some aspects of SCM. Meanwhile, in some instances, SCM practices in MachCo have caused some courses of actions to be devised to optimally leverage the accounting information that is made available for meeting various demands (including the alignment with the parent company’s IR 4.0 agenda). All these suggest that both the accounting information and SCM practices can mutually reinforce each other in certain organisational activities.

## 6. Discussion and Conclusion

In exploring how accounting systems and practices function in the context of supply chain, this study has examined a Japanese company's subsidiary that distribute and sell electrical and electronic products in Malaysia. This involves examining the role of accounting systems and practices throughout the supply chain activities and relationships, as well as the integration between them. A real concern of the study has been on the ability of accounting information to enhance the integration within this organisational setting and in meeting the parent company's expectation in aligning business practices with the IR 4.0's demands.

Based on the above findings, it has become apparent that the supply chain design in MachCo is driven by the pressure for having an "integrated supply chain" environment, which mainly received from the parent company in Japan. While such a design seems to anticipate a more active role of accounting information, we have observed a mere routine reporting practice, which limits the integration in the company. As a result, the integration appears to be puzzling and lacks certainty. As Petricã (2013) argued, for integration to happen, the supply chain has to be appropriately linked to the other domains of an organisation such as accounting (see also Agndal & Nilsson, 2010; Hezabr, 2018).

The extant literature has argued that it is no longer sufficient for the organisations to integrate the operations and internal infrastructure with their competitive strategies. Instead, they need to better integrate internal business processes with such external parties as suppliers and customers in order to achieve effective SCM (Christopher 2016; Yakovleva et al., 2019). In so doing, accounting has played an important role in connecting the different business processes, functions and departments together through information that it provides (Mouritsen et al., 2001; Chiarini & Vagnoni, 2015). According to Waweru et al. (2004), one simply cannot dismiss the importance of accounting information to support the articulation of organisational strategies so that goals, and objectives are measured appropriately. This suggests that the organisations should embrace the importance of accounting in improving business performance based on certain functionalities that it renders. Many organisations practicing SCM have engaged performance management to drive supply chain practices. Researchers believe performance management is useful in addressing different key issues, such as diagnosing and improving SC performance (Chae, 2009), promoting

supply chain activities and relationships (Banomyong & Supatn, 2011), evaluating the effectiveness of strategies (Gunasekaran et al., 2001), enhancing the decision-making process (Aramyan et al., 2007), and controlling and communicating performance (Banomyong & Supatn, 2011; Azhar, 2020).

The role of accounting information in the supply chain environment is concerned with the delivery of cost data to empower managers to make well-informed decisions in light of particular conditions faced by specific departments or managers. For instance, managers may use accounting information to synchronise important supply chain activities to resolve peculiar business issues (Agndal & Nilsson, 2010). As Hezabr (2018) claims, other than being crucial in supply chain strategy development and implementation, accounting information is also important in increasing the collaboration among supply chain members, where decision support systems are used as tools to gather and report the information throughout the supply chain. In this study, we have observed that MachCo has leveraged much on frequent reports, which include the list of overdue debtors, large creditors' reports, and customer complaints reports to resolve an issue related to the cashflow management. Clearly, accounting has strong influence on MachCo's SCM practices. Nevertheless, it is important to note that accounting appears to only cater for routine reporting and for the use of the operation management rather than accommodating the strategic decision making of SCM. Although the analysis of the study has suggested that accounting information is extensively utilised in MachCo, financial accounting appears to be a mere support tool for the SCM practices.

From the findings presented above, it can be concluded that the case company has utilised accounting information quite extensively in managing the integration of different supply chain links. As much as accounting influences SCM practices in the selected case company, SCM also shown to influence the accounting practices to a great extent, by shaping the demands of information through various negotiation avenues. In terms of managerial implications, such findings are important in shedding light on the interplay between accounting and SCM, as they provide practical contributions that have important implications on SCM practices particularly, in terms of their mutual roles and implications on the natural supply chain setting. The limitation of this study is that it is based on one case study and that the specific accounting information that were reported in the company were not identified. Therefore, important implications

that can be drawn for designing future studies from the academic perspective concern the identification on usage of specific accounting information that is typically reported in terms of its frequency of use and its practicality within the context of SCM. Our findings have, however, highlighted the importance of the actual use of accounting information to stimulate SCM activities and chains to drive business performance. Drawing from the theoretical underpinning under the RBV theoretical lens, this study provides support on how a company could achieve competitive advantage through supply chain integration and accounting information reinforcement.

Accounting information should be able to effectively support multiple organisational units' activities which are integral to SCM given that it influences organisational economic performance. From the study, it has shown that it is capable to steer MachCo towards achieving business goals, by changing the design, and configuration of supply chain relationships. This is explicitly evident over MachCo's reliance on accounting information that has redefined the ways in which it communicates with its suppliers through SCM. Information sharing has facilitated in streamlining the company's SCM and would ultimately influence the performance of the company as members in the supply chain are able to collaborate in a more integrated and seamless manner. As the competition today is between supply chains, the efficient flow and provision of accounting information may help organisations to create value throughout the supply chain and hence provide the key to improving their overall supply chain performance.

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