



The Role of Strategic Management Accounting and Strategic Cost Management in Information System

Arini^{1,2}, Erlina³, Iskandar Muda⁴, Keulana Erwin⁵

^{1,3,4,5} Universitas Sumatera Utara, Medan, Indonesia

²Universitas Lancang Kuning, Pekanbaru, Indonesia

Email: arini@unilak.ac.id

Article History

Volume 6, Issue 10, 2024

Received: 30 Apr 2024

Accepted: 28 May 2024

doi:10.33472/AFJBS.6.10.2024.5239-5255

Abstract

The purpose of this paper is to increase understanding of how strategic management accounting (SMA) and strategic cost management (SCM) practices in information systems relate to each other. There is a relationship between strategic management accounting (SMA) and strategic cost management (SCM) with information systems, and both can contribute to management decision-making and company operations. Thus, it can be concluded that information systems can help the strategic management of enterprises, improve the management and operational performance of enterprises, and have an impact on the authority control and business strategy of enterprises. Therefore, information systems should be part of the company's business strategy.

1. Introduction

The literature on strategic management accounting (SMA) has grown significantly since Simmonds' (1981) work and a number of SMA practices have been introduced (Rigby and Bilodeau, 2015; Cadez and Guilding, 2012, 2008; Langfield-Smith, 2008; Guilding et al., 2000). Since then, interest has grown to determine the popularity of these practices among firms and determine their impact on firm performance (Rigby and Bilodeau, 2015; Guilding et al., 2000). However, while some empirical studies have documented that the embraced SMA practices have resulted in better firm performance (Alamri, 2019; Pavlatos and Kostakis, 2018; Turner et al., 2017; Cravens and Guilding, 2001; Guilding et al., 2000), other studies report disappointing

implementation rates (Lachmann et al, 2013; Langfield-Smith, 2008), such results were surprising to many researchers who had expected SMA practices to be widespread in practice given its potential in helping managers to cope with increasing levels of competition and uncertainty, and to make more informed strategic decisions (Bhimani and Langfield-Smith, 2007; Bromwich and Bhimani, 1994; Dixon and Smith, 1993; Bromwich, 1990; Simmonds, 1981).

Strategic Management Accounting (SMA) was coined by Simmonds (1981, p. 26), who defined SMA as the provision and analysis of management accounting data about the business and its competitors for use in developing and monitoring business strategy. Strategic management accounting is the process of using accounting information to manage organizational strategy and excellence. Strategic management accounting emphasizes information that is internal and external, assists management in identifying, collecting, selecting, and analyzing accounting data related to external factors, using budgets as a form of management control system, and considering business environment factors that are rapidly changing and affecting changes in business strategy. Then strategic cost management is a cost management approach that considers rapidly changing business environment factors and affects changes in business strategy. Strategic cost management involves examining every process in the organization, removing barriers to management, understanding supplier business, controlling costs, identifying opportunities for improvement, and conducting value chain analysis. Strategic cost management can assist organizations in achieving business goals and gaining a competitive advantage.

Strategic management accounting and strategic cost management have a close relationship in supporting strategic decision making. Strategic management accounting ensures strategically relevant cost management information becomes an integral part of the information system, while strategic cost management provides the cost information needed to make strategic decisions related to cost management (Azmi et al., 2018). Both consider rapidly changing business environment factors that influence changes in business strategy, focus on identifying opportunities for improvement, and use budgets as a form of management control system. The use of information systems is essential in strategic decision-making. Information systems play an important role in strategic decision-making by providing relevant, timely and accurate information to support managerial decision-making and strategic advantage. Information system strategic planning is essential in approaching information system strategic planning.

Information systems (IS) are increasingly used to facilitate internal coordination within the firm and enhance external integration with external parties (e.g., customers and suppliers; Li, Rao, Ragu-Nathan, & Ragu-Nathan, 2005). This phenomenon is evident in the increasing use of information systems for integration purposes; for example, information system infrastructure (e.g., data communication tools, network connections, standard data structures, and unified coding standards), information system software (e.g., enterprise-wide information systems such as SAP), and information system applications (e.g., centralized database management systems, electronic data interchange (EDI), web-based or internet-based information systems; Kumar, 2014). There is some research on information systems (IS) influenced by practices in strategic management accounting and strategic cost accounting.

Hadid and Al-Sayed (2021), conducted research on contingency variables, one of which is the quality of information systems (IS) on strategic management accounting practices with 149 manufacturing business units in the UK, the results of the study explained that there is a positive relationship between management accountants and the implementation of strategic management accounting practices (SMA). However, this relationship is positively moderated by the quality of IS, which further enables management accountants to implement SMA practices.

Then Maiga (2015), conducted research on the use of information systems integration with corporate profitability mediated by strategic cost management. The study used survey data on 241 US manufacturing companies. The results show that neither internal IS integration nor external IS integration has a significant direct impact on corporate profitability. Instead, internal cost management strategies fully mediate the relationship between internal IS integration and profitability; similarly, the relationship between external IS integration and profit ability is fully mediated through external cost management strategies. The results provide evidence that firms seeking profitability solely by investing in IS integration may not necessarily realize increased profitability; firms should focus their attention on intervening processes, such as business strategy, to determine the profitability derived from IS integration. However, a limited number of studies have revealed mixed results with respect to profitability achieved from IS integration (Chapman & Kihn, 2009; Hunton, Lippincott, & Reck, 2003; Poston & Grabski, 2001). For example, Bharadwaj (2000) compared the performance of firms that had been recognized by InformationWeek magazine as IT leaders in their industry with the performance of a control group that did not have such recognition. His univariate analysis showed that firms with high IT capabilities (firms in the study sample) outperformed the firms of the control group. However, a subsequent analysis by Santhanam and Hartono (2003) controlling for prior financial performance found no relationship between many (21 out of 24, in one case) performance measures and IT integration. Hayes, Hunton, and Reck (2001) find that capital markets place value on enterprise resource planning (ERP) implementation, but Poston and Grabski (2001) find that ERP implementation has no effect on firm performance.

However, most previous empirical studies have attempted to examine the direct effect of IS integration on firm profitability and do not distinguish between internal IS integration and external IS integration, and evidence of past IS integration failures leads researchers to argue that the success of IS integration depends on other contextual factors. More specifically, Barua and Mukhopadhyay (2000) and Sambamurthy, Bharadwaj, and Grover (2003) suggest that many studies have overlooked important middle organizational capabilities that mediate the relationship between IS integration and organizational performance. Chan, Huff, Barclay, and Copeland (1997) and Henderson and Venkatraman (1993) argue that the inability to realize value from IT investments is, in part, due to a lack of alignment between IT integration and business strategy. Mahmood and Mann (1993), Kaplan and Norton (1996), Palvia (1997), Kathuria, Anandarajan, and Igbaria (1999), and Li and Ye (1999) also argue that the relationship between IT integration and performance should be examined within a strategic management framework.

From this explanation, issues regarding strategic management accounting practices and strategic cost management in information systems are very relevant to the situation of Indonesia. It can be seen that the research was conducted in the business unit of a manufacturing company. Indonesia also has several manufacturing companies, so in the future this research is very suitable to be carried out in Indonesia. The role of strategic management accounting with information systems is to assist management in making strategic decisions and optimizing company performance. Information systems can assist in presenting existing data in strategic management accounting, collecting and analyzing accounting data related to external factors, and coordinating and communicating strategic priorities through the use of budgets as the most important and widely used form of management control system. In addition, information systems can also assist in managing production costs and improving operational efficiency, which is the main focus of strategic cost accounting. Information systems have an important role in supporting strategic cost management. Information systems can assist in collecting and analyzing accounting data related to internal factors, presenting existing data in strategic cost accounting, ensuring strategically relevant cost management information becomes an integral part of the information system, and improving operational efficiency. This paper incorporates the relationship between strategic management accounting (SMA) practices and strategic cost management in information systems. Prior to this, these topics were discussed separately. This is a new idea in this paper. This paper aims to provide an understanding of the relationship between strategic management accounting practices and strategic cost management in information systems.

2. Literature Review

Contingency Theory

Contingency theory is a management theory that suggests that the effectiveness of management practices depends on the specific context in which the practices are applied. In the context of strategic management accounting and strategic cost management, contingency theory suggests that the effectiveness of these practices will depend on specific factors present in the organization (Alfian et al., 2020). The following are some of the factors that have been identified as potentially affecting the effectiveness of strategic cost management practices, namely:

- ✓ Organizational structure: Organizational structure can affect the effectiveness of strategic cost management practices.
- ✓ Organizational culture: Organizational culture can affect the effectiveness of strategic cost management practices.
- ✓ Industry: The industry in which an organization operates can impact the effectiveness of strategic cost management practices.
- ✓ Organization size: The size of the organization can impact the effectiveness of strategic cost management practices.
- ✓ Organizational strategy: Organizational strategy can impact the effectiveness of strategic cost management practices.

Overall, contingency theory suggests that the effectiveness of strategic management accounting and strategic cost management practices will depend on various factors that are specific to the

organization in question (Siboro et al., 2018). Therefore, it is important to consider these factors when implementing these practices to maximize their effectiveness.

Management Accounting and Strategic Management Accounting (SMA)

On the one hand, SMA has always been considered a variation of management accounting and therefore its role remains to provide information for decision making. Wilson's (1995, p. 163) writings show SMA as the perfect ideal form of management accounting, or rather, SMA is management accounting after it was removed from all criticism in the 1980s. On the other hand, SMA differs from traditional management accounting in at least two ways:

- ✓ SMA is about strategic decisions,
- ✓ The information needed in SMA may be partly generated outside the company.

Table 1 summarizes a number of more detailed differences between traditional management accounting and SMA. The comparative analysis shows that traditional accounting is data-oriented, i.e. facts and statistics are gathered together for reference or analysis, whereas SMA is information-oriented, i.e. facts are provided or learned about something or someone. Traditional management accounting is historical and refers to the actual accounting data of the company, while SMA is more prospective as it refers to the future information of the company. Traditional management accounting shows a single entity and a single time period, whereas SMA shows relative entities and multiple time periods, which depends on the needs an entity must have for its strategic management. Traditional accounting looks inward and ignores the linkages created within, whereas SMA looks outward and embraces the linkages created. Another difference is that traditional accounting has a manufacturing focus whereas SMA has a competitive focus. In traditional accounting we have to summarize various existing activities based on the existing system, while in SMA we have to show new possibilities, new challenges, new developments for better competitive advantage without being limited by the existing system.

Table 1. Comparative analysis of management accounting and strategic management accounting

Management accounting aspects	SMA aspects
Factual	Proposed
Individual entity	Joined Entity
Single duration	Multiple duration
Single judgment	Sequence arrangement
Subjective finding	Fact finding
Productive target	Challenging target
Current enterprises	Prospect enterprises
Active	Dedicated
Registered	Not registered
Overpass connection	Clutch connection
Statistic directions	Reports direction
Established on actual rules	Based on actual rules
Created based on codes and rules	Avoided codes and rules.

Source: Wilson (1995, p. 163), based on Wilson and Chua (1993[5,3])

Strategic Management Accounting and Strategic Cost Management

Strategic Cost Management (SCM) is a term that emerged alongside the term strategic management accounting. Its originators were two American authors, Shank and Govindarian, who

wrote the first articles on SCM (Shank 1989; Shank and Govindarajan 1989). In 1996, some articles on the SMA edition were published, but two articles at that time correctly referred to the SCM edition (Shank 1996a; Carr and Tomkins 1996). The editors of the magazine at the time considered the SCM to be part of the SMA. One might ask what is the difference between SMA and SCM; are they not one and the same. In answering that question, a good starting point is to consider how SCM is defined in the academic literature. **Table 2.** summarizes some important definitions of SCM. It clearly shows that the definition of SCM seems to be different from the definition of SMA.

Table 2. Definition of Strategic Cost Management (SCM)

Source	Definition
Shank [30] (1989, p. 50)	Strategic cost management according to Shank is described as the strategic use of cost-related information and is primarily one of the four steps of the strategic management continuum. This strategic management context distinguishes strategic cost management from managerial accounting.
Wilson [42] (1995, p. 163)	Wilson (1995), strategic cost management aims to reduce unit costs continuously over the long term. Managers only start managing costs strategically when they identify significant costs of the company and then implement efforts to reduce them.
Cooper dan Slagmulder [8], (1998, p.14)	Cooper and Slagmulder (1998), strategic cost management is the application of cost management techniques so as to simultaneously improve the company's strategic position and reduce costs.
Blocher, Chen dan Lin [7], (1999, hal. 27)	Blocher, Chen and Lin (1999), a more complicated cost structure of a company can lead to the creation of a competitive advantage for the company and it is also based on this that often in our research we refer to most of the Strategic Cost Analysis.
Anderson (2007, hlm. 482)	Anderson (2007), strategic cost management can be defined as a key objective of the company, which aims to enable the estimation of product or service costs with the company's strategy and maximize its strategic performance.
Guan, Hansen dan Moven (2009, p. 377)	Guan, Hansen and Moven (2009), managing costs strategically or Strategic Cost Management allows us to use and utilize data relating to company costs by identifying.

Early articles by Shank (1989, 1996) and followed by Shank and Govindarajan (1989) clearly outlined three practices that SCM should follow. The three topics influence the focus of cost analysis to make strategic choices. Each of the three themes is an indispensable component of a Strategic Cost Management analysis, but a complete analysis is when all three topics are included.

- ✓ Value Chain Analysis. In the context of Strategic Cost Management, the process of effectively managing costs requires a broad focus. Following Porter (1985) this cost perspective is considered a value chain. A value chain is a set of activities that are related to each other and are part of a company's business process, from the purchase of raw and auxiliary materials to the process of distributing finished products to consumers, even recycling to the start of a new value chain cycle. Keep in mind that value chain is different from value-added. Value-added starts with payments to suppliers for purchases made by the company and ends with cashing out, for sales made by the company. Therefore, value-

added is the difference between sales and purchases and the ultimate goal is to maximize the difference between sales and purchases. Value-added analysis starts very late and ends very early, and the start of cost analysis with acquisition misses all opportunities to exploit relationships with the company's suppliers. According to Shank (1989) such opportunities can be very important to the company.

- ✓ Analyze cost drivers. So, what are the elements or factors that cause costs? Shank and Govindarajan suggest that cost estimation should not be limited to traditional cost drivers such as labor, which provides a basic picture of reality and consequently results in wrong decisions. According to Shank (1996) in conventional management accounting there is only one cost driver, which is production volume. The higher the production volume, the lower the cost per unit and vice versa. Volume-dependent management accounting cost concepts are: fixed costs as an alternative to flexible costs, standard costs as an alternative to marginal costs, cost-volume-profit analysis with break-even point and flexible budgets. Meanwhile, according to the strategic management literature (Riley, 1987), cost drivers are divided into two major groups: (1) "structural" cost drivers and (2) "executive" cost drivers. For "executive" cost drivers, there is not always a theory that the larger the production volume, the better the cost position. And secondly, it is not always the case that complex production lines are better than simple production lines. The "structural" cost driver category has about five strategic choices related to the underlying economic structure of the organization (Shank 1989): scale (how much investment will be realized); purpose (degree of vertical integration); experience (how many times the company has implemented reproduced products); technology (what technological processes are used at each stage in the company's value chain; and complexity (how wide is the range of products or services offered to customers). The potential list of "Executive" drivers includes the following (Shank 1989): workforce involvement (management as a participant); workforce commitment to continuous improvement; total quality management, TQM (benefits and achievements in terms of product quality); effective utilization of capacity; efficiency of production performance expansion efficiency of product design or formulation; leveraging relationships with suppliers and customers along the value chain.
- ✓ Competitive advantage analysis. One of the important topics in strategic management and SMA is competitive advantage analysis. According to Porter (1980) to have a competitive advantage in the market, we must compete with (1) lowest cost and (2) product differentiation. Lower cost positioning and product differentiation are complementary to competitive strategy. However, competition in the market is always dynamic as business conditions in different countries and markets change. The essence of the "lowest cost" strategy is to produce the lowest-cost product in the market to become the market leader in terms of cost, otherwise known as the cost leader, and have a strategic position in it. The company's cost reduction can be achieved by continuously analyzing costs and controlling costs, reducing costs related to research and development, services, and advertising. The essence of the "product differentiation" strategy is to create products that consumers consider unique. The phenomena of product differentiation include brand loyalty, superior customer service, etc.

Table 3. Comparative analysis of strategic management accounting and strategic cost management

Strategic Management Accounting	Strategic Cost Management
SIMILARITIES	
- Work on data from the management accounting system, related to costs - designed for strategic decision-making - focus external to the firm	
DIFFERENCES	
Origins / Channels	
UK, <i>Management Accounting Research</i> , British textbooks	US, <i>Journal of Management Accounting Research</i> , US textbooks
Underlying Theories / Concepts	
Attributes (as used by Lancaster) Economics (Baumol's theory)	The two generic strategies, the value chain (Porter) ABC (Kaplan)
Objective	
Broad: contributing to strategic decision-making	Specific: determining and maintaining the firm's competitive position
Method / Techniques	
Consumer Life Period, Activity Based Cost, Critical Price or costing, Trademark Evaluation, Consumer Convenience, The cost of Life series or cycle, Benchmarking, the cost of attribution, Chain evaluation Cost, Strategic estimation costing or pricing, objective Costing, The analyse of Capacity Pricing and Convenience, Estimation cost of consumers or assets etc.	Value chain; Analysis of cost drivers and activity drivers; Competitive position

Source: Shank, 1989, p. 48.

SMA incorporates various techniques and many experts define SMA by influencing the techniques it incorporates such as: Consumer Life Period, Activity Based Costing, Critical pricing or costing, Trademark Evaluation, Consumer Convenience, Serial or Life cycle costing, Benchmarking, Attribution costing, Chain evaluation costing, Strategic costing or pricing, Objective costing, Capacity and Convenience Pricing Analysis, Consumer or asset estimation costing and different strategic performance analysis structures. Some academics and observers reject the idea that activity based costing is part of SMA, different academics and critics reject the idea that activity based costing (ABC), is part of strategic management accounting, and in fact after the discovery of SMA, a lot of research was done precisely by studying SMA techniques and especially activity based costing. SCM is more limited than SMA because it aims to improve a company's cost structure to enhance and strengthen its competitive position.

Strategic management accounting as an integral part of strategic management

So far, the main focus has been on the theoretical arguments about SMA (for further arguments, see Bromwich, 1990). However, having defined SMA and outlined its differences with traditional management accounting and SCM, it is necessary to position it within the broader framework of organizational strategic management. Hunger and Wheelen's (1996) four-stage model of strategic management will be used to support that discussion (environmental analysis, strategy formulation, strategy implementation, and strategy evaluation). As discussed, strategic management has the main objective of managing all the resources of economic life, with a primary focus on the organization's competitive advantage. The managers deal mainly with the external affairs of the company and are market-oriented by constantly seeking information about them. With continuous market turmoil, the role of strategic management is becoming increasingly important. To be efficient, the process requires information, which is different at each of its four stages.

Various professional groups within a company strive to continuously supplement the information required for strategic management needs. Since about 40 years ago, Simmonds found

that management accounting must be strategically oriented in order to continue to play a very important role in the company and its management. It is clear that if accountants fail to provide the information themselves, other groups will do so. Accountants cannot take on the role of strategy formulators; they need to work continuously with individuals in other fields who have other types of strategic information (e.g., marketing or business planning or economics, etc.) to support strategic management.

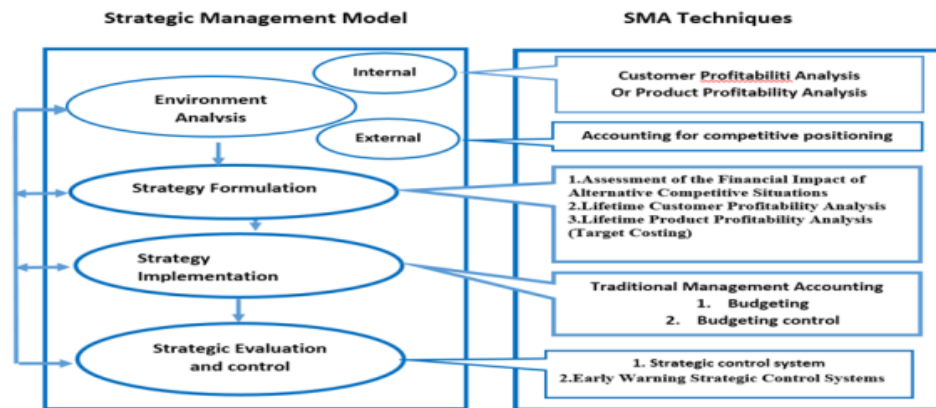


Figure 1. Strategic Management Accounting as an integral part of Strategic Management.

Management accountants as strategic information providers

Since the concept of SMA in the early 1980s, researchers have envisioned an important role for management accountants in providing strategic information and, furthermore, in the initiation and implementation of SMA practices (Dixon and Smith, 1993; Shank, 1989; Simmonds, 1981). However, empirical evidence suggests that they play a limited role in this regard (Yazdifar et al., 2019; Carlsson-Wall et al., 2015; Lord, 1996). Such a limited role can be attributed to five reasons that determine the ability of management accountants to provide relevant strategic information that can be exploited by decision makers, as well as to initiate and implement SMA practices. These reasons include:

- ✓ Understanding the business environment and operational complexity: Carlsson-Wall et al. (2015) articulate in their case study how management accountants are not involved in strategic decision-making in an inter-organizational context. They are simply believed to have insufficient awareness of the technical complexities surrounding the development of strategic inter-organizational relationships. This concurs with Yazdifar et al. (2019) who interviewed management accountants who recognized that other managers were more aware of the business and technical operating environment and therefore better equipped to suggest and implement innovations.
- ✓ Understanding the information needs and ways of processing information of decision makers: In most of the interviews conducted by Pierce and O'Dea (2003), management accountants did not demonstrate sufficient understanding of the information and management accounting practices that production managers and sales managers need or could benefit from. Uecker (1978) and Brecht and Martin (1996) emphasize the importance of understanding AIS user behavior that accountants must take into account when deciding what system design to adopt and what information to provide. Otherwise, the AIS they design may not be used by decision makers and they may lose their status as information providers (Van der Veecken and Wouters, 2002; Brecht and Martin, 1996).

- ✓ Awareness of management accounting innovations, including SMA practices and knowledge for their implementation: Tillmann and Goddard (2008) argue that management accountants should know what management accounting practices are available, what information they provide and how they can be properly implemented to produce relevant and useful information that can be effectively utilized by decision makers. However, the empirical findings of Yazdifar et al. (2019) indicate difficulties in dealing with Tillmann and Goddard's requirements. The management accountants they interviewed admitted that their knowledge of management accounting innovations was only at the theoretical level and they lacked the ability and confidence to apply them.
- ✓ Ability to identify which practices are appropriate and useful to implement: This is an important skill that management accountants must possess in order to be able to apply the most appropriate and useful practices that generate information that is important to decision makers, according to the task at hand (Cadez and Guilding, 2008; Emsley, 2005; Otley, 1980).
- ✓ Competition that management accountants face in their practice with other managers: Managers in other functions, particularly operations and marketing, have been reported to develop their own information systems including to include SMA information (Van derVeecken and Wouters, 2002; Bruns and McKinnon, 1993). For example, Sedevich-Fons (2018) attributes the low recognition of many SMA practices in the management accounting literature to the fact that such practices can also fall within the purview of other disciplines such as operations management and marketing. Scholars such as Dixon and Smith (1993) and Lord (1996) detail how some SMA practices are implemented by individuals in other organizational functions especially marketing and operations without the involvement of their management accountants.

Internal and External Information Systems (IS) Integration

Internal IS integration refers to the electronic linkage of enterprise information technology applications to data acquisition and storage systems to facilitate accurate and timely information sharing in support of cross-functional processes (Hammer, 2001). External IS integration involves the standardization and digitization of information exchange covering business activities across organizations (Zhou & Benton, 2007). Such integration makes information available for timely dissemination to relevant supply chain partners for responsive decision-making and market actions. Furthermore, this study investigates whether internal and external IS integration produces direct significant effects on firm profitability or whether this relationship is established through corporate strategy. The basic conceptual model, which uses internal IS integration as an exogenous construct and external IS integration, internal and external cost management strategies, and profitability as endogenous constructs. By modeling strategic alignment in this way, I hope to show how senior executives can use IS integration around the concept of strategic alignment to deliver business value. Due to market uncertainty, lack of timely and relevant information, and limited knowledge, internal constituents seek to integrate with external actors (suppliers and customers). In the absence of an adequate intra-firm IS infrastructure, the quality of data input for inter-firm IS systems is unlikely to be satisfactory. In the same way, if a company does not have a good inter-company IS infrastructure in place, it cannot receive the latest demand information, supplier information, and customer information necessary to support effective intra-company IT systems (Fayard et al., 2012).

Flynn, Huo, and Zhao (2010) suggested that the impact of internal integration on external integration can be explained from three main perspectives: information sharing, strategic cooperation or alliance, and working together. They explained that an organization cannot share information and data with its supply chain partners if its own systems are not integrated. They further commented that without internal integration, data shared with supply chain partners may not be accurate or timely. Organizations also need to be internally integrated to speak with one voice and develop coherent strategies and action plans with suppliers and customers.

Internal SI Integration and Internal Cost Management Strategy

Cooper and Kaplan (1999) show that the level of internal cost management of firms depends on the integration of their internal value chain activities. Similarly, previous studies have shown that internal cost management resources are enabled and enhanced directly by internal IS integration by linking various activities in the firm's internal value chain, improving transaction accuracy, enhancing data access, and facilitating information sharing within the firm (e.g., Dechow & Mouritsen, 2005; Hansen & Mouritsen, 2007).

External IS Integration and External Cost Management Strategies

Previous research shows that many inter-organizational activities require external information systems to coordinate activities, business transactions, provide data, and communicate with supply chain partners (Anderson, 2007; Hopwood, 1996), with the aim to reduce costs in the value chain, as well as to improve the strategic position of all organizations involved (Anderson, 2007; Anderson & Dekker, 2009a; Anderson & Lanen, 2002; Cooper & Slagmulder, 1998, 2004; Das & Teng, 2000; Dekker, 2003, 2004; Hakansson & Lind, 2004, 2007; Ireland, Hitt, & Vaidyanath, 2002). Integration of external information systems increases participation in electronic exchanges (Internet) and online procurement auctions, providing a channel to identify low-cost suppliers and partners (Choudhury, Hartzel, & Konsynski, 1998; Clemons, Reddi, & Row, 1993).

Coad and Cullen (2006) point out that integrated external information systems are an important resource for managing inter-organizational costs. Anderson and Lanen (2000) found that electronic data exchange with suppliers can reduce some of the complexity costs identified in previous cost driver studies (Ittner & Larcker, 2001). In general, the integration of external information systems is considered important in enabling cost management strategies across the supply chain (Anderson, 2007; Anderson & Dekker, 2009a, 2009b; Chapman & Kihn, 2009; Coad & Cullen, 2006; Hopwood, 1996; Ward & Zhou, 2006).

Internal Cost Management Strategies and External Cost Management Strategies

Internal cost management resources can be described as a portfolio of activities and routines that encompass a wide range of cost management activities used in a firm's internal value chain (e.g., Anderson, 2007; Fayard et al., 2012). Previous research suggests that inter-organizational cost management activities can be described as an extension of internal cost management activities (Cooper & Slagmulder, 1998, 2004; Fayard et al., 2012). Knowledge and experience in using internal cost management resources can be extended to build inter-organizational resources to manage costs for supply chain partners for mutual benefit (Fayard et al., 2012). There is evidence that individual internal cost management activities have been applied to inter-organizational environments to manage costs for the mutual benefit of supply chain partners (Anderson, 2007; Fayard et al., 2012). This suggests that organizations with a strong ability to strategically manage internal costs can leverage their knowledge and experience to

develop similar inter-organizational cost management strategies. Thus, an organization's ability to strategically manage internal costs is expected to be an important antecedent or driver of inter-organizational strategic cost management.

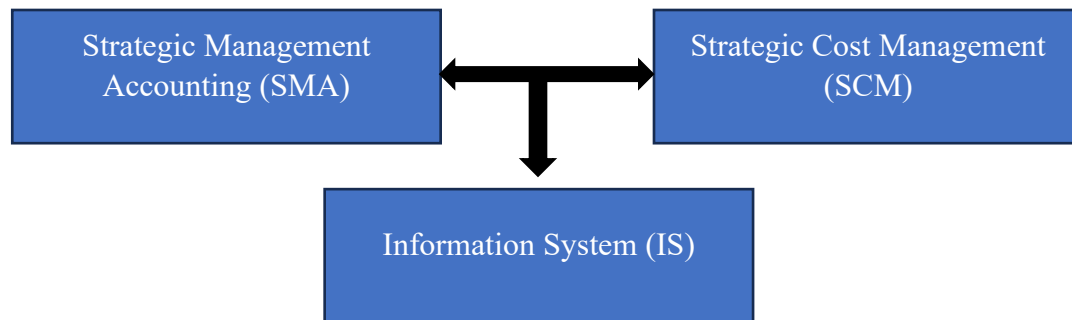


Figure 2. Conceptual Framework

Conclusion

SMA differs from traditional management accounting in that it refers to a prospective view and not to a historical view as management accounting does. SMA focuses on multiple periods, whereas management accounting focuses on a single period. SMA is outward-looking and has a competitive focus, whereas management accounting has a manufacturing focus. SMA is also different from SCM. In general, SMA aims to contribute to decision making while SCM aims to contribute to competitive positioning.

SMA has brought improvements to critique-based accounting and certainly brought innovations to the way of accounting in the future. SMA is an evolution of the existing management accounting due to its continuous improvement and contribution. Strategic management has the main objective of efficient use of all resources while focusing on the organization's competitive advantage. It consists of four stages: Environmental Analysis; Strategy Formulation; Strategy Implementation and Strategy Evaluation. Each of the four stages is associated with SMA techniques. Therefore, SMA can be considered an integral part of strategic management; the interaction between management and SMA techniques is essential for more efficient management of a subject.

The relationship of strategic management accounting (SMA) and strategic cost management (SCM) to information systems is interrelated and can support each other in making managerial and operational decisions of the company. It can be concluded that information systems can assist in supporting the strategic management of the company, improve the managerial and operational performance of the company, and can be influenced by the control authority and business strategy of the company. Therefore, information systems can be an important part of corporate strategic management accounting. Where, information systems can be used to collect, store, and process cost and strategy management information to support the company's managerial and operational decision making.

Solutions and Suggestions

To overcome the limitations of the study, especially to see the relationship between strategic management accounting (SMA) practices and strategic cost management in influencing information systems, future researchers can do the following:

- ✓ Researchers include a relatively larger number of SMA practices that allow researchers to report contingency variables or other variables that are important for a larger group.

- ✓ Researchers explored the potential role of strategic management accounting practices and strategic cost management, further expanding the research.
- ✓ Researchers developed a more integrated and complex model compared to previous studies, by examining not only independent effects but also potential moderating and mediating effects to better understand how information systems influence the implementation of strategic management accounting (SMA) and strategic cost management (SCM).
- ✓ Researchers also controlled for the potential effects of a number of other variables, e.g. competition, product diversity, perceived environmental uncertainty, and firm size, for robustness.

LITERATURE

- Asch, D. "Strategic control: a problem looking for a solution", Long Range Planning, 2, 1992, p.105-110. [https://doi.org/10.1016/0024-6301\(92\)90198-b](https://doi.org/10.1016/0024-6301(92)90198-b)
- Anderson, S. W. (2007). Managing costs and cost structure throughout the value chain: research on strategic cost management. In: C. S. Chapman, A. G. Hopwood, & M. D. Shields (Eds), Handbook of Management Accounting Research, (Vol. 2) . Amsterdam, The Netherlands: Elsevier, pp. 481 – 506. [https://doi.org/10.1016/s1751-3243\(06\)02001-3](https://doi.org/10.1016/s1751-3243(06)02001-3)
- Anderson, S. W., & Dekker, H. C. (2009a). Strategic cost management in supply chains, Part 1: Structural cost management. Accounting Horizons, 23(2), 201-220.
- Anderson, S. W., & Lanen, W. N. (2002). Using electronic data interchange (EDI) to improve the efficiency of accounting transactions. The Accounting Review, 77(4), 703-729.
- Alfian, F, Purba, V,(2020). The Contingency Approaches to the Design of Accounting Systems. *Turkish Online Journal of Qualitative Inquiry*. 11(4). 949-956. <https://tojqi.net/index.php/journal/article/view/8207>
- Azmi, Z.; Nasution, A. (2018). Information System Integration, Knowledge Management, and Management Accounting Adaptability. Proceedings of the International Conference of Science, Technology, Engineering, Environmental and Ramification Researches - Volume 1: ISBN. 9789897584497 ICOSTEERR, pages 1887-1894. DOI: 10.5220/0010070118871894. <https://www.scitepress.org/PublicationsDetail.aspx?ID=tj4rW5PNUgc=&t=1>
- Brigham, E. F. Gapenski L. C, "Intermediate financial management", The Dryden Press, Fort Worth, 1996.
- Bromwich, M, "The case for strategic management accounting: the role of accounting information for strategy in competitive markets", Accounting, Organizations and Society, 15, 1990, p.27-46. [https://doi.org/10.1016/0361-3682\(90\)90011-i](https://doi.org/10.1016/0361-3682(90)90011-i)
- Blocher, E., Chen, K. H., & Lin, T. W. 1999. Cost Management, A Strategic Emphasis: McGraw-Hill, P.27.
- Brecht, H.D., Martin, M.P., 1996. Accounting information systems: the challenge of extending their scope to business and information strategy. Account. Horiz. 10 (4), 16–22.
- Bruns, W.J., McKinnon, S.M., 1993. Information and managers: a field study. J. Manag. Account. Res. 5 (Fall), 84–108
- Cadez, S., & Guilding, C. "An exploratory investigation of integrated contingency model of strategy management accounting". Accounting, Organizations and Society, 33, 2008, p. 836-863. <https://doi.org/10.1016/j.aos.2008.01.003>
- Cadez, S., Guilding, C., 2008. An exploratory investigation of an integrated contingency model of strategic management accounting. Account. Organ. Soc. 33 (7–8),836–863.

- Chapman, C. S., & Kihn, L. A. (2009). Information system integration, enabling control and performance. *Accounting, Organizations and Society*, 34, 151-169.
- Carlsson-Wall, M., Kraus, K., Lind, J., 2015. Strategic management accounting in close inter-organisational relationships. *Account. Bus. Res.* 45 (1), 27–54.
- Choudhury, V., Hartzel, K. S., & Konsynski, B. R. (1998). Uses and consequences of electronic markets: An empirical investigation in the aircraft parts industry. *MIS Quarterly*, 22(4), 471-507.
- Clemons, E. K., Reddi, S. P., & Row, M. C. (1993). The impact of information technology on the organization of economic activity: The ‘move to the middle’ hypothesis. *Journal of Management Information Systems*, 10(2), 9-35.
- Cooper, R., “Explicating the logic of ABC”, *Management Accounting*, 68, 1990, p. 58-60.
- Cooper, R.; Kaplan R. S. “Measure costs right: make the right decisions”, *Harvard Business Review*, 66, 1988, p. 96- 103.
- Cooper, R., & Slagmulder, R. R. A. (1998). Strategic cost management - What is strategic cost management? *Management Accounting*, January, 14-16. <https://doi.org/10.1093/acprof:oso/9780199283361.003.0006>
- Cooper, R., & Kaplan, R. S. (1999). *The design of cost management systems* (2nd ed.). Upper Saddle River, NJ: Prentice-Hall.
- Cooper, R., & Slagmulder, R. (2004). Inter-organizational cost management & relational context. *Accounting, Organizations and Society*, 29, 1-26.
- Corboy, M.; O'Corrbui D. “The seven deadly sins of strategy”, *Management Accounting*, 1999, p.77:
- Das, T. K., & Teng, B. S. (2000). A resource-based theory of strategic alliances. *Journal of Management*, 26(1), 31-61.
- Dechow, N., & Mouritsen, J. (2005). Enterprise resource planning systems, management control and the quest for integration. *Accounting, Organizations and Society*, 30(7-8), 691-733.
- Dekker, H. (2003). Value chain analysis in inter-firm relationships: A field study. *Management Accounting Research*, 14, 123.
- Dekker, H. C. (2004). Control of inter-organizational relationships, evidence on appropriation concerns and coordination requirements. *Accounting Organizations and Society*, 29, 27-49.
- Dixon, R., Smith, D.R., 1993. Strategic management accounting. *Omega* 21 (6), 605–618.
- Drury, C, “Costing: an Introduction”, International Thomson publishing, London, 1998,p 2-22. <https://doi.org/10.1007/978-1-4899-6878-4>
- Duçi, Ejona. 2021. The Relationship between Management Accounting, Strategic Management Accounting and Strategic Cost Management. *Academic Journal of Interdisciplinary Studies*. DOI: <https://doi.org/10.36941/ajis-2021-0146>
- Emsley, D., 2005. Restructuring the management accounting function: a note on the effect of role involvement on innovativeness. *Manag. Account. Res.* 16 (2), 157–177.
- Fayard, D., Lee, L. S., Leitch, R. A., & Kettinger, W. J. (2012). Effect of internal cost management, information systems integration, and absorptive capacity on interorganizational cost management in supply chains. *Accounting, Organizations and Society*, 37, 168-187.
- Flynn, B. B., Huo, B., & Zhao, X. (2010). The impact of supply chain integration on performance: A contingency and configuration approach. *Journal of Operations Management*, 28(1), 58-71.
- Guilding, C., “Competitor-focused accounting: an exploratory note”, *Accounting, Organizations and Society*, 24, 1999, p. 583-595. [https://doi.org/10.1016/s0361-3682\(99\)00007-0](https://doi.org/10.1016/s0361-3682(99)00007-0)

- Goold, M., Quinn J. J., "The paradox of strategic controls", *Strategic Management Journal*, 11, 1990, p.43-57. <https://doi.org/10.1002/smj.4250110104>
- Hadid, Wael., & Al-Sayed, Mahmoud. 2021. Management accountants and strategic management accounting: The role of organizational culture and information systems. *Management Accounting Research*. <https://doi.org/10.1016/j.mar.2020.100725>
- Hakansson, H., & Lind, J. (2004). Accounting and network coordination. *Accounting, Organizations and Society*, 29, 51-72.
- Hakansson, H., & Lind, J. (2007). Accounting in an inter-organizational setting. In C. S. Chapman, A. G. Hopwood, & M. D. Shields (Eds.), *Handbook of management accounting research*. Oxford: Elsevier Ltd.
- Hansen, Mowen, Guan, "Cost Management: Accounting and Control", 6th Edition, 2009, South-Western Cengage Learning, USA, pp.377.
- Hansen, A., & Mouritsen, J. (2007). Management accounting and changing operations management. In T. Hopper, R. W. Scapens, & D. Northcott (Eds.), *Issues in management accounting* (3rd ed.). London: Prentice-Hall.
- Hammer, M. (2001). The superefficient company. *Harvard Business Review*, 79, 82-91.
- Hilton, "Managerial accounting", Sixth Edition, Boston, Mc Graw Hill, 2004.
- Hope, J., "Customers: strategic, loyal and profitable", *Management Accounting*, 76, 1998, p. 22-23.
- Hopwood, A. (1996). Looking across rather than up and down, on the need to explore the lateral processing of information. *Accounting, Organizations and Society*, 21, 589-590.
- Huang, C. D., & Hu, Q. Achieving IT-Business Strategic Alignment via Enterprise-Wide Implementation of Balanced Scorecards. *Information Systems Management*, 24, 2007, p.173-184. <https://doi.org/10.1080/10580530701239314>
- Hunger, D. J., Wheelen T. L., "Strategic management", Addison-Wesley publishing, Reading, 1996.
- Hussey, D., "Strategic management: from theory to implementation", Butterworth-Heinemann, Oxford, 1998. <https://doi.org/10.4324/9780080498287>
- International federation of accountants (IFAC), "International management accounting practice statement", *Management accounting concepts*. New York, 1998.
- Ireland, R. D., Hitt, M. A., & Vaidyanath, D. (2002). Alliance management as a source of competitive advantage. *Journal of Management*, 28(3), 413-446.
- Jacob, R. "Why some customers are more equal than others". *Fortune*, 130, 1994, p.215-220.
- Jung, M. K., Riegler C., "Accounting information, salesforce compensation and acquisition of new customers", *European Accounting Review*, 8, 1999, p.421-441. <https://doi.org/10.1080/096381899335862>
- Kaplan, R.S., & Norton, D.P. "The balanced scorecard – Measures that drive performance". *Harvard Business Review*, 70, 1992, p.71-80. https://doi.org/10.1057/978-1-137-00772-8_683
- Lorange, P., Morton S., Goshal S., "Strategic control", West Publishing company, St.Paul,1986.
- Lord, B.R., 1996. Strategic management accounting: The emperor's new clothes? *Manag. Account. Res.* 7 (3), 347–366
- Maiga, Adam S. 2015. Information Systems Integration and Firm Profitability: Mediating Effect of Cost Management Strategy. *Advances in Management Accounting*. <http://dx.doi.org/10.1108/S1474-787120150000025004>

- Moon, P., Bates K., "Core analysis in strategic performance appraisal", *Management Accounting Research*, 4, 1993, p. 139-152. <https://doi.org/10.1006/mare.1993.1009>
- Petera, Petr., & Šoljaková, Libuše. 2020. Use of strategic management accounting techniques by companies in the Czech Republic. *ECONOMIC RESEARCH-EKONOMSKA ISTRAŽIVANJA*. DOI: 10.1080/1331677X.2019.1697719
- Pierce, B., O'Dea, T., 2003. Management accounting information and the needs of managers: perceptions of managers and accountants compared. *Br. Account. Rev.* 35 (3), 257–290.
- Porter, M. E. "Competitive Strategy: Techniques for Analyzing Industries and Competitors". New York: Free Press, 1980. (Republished with a new introduction, 1998.) [https://doi.org/10.1016/0019-8501\(82\)90025-6](https://doi.org/10.1016/0019-8501(82)90025-6)
- Porter, M. E. *The Competitive Advantage: Creating and Sustaining Superior Performance*. NY: Free Press.1985. (Republished with a new introduction, 1998.)
- Porter, M. E., "Competitive advantage", The free press, New York, 1998.
- Pučko, D., "Strateško upravljanje", Faculty of Economics, Ljubljana.1999.
- Riley D, "Competitive cost based investment strategies for industrial companies", in *Manufacturing Issues*, New York, Booz Allen and Hamilton. 1987.
- Rounaghi, Mohammad Mahdi, Jarrar, Hajer & Dana, Leo-Paul., 2021. Implementation of strategic cost management in manufacturing companies: overcoming costs stickiness and increasing corporate sustainability. *Future Business Journal*. <https://doi.org/10.1186/s43093-021-00079-4>
- Schendel, D. E., Hofer C. W., "Strategic management", Little Brown, Boston, 1979.
- Sedevich-Fons, L., 2018. Linking strategic management accounting and quality management systems. *Bus. Process. Manag. J.* 24 (6), 1302–1320.
- Shank, J.K. "Strategic cost management: new wine, or just new bottles?", *Journal of Management Accounting Research*, Vol. 1, 1989, p. 47-65.
- Shank, J. K. Analyzing technology investments - From NPV to Strategic Cost Management (SCM). *Management Accounting Research* 7 (2): 1996a, p.185-197. <https://doi.org/10.1006/mare.1996.0011>
- Shank, J, K, and Govindarajan, V. "Strategic Cost Analysis", Irwin Inc, Homewood, Illinois, 1989.
- Shank, J. K.; Govindarajan V., "Strategic cost management: the value chain perspective", *Journal of Management Accounting Research*, 4, 1992, p. 179-197.
- Schnoebelen, S., Skillern D., "Measuring customer profitability", *Apparel Industry Magazine*, 57, 1996,p. 52-54.
- Sangster, A. (1994). The Adoption of IT in Management Accounting: The Expert Systems Experience". *Journal of Information Technology*, Vol. 9, 1994, pp. 159-169. <https://doi.org/10.1177/026839629400900207>
- Siboro, D.; Siahaan, A.; and Ginting, S. (2018). Corporate Social Responsibility is Viewed from a Contingency Perspective.In *Proceedings of the 1st Unimed International Conference on Economics Education and Social Science - Volume 1: UNICEES*, ISBN 978-989-758-432-9, pages 973-977. DOI: 10.5220/0009499109730977.
- Simmonds, K. "Strategic management accounting". *Management Accounting*, 59, 1981, p.26-30.
- Simmonds, K. (1992). "Strategic Management Accounting: Strategy Assessment Using the Relative Cost Graph", Mimeo, London Business School.
- Smith, M., "Strategic management accounting: text and cases", Butterworth-Heinemann, Oxford, 1997.

- Smith, M., "Strategic management accounting: the public sector challenge", *Management Accounting*, 78: 2000, p.40-42.
- Tillmann, K., Goddard, A., 2008. Strategic management accounting and sense-making in a multinational company. *Manag. Account. Res.* 19 (1), 80–102.
- Tomkins, C., & Carr, C. "Reflections on the papers in this issue and a commentary on the state of strategic management accounting". *Management Accounting Research*, 7, 1996, p.271-280. <https://doi.org/10.1006/mare.1996.0015>
- Otley, D., 1980. The contingency theory of management accounting achievement and prognosis. *Account. Organ. Soc.* 5 (4), 413–428.
- Uecker, W.C., 1978. A behavioral study of information system choice. *J. Account. Res.* 16 (1), 169–189.
- Van der Veecken, H.J.M., Wouters, M.J.F., 2002. Using accounting information systems by operations managers in a project company. *Manag. Account. Res.* 13 (3), 345–370.
- Walker, O. C., Boyd H. W., Larreche J. C, "Marketing strategy: planning and implementation", Irwin, Chicago, 1995,
- Ward, K., "Strategic management accounting", Butterworth-Heineman, Oxford, 1992. <https://doi.org/10.4324/9780080937922>
- Ward, P., & Zhou, H. (2006). Impact of information technology integration and lean/just-intime practices on lead-time performance. *Decision Sciences*, 37, 177-203.
- Wilson, R.M.S. "Strategic management accounting", in Ashton, D., Hopper, T. and Scapens, R. (Eds), *Issues in Management Accounting*, Vol. 2, Prentice-Hall Europe, London, 1995, p.159-190.
- Wilson, R. M. S. and Chua, W. F. (1993) *Managerial accounting: method and meaning* / Richard M.S. Wilson, Wai Fong Chua ; series edited by Richard M.S. Wilson Chapman & Hall, London ; New York, pg 3-5.
- Yazdifar, H., Askarany, D., Wickramasinghe, D., Nasser, A., Alam, A., 2019. The diffusion of management accounting innovations in dependent (subsidiary) organizations and MNCs. *Int. J. Account.* 54 (1), 1–42.
- Zeithaml, V. A., "Service quality, profitability and economic worth of customers: what do we know and what do we need to learn", *Academy of Marketing Science Journal*, 28, 2000, p.67-85. <https://doi.org/10.1177/0092070300281007>
- Zhou, H., & Benton, W. C. (2007). Supply chain practice and information sharing. *Journal of Operations Management*, 25(6), 1348 1365.