

Accounting for Empowered Organizations in an Era of Competitive Intensity and the Age of Creative Intensification: The Case for Strategic Collaborative Accounting (SCA)

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This paper discusses the evolution of management accounting and proposes a new approach, Strategic Collaborative Accounting, to ensure its continued relevance in the face of changing business landscapes. With the shifting dynamics of future organizations characterized by complex stakeholder relationships, technological advancements, and evolving business models, traditional management accounting faces challenges in maintaining its significance. The paper suggests that future management accounting practices will involve shared responsibilities among professionals, focusing on building trust, managing risks, and supporting collaborative relationships. It predicts a reduction in finance department size, disappearance of traditional bookkeeping roles, and closer integration of accounting functions with operational teams. By advocating for Strategic Collaborative Accounting, the paper aims to empower organizations to adapt, compete, and innovate effectively in the future business environment.

Keywords: collaborative accounting, strategic collaborative accounting, management accounting, strategic management accounting, strategic partner, business partner

INTRODUCTION

There is a worldwide consensus among scholars and management practitioners that the current business environment will continue to experience turbulence and uncertainty (Laitinen, 2003; Anderson and McAdam, 2004; Bjurklo, 2008; Vasconcelosa and Ramirez, 2011; Clinton and White, 2012; Angelis et al., 2012; Goretzki et al., 2013). Currently, manufacturing and service organizations are operating in increasingly hostile business environments characterized by intensifying global competition, changing social values and demographic trends, altering patterns of international trade, changing organizational roles, accelerating globalization, national and international quality awards, short product life cycles, accelerated technological advancement, and demands for greater product diversity (Corrigan, 1998; Neely, 1998; Chua and Baxter, 2000; Atkinson and Brown, 2001; Anderson and McAdam, 2004; Krell, 2011; Vasconcelosa and Ramirez, 2011; Lambert and Sponem, 2012; Werhane, 2012). This reality pressurizes organizations to constantly implement new management tools, such as flexible manufacturing systems, computer-integrated manufacturing, total quality management, artificial intelligence in advanced manufacturing, and business process re-engineering (Arinez et al., 2020; Hammer & Champy, 1993) to cope with emerging threats and opportunities (Deming, 1982; Turney and Anderson, 1989; Sil'ince and Sykes, 1995). In turn, the turbulence, uncertainty, and new management tools impose considerable pressure on management accounting innovation and diverse, high-quality management information (Al-Okaily et al., 2022;

Andreassen, 2020; Kambel et al., 2020; Odonkor et al., 2024; Wolf et al., 2020; Zhang et al., 2020). This has led to an expanding range of organizational functions and activities and mounting pressure on management accountants to redefine their role in the organization (Johnson and Kaplan, 1987; Bromwich and Bhimani, 1994; Ghalayini and Noble, 1996; Järvenpää, 2007; Järvenpää, 2009; Goretzki et al., 2013). Research suggests that business environmental changes and associated information needs have an enormous impact on the role and responsibilities of an organization's management accounting function (Al-Okaily et al., 2022; Anastas, 1997; Granlund & Lukka, 1998; Latshaw & Choi, 2002; Marlina et al., 2023; Smith & Briggs, 1999; Wolf et al., 2020).

The rapid pace of technological innovations in manufacturing, information technology, electronic-based relationships and connectivity, the projected vicious competitive environment of today and the future, and the associated competitive strategies, including more knowledgeable workers, and increased collaboration among overlapping employee, partner, customer, and outside contributor networks (Roberts, 2010), has presented management accounting with challenges that threaten its existence. However, the interest of academic research in the practical aspects of management accounting has faded in recent times. Management accounting research has transitioned from a technical to a social focus. Research that incorporates both aspects will reflect the real-world nature of the accounting discipline (Baldvinsdottir et al., 2010; Fullerton et al., 2013). A 2003 and 2012 survey of management accounting (MA) caution that it is at a critical juncture, as demonstrated by a shift in roles and practices, a recessive economy, and the mass rejection of emerging MA tools and techniques (Clinton & White, 2012). The history of the accounting profession is littered with evidence of the ever-changing nature of accounting and the expanding repertoire of accounting practice (Parker, 2001; Wolf et al., 2020). This paper expands on Parker's (2001) and Chua and Baxter's (2000) research. Both studies examined the changing role of the accounting profession in industry and commerce. Parker studied over 100 years of broadening professional practice and the array of contemporary environmental factors driving the broadening scope of work. On the other hand, Chua and Baxter focused on the significant discontinuities emerging within the management accounting profession, the themes of post-industrialism, and further possibilities for the profession. Both studies accentuated past and emerging challenges and evidence of the accounting profession's track record of successful adaptation to change. Most importantly, both studies highlight the need for urgent research into the sustenance of the accounting profession's future relevance in the face of identified threats.

This study examines the accounting profession's past response to the demands of its changing environment and presents Strategic Collaborative Accounting (SCA) as a viable and strategic response to maintaining professional relevance in the face of emerging risks of the new millennia. Developing on the research by Parker (2001), this study employs historical trend analysis to examine professional practice responses to dealing with change. Predicting the future is fraught with difficulties and challenges due to variations in contexts, circumstances, players, and beliefs (Carr, 1964; Hobsbawm, 1998; Parker, 2001; Tosh, 1984). However, history's embeddedness in the present has the potential to facilitate a transition from the present into the future (Young & Mouck, 1996). According to Parker (2001: p424) "basing an evaluation of contemporary accounting and its changing scope upon a historical perspective offers the opportunity of identifying possibilities that are latent in our present circumstances, understanding the accounting profession's identity and changing aspirations, and recognizing accounting as a product of socially constructed human choices, subject to ongoing change into the future." According to Chua and Baxter (2000), the unique challenges and opportunities facing MA are dissected in light of the strengths and limitations of strategic management accounting (SMA). From this perspective, our study presents SCA as an encompassing alternative from both systems and strategic perspectives.

The paper is structured as follows: a review of MA change is presented from the contingency theory perspective and historical trends over 100 years of the accounting profession's change accommodation adjustments. The expanding repertoire of management accounting practices, including the concept of SMA, is considered and compared with the current and future management accounting challenges. Strategic Collaborative Accounting is proposed, discussed, and presented as a viable option for empowered, competitive, and creative future organizations.

CONTINGENCY THEORY AND ACCOUNTING RESPONSES TO CHANGE

In times of high uncertainty, the accounting profession should adapt from a contingency theory perspective, thus reflecting the influence of variables such as the competitive environment, technology, service processes, and changes in the structure, performance measures, and mission of the organization (Andreassen, 2020; Briers & Hirst, 1990; Chapman, 1997; Chenhall, 2003; Fisher, 1995; Forsaith et al., 2004). The basic premise of the contingency theory is that changes in the external environment should trigger appropriate changes in the organizational strategy and structure, including accounting practices (Abernathy & Lillis, 1995; Anderson & Lanen, 1999; Chenhall, 2003; Luft & Shields, 2003). Historically, the accounting profession's response to change can be categorized into five approaches (Table 1) – the expansion in service range, the introduction of interdisciplinary practice, industry specialism for dedicated and more efficient industry-focused service, innovation in information processing and reporting for enhanced management information support, and the redefinition of the accounting profession's role in industry and commerce to remain relevant (Al-Okaily et al., 2022; Dai & Vasarhelyi., 2017; Edwards, 1989; Guilding et al., 2000; Matthews, 1998; Odonkor et al., 2024; Previts, 1985; Previts & Merino, 1979; Shank & Govindarajan, 1993; Simister et al., 1998; Warren et al., 2015).

In its infancy, SMA was defined as “the provision and analysis of financial information on the firm's product markets and competitors' costs and cost structures and the monitoring of the enterprise's strategies and those of its competitors in these markets over a number of periods” (Bromwich, 1990: p27). A prominent limitation of this definition is that it focuses mainly on financial information, thus ignoring the role and importance of non-financial information (Collier and Gregory, 1995; Langfield-Smith, 2008). In recent years, SMA has been viewed as entailing a move away from a purely financial focus into broader business issues requiring a deeper appreciation of an organization's business and environment (Keating and Ansari, 1997; Nyamori, 2000; Agasisti et al., 2008). SMA is characterized by three elements – market and external stakeholder orientation, a focus on competitors and competition, and long-term orientation (Dixon and Smith, 1993; Roslender and Hart, 2002; Agasisti et al., 2008). However, research indicates that not all SMA systems reflect these attributes (Guilding et al., 2000; Seal, 2001) and are often the result of non-linear processes influenced by several internal (self-referential theory) and external (isomorphism theory) pressures in which the search for appropriate information and organizational identity overlap (Von Krogh and Roos, 1996; Seal, 2001; Agasisti et al., 2008). This is evident from the five standard implementation features of SMA: cost process implementation, performance evaluation adoption, competitor-oriented appraisal, customer-oriented analysis, and a strategic-based environmental management system (Collier and Gregory, 1995; Chai-Amonphaisal and Ussahawanitchakit, 2010).

TABLE 1
A SUMMARY OF THE HISTORY OF ACCOUNTING RESPONSES TO CHANGE

Period	Accounting profession's response to change	Response classification	Response Details	Drivers of the responses to change
Mid to late 1800 upwards	Investigation work	Expansion of accounting services	Examination of company financial condition; investigations into corporate fraud; promoting company floatation; government and business organization efficiency studies; government organization remuneration and working conditions investigations; working conditions investigations; performance audits.	(1) Internationalization and globalization of business
1920s to date	Management advisory service (MAS)	Interdisciplinary practice	A wide range of broad scope services including taxation planning; accounting system design and installation; business investigations; corporate reconstruction; executive search; pre-acquisition investigations; manufacturing plan layout design; human resources, marketing, logistics and general management services.	(2) The growth of non-accounting competitors and alliances. (3) The rise of information technology. (4) Broader scope accountability pressures.
1930s to date	Industry expertise specialization	Industry specialism	Development of management and financial service expertise in particular industries by accounting firms.	(5) Changing work patterns and attitudes. (6) Emergence of knowledge-based economy.
1990 to date	Strategic Management Accounting (SCA)	Innovation in information processing; provision of broad-based management information	Quality and broad-based strategic management intelligence using innovative accounting tools and techniques including: activity-based cost driver analysis; attribute, life cycle, target, and strategic costing; value change analysis; brand valuation; competitor cost analysis; competitive position monitoring; customer profitability analysis; benchmarking; and balanced scorecard.	(7) Empowered and discriminating product and service consumers.
2000 upwards	Strategic partner role	Re-define the accounting profession	Advocating role change from strategic management accounting (SMA) to business and financial strategist and market orientated business partner.	

Source: Based on Parker (2001)

How successful has the concept of SMA been so far? In reality, SMA has faced several extensively documented hurdles coupled with the fact that accounting systems and practices can be slow or difficult to change (Burns et al., 2003; Lukka, 2007). Despite the much-publicized strengths of SMA, outcomes of various studies highlighted the low uptake of its tools and techniques (Guilding et al., 2000; Langfield-Smith, 2008), questioning whether SMA was a figment of academic imagination (Lord, 1996) and the result of the preparedness, capacity (intellectual and emotional), and skills of accountants to make SMA a success (Cooper, 1996b; Cooper, 1996c; Shank, 2007). Some researchers have gone further to accuse specific high-profile individuals of promoting management accounting innovations to exploit potential consulting opportunities rather than providing evidence of the innovation's efficacy (Jones and Dugdale, 2001; Lukka and Granlund, 2002; Emsley, 2005). For example, a review of 1,477 articles published on Activity Based Costing (ABC) between 1990 and 2005 concluded that although ABC is considered a valuable technique by practicing managers and accountants, its global adoption is low, and the evidence of its positive impact on performance is weak (Gosselin, 2007). Strategic cost management techniques such as Attribute Costing, life-cycle costing, and target costing are not well known in business organizations, and the majority of firms that adopted the Economic Value Added (EVA) technique for performance measurement purposes fail to use it (Forsaitth et al., 2004; Xydias-Lobo et al., 2004; Mersereau, 2006). A study by Forsaitth et al. (2004) p19 concludes that "many of the various contemporary techniques that have been developed in response to the changing requirements of management accounting were not seen by the respondents to this study as being particularly useful. Activity Based Costing, Balanced Scorecard, Economic Value Added, and Benchmarking were all cited as not currently used and unlikely to be used in the future."

A recent study by Clinton and White (2012) corroborates these findings and emphasizes that the adoption of virtually every significant new management accounting tool is not only being rejected but also viewed as "not relevant." (p42). Some researchers and practitioners have questioned the ability of strategic performance measures (SPMS) to support performance in dynamic environments "given the risks of over-commitment to specified intended strategic decisions in such contexts" (Micheli and Manzoni, 2010; Bisbe and Malagueno, 2012). An extension of SMA that involves the integration of management accounting and marketing to create a kind of "brand management accounting" that focuses not only on fundamental measures such as market share and growth but also on customer profitability analysis, brand strength, brand awareness, brand recognition, and brand loyalty (Roslender and Hart, 2002; Roslender and Hart, 2003), has been suggested. In practice, the much-criticized traditional management accounting techniques, such as budgetary planning and control, continue to receive extensive support (Burns & Yazdifar, 2001; Ezzamel et al., 1996; Heald & Hodges, 2020) and are used alongside the new and innovative accounting tools and techniques (Scapens et al., 1996; Burns and Vaivio, 2001). This demonstrates that while SMA has made some impact on practice, scholarship, and accounting, it is not at the rate envisaged by its founders, and the lack of widespread adoption makes it challenging to define the success level of SMA implementation (Innes and Mitchell, 1995; Innes et al., 2000; Anderson, 2007; Langfield-Smith, 2008; Yazdifar et al., 2008). The work of Lapsley and Pettigrew (1994) warns against simply believing that the mere adoption of strategic management accounting practices will suffice to sustain a competitive advantage. Accounting staff must work closely with other functional areas for corporate success (Chenhall & Langfield-Smith, 1998; Mersereau, 2006; Qasim & Kharbat, 2020; Roslender et al., 1998). These observations support the calls for investigations into the gap between the rhetoric of accounting and management innovations and their technical realities (Zbaracki, 1998; Laitinen, 2003).

By the late 1990s, accountants were called to revolutionize their skills and adopt a more sophisticated role in the organizations they serve in recognition of SMA limitations and consideration of the nature, magnitude, and intensity of environmental challenges confronting businesses and other organizations (Johnson and Kaplan, 1987; Bromwich and Bhimani, 1994; Ghalayini and Noble, 1996; Järvenpää, 2007; Järvenpää, 2009; Goretzki et al., 2013). The new realities of the business environment challenged accountants to nurture a new mindset as strategic business partners (SBPs) or learning-oriented strategic accountants (Table 2) (Coad, 1996; Coad, 1999; Granlund and Malmi, 2002; Järvenpää, 2007; Weißenberger and Angelkort, 2011; Lambert and Sponem, 2012) to ensure that business activities align with the organization's strategies (Tricker, 1989; Bromwich, 1990; Nyamori, 2000). Modern and future

management accountants should be “all-rounders with a broad perspective on the organization, be able to coordinate operative and strategic processes, advise and challenge managers, and act as a kind of general manager” (Goretzki et al., 2013: p50). SBPs act as internal consultants, leaders on cross-functional teams, trusted business advisers, organization educators, leaders in using statistical/analytical techniques, interpreters and managers of complexity, designers, and managers of information systems, change agents, and designers and controllers of performance measurement systems (Barbera, 1996; Russell et al., 1999; Forsaith et al., 2004; Järvenpää, 2009; Goretzki et al., 2013). Their roles and responsibilities cover the management of change, knowledge, performance measurement, and the environment, and expanded assurance. Table 2 provides details of these roles and responsibilities and highlights a variety of multidisciplinary skills and competencies required for a successful business partner role in a sophisticated organization.

The discussed limitations of SMA and the technological and other forecast competitive challenges have led to informed calls to consider ways to reinvent and reassert the “value of the brand embedded in the title of management accountant,” warning that:

“The new millennium will be a period of either great disciplinary gains or loss, depending on how researchers, educators, and practitioners react to the challenge of the years 2000 and beyond” (Chua and Baxter, 2000: p62).

From the limitation analysis, two significant drivers emerge with the potential to constrain SMA’s ability to achieve and sustain management accounting relevance. First, it failed to generate acceptance as a discipline due to the lack of a sound theoretical framework, thus leaving it vulnerable to perception as nothing more than a regrouping of elements that have long been part of strategic management, management accounting, or marketing (marketing (Roslender and Hart, 2003; Hoffjan and Wömpener, 2006). Second, and most importantly, SMA is impossible as a discipline and ineffective as a management information system without a clearly defined accounting infrastructure and a collaborative architecture. Therefore, the answer to establishing the full potential of SMA and sustaining management accounting relevance lies in developing a new management accounting infrastructure and architecture that builds on the strengths of the advanced information technology of the future, the knowledge, power, skills, and expectations of the “gold-collar” workers (Kerslake, 2002) and addresses the challenges of the complex organizational and collaborative relationships of the new era (Briers and Chua, 2001). “Post-industrial management accounting does not mirror nature (Rorty, 1980) – it becomes its creator” (Briers and Chua, 2001). Strategic Collaborative Accounting tends to the management information needs and expectations of empowered organizations in an era of competitive intensity and creative intensification.

TABLE 2
THE ACCOUNTANT A STRATEGIC PARTNER – ROLES, RESPONSIBILITIES, AND SKILLS

Roles and responsibilities	Details	Required Multidisciplinary Skills
Change Management	Capitalize on management accounting and strategic management expertise to lead or facilitate change, manage resistance to change and champion change (Parker, 2001; Xydias-Lobo et al., 2011); leader and / or participant in cross-functional teams (Xydias-Lobo et al., 2011).	<p>Strategic management; accounting and finance (including knowledge and environmental management); Human resource management (including social, project, change and international management) and information technology (Simister al., 1998; Nash, 2000; Parker, 2001); ability to create and manage alliances with a wide variety of professionals including lawyers, architects, actuaries, and engineers (Howieson, 2003).</p> <p>Top five competencies:</p> <ol style="list-style-type: none"> 1. Communication skills 2. Strategic and critical thinking skills 3. Client and market focus 4. Interpretation of converging information 5. Technological adeptness (AICPA, 1999; Parker, 2001)
Knowledge Management	This involves a continuous process of creating, capturing, storing, sharing and redistributing knowledge that can enhance organizational performance. It includes "the identification, design and management of systems for creating and disseminating knowledge within organizations" (Parker, 2001:p437); promote a culture of continuous organization learning, analyse and identify knowledge gaps, incorporate knowledge management into strategic planning and implementation (Bonner, 2000; Parker, 2001); and development of a broad range of performance indicators to support knowledge management.	
Risk Management	Risk management aims to minimize and prevent risks of financial loss and reputational damage. It is now considered an organization-wide function spanning the management and control of the internal and external operating, financial, market, legal compliance, technology, health, safety, organizational, human resources, environmental, probity, reputation, sustainability risks (Anon, 2000; Hernandez, 2000; Muire, 2000; Parker, 2001; Ascari, et al., 2021).	
Performance Measurement	Accountants are required to possess the expertise for developing a "broad range of performance indicators including management and employee skills and activities, innovation performance, process efficiency and effectiveness, customer characteristics and behaviour, in addition to their traditional focus on financial measures." (Parker, 2001:p437)	
Environmental Management	Contribute to organizational environmental management through (a) design and maintenance of decision-relevant information systems and related performance measure including environmental costing, environmental operational performance target setting and evaluation, implementation monitoring and contributions to environmental audits (McMahon, 1995; Bell and Lehman, 1999; Parker, 2001); (b) overseeing the integration of environmental strategies throughout the value chain and strategic management process including areas such as process technology, energy saving, packaging, recycling, product design and waste reduction (Parker 2000, 2001; Shelton and Shopley, 1996)	
Expanded Assurance Responsibility / Service	A focus on assuring information integrity and quality (financial and non-financial) provided internally and externally to decision makers (Rankin, 2000; Elliot, 1997; Elliot and Palla, 1997).	

THE STRATEGIC COLLABORATIVE ACCOUNTING (SCA)

Activity configuration theory (Siggelkow, 2002) emphasizes the importance of value activities (Porter, 1996) in corporate performance. This theory views organizations as a set of tightly coupled value-creating activities that create a configuration capable of adapting to external environmental demands and internal environmental inconsistencies. The moderating impact of managerial attention is within the activity configuration and performance equation. According to the attention-based view theory (Ocasio, 1997), managerial attention is a resource, and managerial actions and decisions are driven to a large extent by issues and answers that require attention. Which or what issues and answers attract managerial attention is determined by specific situations and how the organization's rules, resources, and relationships are distributed into processes and communications. Hence, one of the critical attributes of an effective and futuristic accounting system is the ability to direct timely attention to important activities that impact value creation. Management accounting has evolved beyond financial analysis and decision support and emerged as a "more comprehensive form of organizational resource management in which consideration is given to the tensions between short- and long-term value creation for a multiplicity of organizational stakeholders" (Chua and Baxter, 2000). Consequently, management accounting should draw management attention (Johansson et al., 2010), aid creativity and support competence creation through the facilitation of dialogue (Mouritsen et al., 2001), aid stakeholder value creation (Maskell and Baggaley, 2001; Brewer, 2008), build and evaluate trust (Chua and Baxter, 2000), in an era of dynamic alliances and open innovation (Roberts, 2010) and generate information that can stimulate problem-solving, learning, creative thinking, and dialogue (Al-Okaily et al., 2022; Bjurklo, 2008; Macintosh, 1994; Odonkor et al., 2024). This calls for a different approach to strategic performance evaluation and reporting, including process-oriented non-financial performance measures, stakeholder-based measures of environmental and social performance, inter-organizational performance measures that motivate supply chain partners to work in harmony with one another, and benchmark measures that evaluate performance relative to key competitors or world-class standards" (Brewer, 2008): p30. To meet management information needs and attributes and to support SMA, a new or modified management accounting infrastructure and architecture are required. Accounting infrastructure comprises "the facilities of information production, the framework of information diffusion, and the foundation of information monitoring and contract enforcement" (Lee, 1987): p79. The accounting architecture is the conceptual model that defines and illustrates the accounting system's process, planning, design, structure, and behavior. With collaborations and alliances (business ecosystems) becoming a feature in managing change, more cooperative and group-based management styles are developing and replacing the more competitive and individual-based styles. With the capability to cross legal organizational and national boundaries, new management control and information practices are required to manage the business process effectively (Berry, 1994; Otley, 1994). In this regard, SMA would need to cease being the sole responsibility of the finance department and assume a collaborative and participative role involving major organization players (functional managers, suppliers, and partners) and the professional accounting team (Figure 3). This component of the new or modified accounting infrastructure and architecture is justified by the sophistication and user-friendliness of information technology, the intellectual abilities and expectations of the 'gold-collar workers of 2020s and beyond, and future management information characteristics and needs. Therefore, the SCA could be the future of strategic management accounting, offering an infrastructure and architecture that involves stakeholder participation in the design and implementation of the accounting system, data warehouse assembly, performance evaluation, and format reporting. Such a system should possess the inbuilt capacity to deliver sophisticated and value-adding management information for (a) anticipating, evaluating, and managing change; (b) effective decision-making within departments and business units; (c) effective management of inter-departmental or business unit interdependencies; (d) evaluation and management of trust in partnerships and collaborative ventures; (e) corporate social responsibility measurement; and (f) stimulation of organization-wide healthy and business-driven dialogue. An SCA environment will require intensive cross-functional collaborations in multi-disciplinary teams (Ahmed et al., 2008; Nixon and Burns, 2012) and management accountants who have the skills and attitudes to ensure the customers feel valued and can actively play the role of an

independent strategic business partner (SBP) constantly challenging the status quo, highlighting value drivers, and nurturing future talent (Järvenpää, 2007; Järvenpää, 2009; Lambert and Sponem, 2012; Goretzki et al., 2013). Consequently, the accountant's role changes from assembling and presenting financial data to that of a team leader, provider of business insight, and change agent. In this way, management accounting can meet the threshold raised by Chua and Baxter (2000: p60) in the following statement:

“Management accounting may help to build security and trust between organizational stakeholders in the new millennium, but it will also contribute to complex and difficult to manage transactions, structures, and inter-entity (individual, group, organizational and institutional) relationships.”

There are at least six strategic issues and consequences for maintaining management accounting relevance (Kaplan, 1986; Murphy et al., 1995 now and in the future. Table 3 summarizes the challenges, their implications for management, and the SCA perspectives. The first challenge is redefining the SCA scope (Barbera et al., 1999; Barbera, 1996; Brewer, 2008). The major activities mounting pressure on the scope of management accounting include (a) an organization's need for “strategic risk management that identifies and responds to threats, challenges, and opportunities; and (b) forward-looking financial and performance management involving: (i) technology-enabled data analysis applied to a broad collection of indicators, (ii) increasingly agile forecasting and planning processes, and (iii) fact-based decision-making; and the valuation and strategic deployment (and redeployment) of human resources and other forms of (tangible and intangible) organizational capital as part of plans that exploit opportunities and mitigate threats arising from sudden and sweeping changes in the global economy, the environment and individual markets” (Krell, 2011:p2). The second challenge is the absence of established rules for measuring and reporting intangible resources (Roos, 1997; Roos and Roos, 1997; Rennie, 1999; Chua and Baxter, 2000; Roslender and Fincham, 2001). The innovative economy of today places a premium on additional measures such as “shareholder value, market share, human resource accounting, economic value-added, intellectual capital indices, and knowledge management scorecards” (Voelpel et al., 2006: p46), customer relationships, employee competencies, and trusts in collaborations and other forms of alliances (Lawrence et al., 2005).

**TABLE 3
MANAGEMENT ACCOUNTING CHALLENGES & STRATEGIC COLLABORATIVE ACCOUNTING PERSPECTIVES**

NATURE OF CHALLENGES	IMPLICATIONS FOR MANAGEMENT	STRATEGIC COLLABORATIVE ACCOUNTING PERSPECTIVE
<p>1. The scope of management accounting needs to be redefined to reflect the breadth of skills including leadership, continuous improvement and business partnering skills that found the new generation of accounting profession.</p> <p>2. Intangible resources are fundamentally important to the competitiveness of knowledge-based organizations of today and the future but there are no established rules for measurement and accounting for these resources.</p> <p>3. Threat from information technology as it continues to make significant and sophisticated inroads into the transaction processing and reporting aspects of management accounting.</p> <p>4. The complex stakeholder interests and relationships in the organisations of 2013 and beyond, including dynamic alliances and open innovations, will create a need for various stakeholder reports and trust management systems.</p> <p>5. New performance measurement standards are required for collaborations, outsources, environmental protection and sustainability, etc.</p> <p>6. Systems for tracking and estimating environmental pollution costs and environmental remediation liabilities will come under intense scrutiny in the years</p>	<p>The primary objective of management accounting today is to add stakeholder value. Consequently, accountants are expected to acquire additional skills and flexibility including leadership, strategic management, operational alignment, continuous learning, and business partnering.</p> <p>Measurement or valuation is crucial for managing intangible resources such as human capital (e.g. employee knowledge, skills and experience), intellectual capital (e.g. informal partnerships, formal alliances, social networks), structural capital (e.g. organizational culture and management philosophy, knowledge management and knowledge transfers), and customer capital.</p> <p>The nature of business and work into the 2020s and beyond will require managers and external stakeholders; including customers, employees, collaborative partners, outsources and suppliers, to assume authoring roles in management accounting.</p> <p>Considering the virtual office world, collaborations, partnerships, open innovation forums, outsourcings, and knowledge sharing activities of the 2020s and beyond, trust (predictability, reliability, credibility), may pose a major challenge for organisations.</p> <p>New standards of benchmarking are required for evaluating the competitive environment of today and the future, particularly in the areas of value creation, environmental protection and sustainability.</p> <p>Containment of environmental pollution will pose major challenge for organisations. However, there will be intensified pressure on businesses to track environmental pollution and remediation</p>	<p>Management Accounting is viewed as a comprehensive organization resource management rather than just financial analysis and decision support system. Management accounting becomes a dispersed knowledge within an organisation.</p> <p>Classification of intangible assets, valuation and strategic deployment of tangible and intangible resources.</p> <p>Quantify their contribution to value creation in the organisation and how the assets compare to those of competitors.</p> <p>Knowledge domains are interlinked and supported with advanced communication, collaboration and knowledge sharing and authoring tools.</p> <p>Management accounting becomes a collaborative process.</p> <p>Collaborating accounting ensures stakeholder perspective in management accounting reporting. This involves employment of integrated information assembling and reporting systems.</p> <p>A transition from transaction processing to 'value-adding' forms of advisory role for management accounting.</p> <p>Develop systems for measuring and managing trust.</p> <p>Collaborative approach to performance measurement and reporting including stringent people measurement particularly as functions are outsourced to temporary, mobile employees and contractors and coordinated through virtual offices, advanced ERP and super-fast internet connection systems.</p> <p>Providing information to enable individual and organisational learning, continuous improvement, and compliance responsibilities.</p>

An organization needs to be able to classify these assets, identify how they support the strategic goals, quantify their contribution to the organization's value and consider how the assets compare to those of their competitors" (Tayles et al., 2002: p4).

Thirdly, information processing technology continues to make significant and sophisticated inroads into the transaction processing and reporting aspects of management accounting (Abedin & Hajek, 2023; Tan & Low, 2019; Zhang et al., 2020). The current business environment will progressively feature a world of intensified automated transactions and self-service worldwide (Bernstein, 2010; Perotti et al., 2010; Ramos et al., 2022). Businesses operate with fully integrated Product Lifecycle Management (PLM), Enterprise Resource Planning (ERP), supply chain management, and other structured, transactional applications with tools and processes that facilitate unstructured collaborations (Prashantha B. N. & Venkataramb, 2017). The user-friendliness of information technology, coupled with the growth in end-user literacy, will seriously impact management accounting practice (Burns et al., 2003; Burns & Vaivio, 2001; Cooper, 1996; Odonkor et al., 2024; Pierce, 2001; Tsiligiris & Bowyer, 2021; Warren et al., 2015). Management accounting must build on these developments for legitimacy and sustained relevance into the 2020s and beyond. "Management accounting can no longer be understood as a discrete knowledge mastered by a handful of specialists. Instead, management accounting is becoming a dispersed knowledge within the organization" (Burns and Vaivio, 2001: p396). Business communication occurs within the organization and embraces external stakeholders (Weißenberger and Angelkort, 2011). The nature of business and work into the 2020s will require managers and external stakeholders, including customers, employees, collaborative partners, outsources, and suppliers (Elkington, 1997; Chua and Baxter, 2000; Pierce, 2001), to assume authoring roles in the design of management accounting systems, content, and the production of management accounting reports for relevance and real-time information requirements. There are other technological developments as well. As of 2020, real and virtual information are being recorded and distributed to smartphones, tablets, notebooks, and other high-tech, high-touch mobile technologies worldwide. Consequently, intelligence and expertise are being accessed anytime and anywhere (Bernstein, 2010; Intuit 2020 Report, 2011). A new management accounting architecture and infrastructure that can accommodate and use these developments to its advantage is urgently needed.

The fourth challenge is that the complex stakeholder interests and relationships in the organization will create a need for (a) the design and implementation of various forms of stakeholder reporting, (b) integrated information systems, (c) a transition from transaction processing to 'value-adding' forms of advisory roles for management accounting, and (d) the development of systems for measuring and managing trust in collaborative organizational and inter-organizational relationships (Chua and Baxter, 2000). Considering the current virtual office world, collaborations, partnerships, open innovation forums, outsourcing, and knowledge-sharing activities, trust may pose a major challenge for organizations. Management accounting practice must create room for research and innovation (management accounting techniques and work practices) activities within the strategic partnering role of the management accountant to respond adequately to these challenges.

The fifth challenge for management accounting is performance measurement in the areas of productivity, integration, transparency, flexibility, sustainability, and profitability (Kambel et al., 2020; Wang et al., 2021). There is a need for stringent people-measurement techniques to control and monitor productivity (Coopers, 2007) and performance, particularly as functions are and will continue to be outsourced to independent, temporary, mobile employees and contractors and coordinated through virtual offices, advanced ERP, and super-fast internet connection systems. New benchmarking standards are required for evaluating the competitive business environment, particularly in value creation, environmental protection, and sustainability. Benchmarking focuses primarily on comparing costs and cost structures, productivity, quality, price, customer service, and profitability (Mia & Clarke, 1999) between organizations and their competitors. A value-creation-driven, balanced, and consistent performance measurement system capable of directly translating the organization's strategy, goals, and objectives into measures employed at every level must be developed. Such a system should also measure and report on those elements of the business that drive the success of the organization's strategy, clearly identify the obstacles to its success in execution, and provide methods for measuring and analyzing those issues (Maskell & Baggaley, 2001).

The sixth challenge relates to environmental management accounting (EMA) (Burritt et al., 2002; Jasch, 2006; de Beer and Friend, 2006; Jones, 2010). Environmental concerns remain at the top of the agenda for the United Nations, developed and developing countries, and consumers (Jones, 2010; UNEP, 2011a; UNEP, 2011b). Systems for tracking and estimating environmental pollution costs and environmental remediation liabilities will come under intense scrutiny in the future. Remediation costs typically include off-site waste disposal, clean-up, litigation, and other costs associated with legal compliance (Stanko et al., 2006). Although there are environmental evaluation and accounting guidelines (AICPA, 1996; AICPA, 2004) and techniques such as quantitative lifecycle analyses, lifecycle costing, total cost assessment (Veefkind, 1998; Parker, 2000; Burritt et al., 2002), qualitative matrix evaluation, and streamlined lifecycle analysis methods (Little, 2000; de Beer and Friend, 2006), most companies still experience difficulties with regards to the containment of environmental pollution (Stanko et al., 2006). This will be a significant challenge for management accounting and financial reporting in the 2020s and beyond.

These challenges mitigate the effectiveness of the current SMA practices and can be effectively addressed through a system of strategic collaborative accounting involving collective input from professional accountants, decision makers, decision enablers, and major organization stakeholders in management accounting architectural design, data assembly, analysis, and reporting (Figures 2 and 3). SCA is conceived to be dynamic and motivational infrastructure dependent for success.

THE FEATURES OF STRATEGIC COLLABORATIVE ACCOUNTING (SCA)

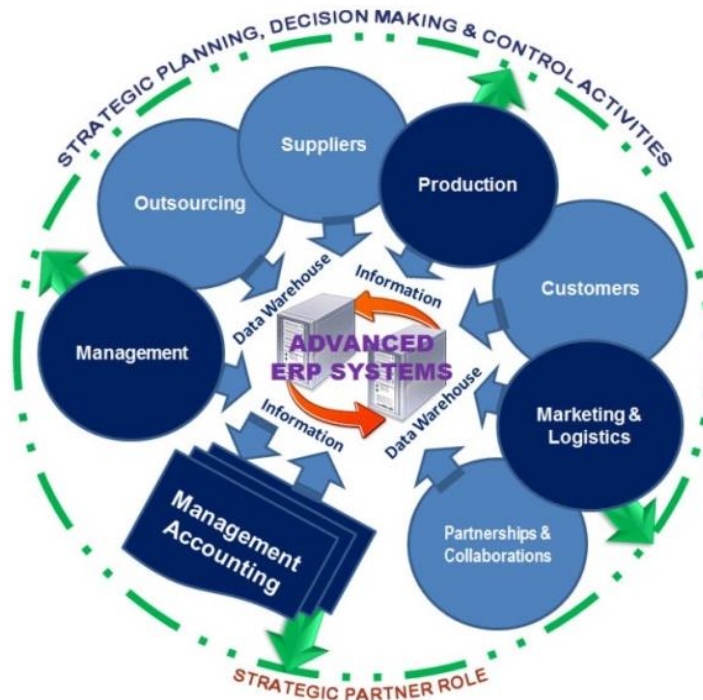
Leading-edge, modern management accounting practices should be characterized by strategic managerial intent, “customer-driven culture and structures, and an array of value-adding techniques made possible by advancements in information processing technology” (Chua & Baxter, 2000; Dai & Vasarhelyi., 2017; Qasim & Kharbat, 2020; Warren et al., 2015). There are at least six critical components to Strategic Collaborative Accounting (Figure 2) – (1) direct data input by various authorized stakeholders processed by advanced integrated systems’ (Brown et al., 2011) data warehouse. This may mean the disappearance of the traditional centralized bookkeeping and accounting role as it takes into account the capabilities, sophistication, and user-friendliness of the new generation of accounting software and the increasing trend towards automated accounting transactions, such as electronic invoicing, payments, and statement of accounts; (2) functional and proximity located accounting teams (Pierce and O’Dea, 2003; Siegel et al., 2003); (3) reviews through multifunctional team dialogue (Figure 2) prior to the publication of reports (collaborative analysis); (4) consultancy (strategic partnering); (5) constant review of management control and information systems based on regular interaction, consultation and dialogue with organization stakeholders; and (6) a systematic approach to performance measurement and asset valuations. There is a recognition that “an effective measurement and management tool in today’s innovative economy should consider the socio-cultural system (Voelpel et al., 2006): p55 in which an organization is embedded. New performance measurement models, such as the Systematic Scorecard (Leibold et al., 2002; Voelpel et al., 2006), have been proposed to extend the four dimensions of the Balanced Scorecard towards an embedded approach to performance measurement. Such models will measure the business ecosystem by covering customer value, systemic change and renewal, networked extended business processes, and stakeholder value (Voelpel et al., 2006).

There is already a considerable degree of SMA happening in organizations, but not always with the leadership or the involvement of the accounting function (Andersen et al., 2000; Burns and Vaivio, 2001; Anderson, 2007). SCA will consolidate this widely recognized process formally, systematically, and in complete control of the accounting function under its collaborative agenda. In the new world of globalization and multinational enterprise, functional specialization, resource dependency, and cross-border collaboration operations are the norm. An efficient flow of information and knowledge is crucial for value-adding management reports and superior performance. Therefore, under SCA, departments from production to marketing, collaborating partners, and other stakeholders will have the capability to record their financial and operational transactions directly into the data warehouse system (Figures 1 and 2). From here, they can

access relevant operational information on a timely basis. This creates an opportunity for financial analysis and dialogue at functional levels between functional team members for improved performance and appreciation of departmental or functional issues on a timely basis. A unique attribute of SCA is its priority for dialogue between functional teams and central accounting professionals. This is achieved through a team dialogue forum where collaborative data analysis and accounting consultations can resolve issues before publishing reports (Figure 2). This contributes to timely, relevant, and accurate reporting. Before publication, operational managers will be aware of up to 90% of what their periodic account report will feature; this is real-time information. “The role of the management accountant becomes very much integrated with the value-creating business functions. The finance people become important members of the value stream teams. The management accountant becomes a change agent within a world-class organization” (Maskell and Baggaley, 2001; Weißenberger and Angelkort, 2011; Goretzki et al., 2013). Legitimizing the new role and reconstructing the management accountants’ identities as the role owners is crucial for successfully institutionalizing their new roles in the organization (Granlund and Lukka, 1998b; Scott, 2008; Goretzki et al., 2013).

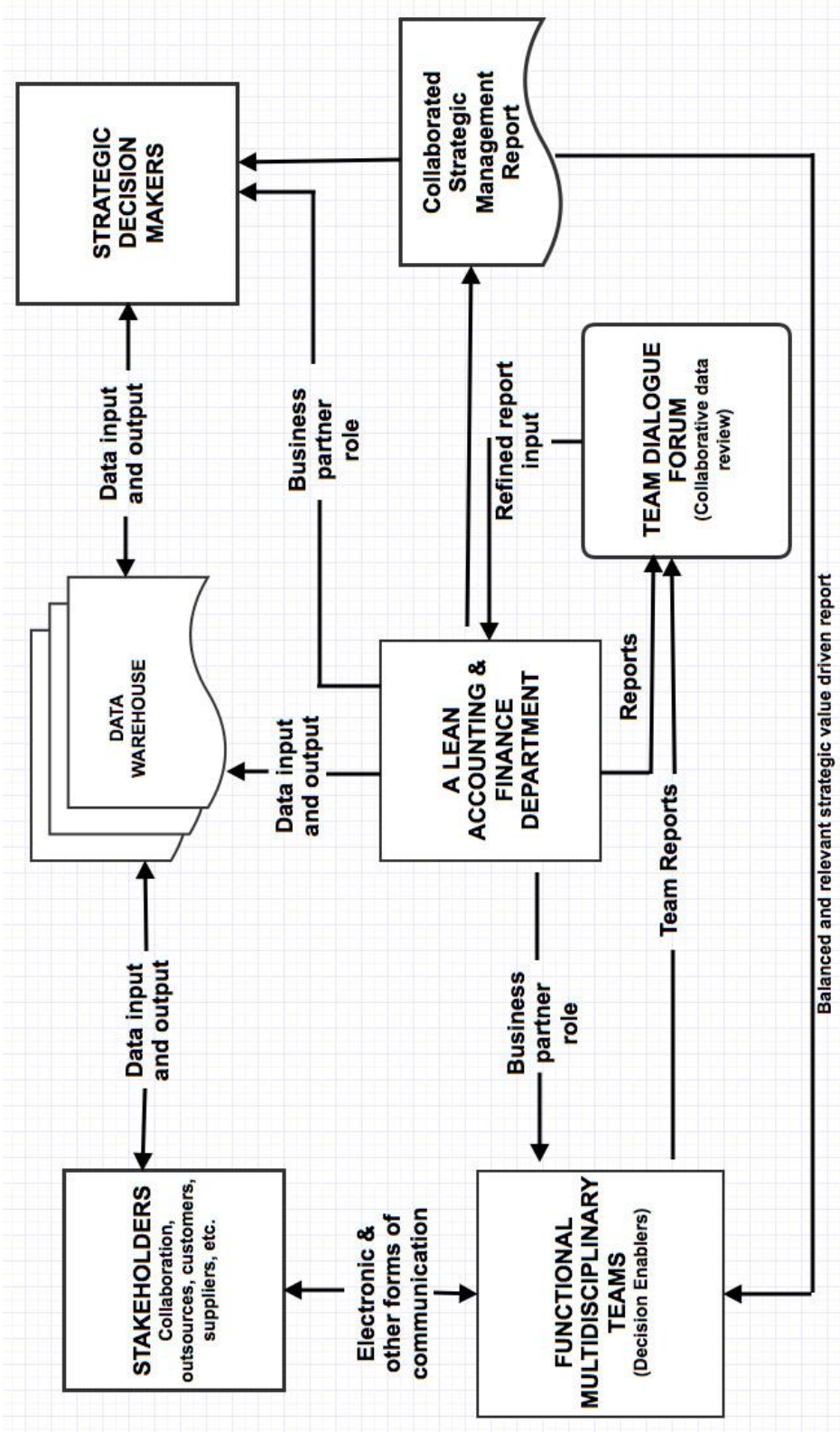
SCA recognizes the changing role of management accounting as a profession with added responsibility for value creation, support for understanding and evaluating customer value, linking performance measures to value stream goals, identifying workflow obstacles, and illustrating continuous improvement progress (Maskell and Baggaley, 2001; Brewer, 2008). It is consistent with the pervasive principle of complementarity theory (Milgrom and Roberts, 1995) and builds on the contingency theory of management accounting (Forsaith et al., 2004; Kennedy and Widener, 2008; Gerdin and Greve, 2008) and the congruence model, which emphasizes the importance of consistency among components of people, work, the formal environment, and the informal environment for organizational fit (Fullerton et al., 2013; Gerdin and Greve, 2013). This has implications for the training and development of management accountants and highlights the importance of legitimacy for the successful institutionalization of their new roles (Suchman, 1995; Goretzki et al., 2013). It also fits in well with the concept of “Reflexive Management Accounting” and adheres to the warnings from the self-referential theory that as accountants become more active participants in operational areas, “they need to respect rather than dominate the technical sub-systems” (Seal, 2001). This theory aims to ensure consistency of financial language and increased output quality from management accounting (Weißenberger and Angelkort, 2011) through integrated management information systems, collaborative business, financial and non-financial analysis processes, and collective stakeholder data input capabilities (Figure 1).

FIGURE 1
STRATEGIC COLLABORATIVE ACCOUNTING INFRASTRUCTURE
(KNOWLEDGE DOMAINS, DATA WAREHOUSING AND PROCESSING)



In addition, collaborative accounting has the potential to overcome the three top constraints to the adoption of new management accounting practices, i.e., lack of workers' time, management buy-in, and adequate technology (Clinton & White, 2012). A shared accounting responsibility provides time for management accountants to research, train, and implement new tools and methods. Through collaborative accounting, business unit orientation, collective decision-making, and pressure for new tools, procedures, and technologies can secure faster management buy-in. When applied to accounting, the social identity theory (Janis, 1982; Tajfels, 1978) suggests that business unit-oriented management accountants have a higher chance of getting management to buy into their views than function-oriented management accountants do (Emsley, 2005). There are other envisaged benefits of SCA, including reduced information entry and processing costs, real-time data entry, real-time data access to managers, strategic value-driven management information achieved through business partnering roles of the accountants, innovations, and team dialogue opportunities; initiation of new performance measurement standards through knowledge shared during dialogue forums and the resulting collective decisions; improved employee understanding of business strategies, processes, technologies, markets, and customers; strong emphasis on operational and managerial decision support; and support for employee empowerment at all levels. Under SCA, simplified strategic reporting, innovations (management accounting techniques and work practices), and the research and development of relevant performance measurement and asset valuation systems become a major preoccupation of the finance department as a strategic partner (Al-Okaily et al., 2022; Davis & McLaughlin, 2009; Järvenpää, 2007; Odonkor et al., 2024; Qasim & Kharbat, 2020; Weißenberger & Angelkort, 2011).

FIGURE 2
STRATEGIC COLLABORATIVE ACCOUNTING (SCA) ARCHITECTURE
(STRATEGIC BUSINESS PARTNERING, TEAM DIALOGUE, AND REPORTING PROCESSES)



CONCLUSION

This paper aims to investigate the strengths of the current management accounting practice, the issues that impact the future relevance of this profession, and an advanced alternative innovative management accounting infrastructure and architecture. In responding to the latter, the paper drew strength from the contingency theory. The basic premise of the contingency theory is that changes in the external environment trigger changes in the strategy and structure of an organization, including the elements of the structure represented by management accounting practices (Abernathy and Lillis, 1995; Anderson and Lanen, 1999; Chenhall, 2003; Luft and Shields, 2003). In times of uncertainty, management accounting and control systems need to be designed from a contingency theory perspective, reflecting the influence of variables such as the competitive environment, technology, service processes, and changes in the structure, performance measures, and mission of the (Otley, 1980; Briers and Hirst, 1990; Fisher, 1995; Chapman, 1997; Chenhall, 2003; Forsaith et al., 2004; Kennedy and Widener, 2008; Gerdin and Greve, 2008). Research suggests an association between competitive intensity and the demand for a refined management accounting system (Cavalluzzo et al., 1998; Hill, 2000; Jermias and Armitage, 2000; Granlund and Malmi, 2002; Chenhall, 2005; Hoque, 2011). Innovative management accounting systems can impact an organization at the developmental, transitional, and transformational levels (Kaplan & Norton, 2001; Lapsley et al., 2003; Mahama, 2006; Odonkor et al., 2024; Qasim & Kharbat, 2020). Hence, the effectiveness of an organization during a highly volatile period is a function of an appropriate match between the organization's technology, environmental volatility, size, and the characteristics of its structure and information systems (Kattan et al., 2007).

This paper argues that SMA is limited in addressing the management information requirements for the future. To sustain the relevance of management accounting in an era of competitive intensity and creative intensification, Strategic Collaborative Accounting (SCA) is recommended as an effective accounting option for organizations. The first casualty of collaborative accounting is a possible reduction in the size of the traditional finance department to a handful of professional accountants whose role will be to coordinate the work of the joint accounting team as it pertains to its strategic business partnerships role (Järvenpää, 2007; Angelkort et al., 2009; Davis and McLaughlin, 2009; Weißenberger and Angelkort, 2011), decision analyses (customer, product/service, and process related), and top management communications. Efficiency, effectiveness, and innovation are some of SCA's strengths. SCA generates a scaled-down version of the traditional finance department by relocating the accounting function and activities closer to the points of operation – from the shop floor to marketing, distribution centers, and virtual offices. The Actor-Network theory explains that interconnections between management accounting actors (business unit orientation) and business unit actors (managers) can fabricate and construct the reality of accounting innovation (Briers & Chua, 2001; Emsley, 2005; Odonkor et al., 2024; Qasim & Kharbat, 2020). This is supported by the findings of Emsley's (2005) study that "a management accountant with a business unit orientation is not only associated with a greater level of innovativeness but is also associated with more radical innovations" (p171). Some advanced manufacturing organizations practice this kind of strategic role change (Goretzki et al., 2013).

SCA, within the limits of information technology, security, and trust systems, will involve liaising and nurturing working relationships with the finance departments of partners, collaborators, and suppliers over a wide range of issues, including electronic cash transfers and account balancing, the linking of invoicing systems or electronic access to accounts; direct access to account information with suppliers; the linking of systems for real-time sharing of information on costs, prices, discounts; and the sharing of business intelligence. This brings to the forefront of SCA design the issue and importance of a system of monitoring, evaluating, and reporting on trust. SCA has profound implications for the business education of professional managers and accounting executives and for the required "gold-collar workers" of the 2020s and beyond (Kerslake, 2002; Tsiligiris & Bowyer, 2021). However, the entire architecture of such a system is outside the scope of this paper. It is a matter for future research in conjunction with IT specialists and professional accounting bodies. This paper encourages discussions regarding the concept of SCA and its design and implementation issues that may shape or confront the architecture of this system. It provides an opportunity

for future research on technological, behavioral, security, skills, implementation, and organizational issues that may confront this concept. SCA has implications for accounting professional bodies and academic institutions regarding the skill training required to equip future management accountants and business managers (gold-collar workers) adequately to become value-adding workers in organizations.

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