ABSTRACT: Professional organizations, accrediting bodies, and accounting educators have defined the competencies that accounting students need for entry-level success in public accounting. However, definitions of the competencies required by all accounting students for long-term career requirements are lacking, as is an understanding of how to develop these competencies within the accounting curriculum. In 2010 the Institute of Management Accountants (IMA) and the Management Accounting Section (MAS) of the American Accounting Association (AAA) formed a Task Force to address these issues and make curriculum recommendations for all accounting majors. This paper is a report of that Task Force. It is responsive to the recent call to “connect the accounting body of knowledge to a map of competencies” and to create “curricular models for the future” (Pathways Commission 2012, 37, 75), and it includes a literature review that spans the scope and focus of accounting education, the value proposition for accounting (i.e., specification as to how accountants today, working in a variety of settings, add organizational value), and the importance of competency integration. This review leads to four recommendations. First, accounting education should be oriented toward long-term career demands. Second, the focus of accounting education should include organizational settings beyond the current focus on public accounting/auditing. Third, educational objectives should reflect how accountants add organizational value. Fourth, these objectives should be developed as integrated competencies. These recommen-
dations lead to the competency-based educational Framework presented in this paper. This Framework is intended to apply to a variety of career paths including, but not limited to, public accounting. The paper concludes with a call to accountants in all areas to participate in further development of the Framework.

**Keywords:** professional competencies; curriculum recommendations; framework for accounting education; accounting curricula; long-term career requirements; Pathways Commission.

**INTRODUCTION**

In 2010 the Institute of Management Accountants (IMA) and the Management Accounting Section (MAS) of the American Accounting Association (AAA) formed a Joint Curriculum Task Force to create a comprehensive educational Framework that defines required competencies of accounting and finance professionals working in a variety of organizational settings. This paper presents the first report of that Task Force and begins with a review of the extant professional and academic literature. This review leads to four recommendations. First, accounting education should focus on curricular requirements for long-term career demands. The historical emphasis (see American Institute of Certified Public Accountants [AICPA] 2003; International Federation of Accountants [IFAC] 2010; Association of Chartered Certified Accountants [ACCA] 2013; CPA Canada 2012a) has been on the competencies accounting graduates need to successfully begin their careers. Second, the focus of accounting education should include organizational settings beyond a focus on public accounting. Currently, over 80 percent of accounting graduates ultimately choose careers outside of public accounting (Siegel, Sorensen, Klammer, and Richtermeyer 2010a). Third, curriculum recommendations should fundamentally derive from an analysis of how accountants add organizational value. While accountants continue to have responsibility for reliable and transparent reporting to external stakeholders, surveys of financial executives (e.g., Siegel and Sorensen 1994; Siegel, Applebaum, Barnett, Sorensen, and Sudman 1996; CFO Research Services 2011; Groysberg, Kelly, and MacDonald 2011; Nordman, Lin, and Fuessler 2011) confirm that accountants are expected to integrate traditional accounting within a broad management context and to collaborate with other managers to improve organizational performance, including strategy implementation. Fourth, the knowledge, skills, and abilities of an accounting education should emerge and be developed within the curriculum as integrated competencies, as this is how those competencies will be deployed within the organization.

These recommendations lead the Task Force to propose a conceptual Framework that identifies the competencies necessary to create value in the long-run careers for all accountants. This Framework is grounded in an understanding of the scope of the current and probable future practice of accounting. It is also consistent with selected other frameworks for accounting education (as discussed later).

The remainder of the paper is organized as follows. First, a review of the literature explores the need for change in accounting education. This review includes an overview of how accountants add value to organizations in a range of settings and explores the role of the accountant in a strategic context. Second, based on the literature review, the Task Force presents an educational Framework that defines the set of long-run professional competencies (including initial entry-level

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1 Competencies are the set of knowledge, skills, and abilities required for professional success in accounting. Knowledge is the intellectual content to be learned, skills are the capacity to apply the knowledge to achieve specific goals and objectives, and abilities are the application of knowledge and skills in a professional work environment.
competencies) for all accountants, regardless of career track or intentions. Third, the paper contains a comparison of the Framework with other extant accounting education frameworks. Fourth, the manuscript starts a discussion of some benefits and costs of the proposed Framework, as well as suggestions for future work. The paper concludes with a brief summary.

LITERATURE REVIEW

The Need to Broaden the Scope of Accounting Education

In this section, the Task Force reviews the calls for change in accounting education and concludes that they support a broadening of the scope of the curriculum in two major respects. First, there is a need to attend to long-term career demands. Second, there is a need to prepare accounting graduates for careers across a wide spectrum of organizational settings.

Modern accounting education dates from 1959 when the Ford Foundation and Carnegie Commission issued reports criticizing business education in the U.S. (Gordon and Howell 1959; Pierson 1959). Trueblood (1963, 90) elaborated in the context of accounting, arguing against "excessive educational differentiation for industrial and public accountants." This period ushered in additional calls for change in accounting education, such as those issued by the AAA (AAA 1968) and the AICPA (Roy and McNeill 1967; AICPA 1969). During this period, accounting education did experience changes, but not always consistent with the recommendations of these reports. In general, universities did not heed Trueblood’s (1963) recommendation to provide comprehensive coverage of the basic principles of the discipline of accounting. Instead, they focused on existing financial accounting rules and regulations and auditing procedures and standards. This response left accounting graduates with the tools needed for immediate productivity, but it did not provide them with a knowledge base that would allow adaptation to changing environments during the course of a career. The focus of accounting programs remained that of preparing graduates for careers in public accounting (Wheeler 1991).

By the mid-1980s, the profession and the academy recognized a disconnection between accounting education and the demands of the profession. Most influential in the U.S. was the AAA Committee on the Future Structure, Content, and Scope of Accounting Education (the Bedford Committee), which identified a need for major change in accounting professional education (Bedford et al. 1986). In the two years following the Bedford Committee report, the AAA appointed four follow-up committees (Schultz 1989), and in 1989 the Big 8 accounting firms issued a white paper that recommended a focus on the development of analytical and conceptual thinking, not on passing entry-level professional exams (AAA 1989). To produce creative, adaptive life-long learners, accounting educators were encouraged to look beyond entry-level competencies to developing a base of competencies that would last throughout an accountant’s career.

In 1989, the Accounting Education Change Commission (AECC) was formed to help implement the Bedford Committee and white paper recommendations. The AECC had mixed success in fostering curricular change (Sundem 1999; Albrecht and Sack 2000).2 Accounting programs in the U.S. continued to focus on financial reporting rules and regulations—knowledge required by entry-level public accountants, but not necessarily the basis for long-term career demands. More than a decade later, the Pathways Commission (2012) echoed many of the same points—in particular, the need to focus on long-term career skills, not just the entry-level material, and the need to educate for a broad range of careers and environments, not just public accounting.

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2 Sundem (1999, 29) notes that in response to the Bedford Committee and white paper recommendations, schools focused on delivery changes rather than on needed changes to the content of the accounting curriculum.
In summary, this literature review highlights two problems that persist despite prior efforts to effect change. First, most accounting curricula continue to focus on preparation for entry-level requirements in the field of accounting, despite repeated calls for a longer-term perspective. Second, accounting education remains largely focused on preparing students for careers in public accounting/auditing, despite several attempts to align academic curricula with the demands and responsibilities of accounting practice (Siegel and Sorensen 1994, 1999, 2002; Siegel et al. 1996; Siegel and Kulesza 1996; Siegel, Kulesza, and Sorensen 1997; Siegel, Sorensen, and Richtermeyer 2003a, 2003b; Siegel et al. 2010a; Siegel, Sorensen, Klammer, and Richtermeyer 2010b). It appears that most of the changes in accounting education have not led to the necessary structural changes needed to position accountants for long-term career demands across a variety of organizational settings.

The Need for a Strategic Perspective on the Value Proposition of Accounting

As the Pathways Commission (2012, 10) noted, the organizational field of accounting must develop a comprehensive understanding of its role in society. This effort requires a strategic view of accounting’s value proposition—how accountants add value to organizations—and a curriculum based on this value proposition. The Task Force proposes that accounting’s value proposition be defined in terms of strategy formulation and analysis, planning, and execution. Effective managers need to understand how to help formulate, analyze, and execute strategies that enable their organizations to succeed (Brown 1986; Malina and Selto 2001; Sopariwala and Subramanian 2004; Skaerbaek and Tryggestad 2010). Groysberg et al. (2011) found that top financial executives need a broad set of technical skills and understanding of business fundamentals, noting an expansion of duties from the traditional ones of budgeting and historical performance evaluation into the area of the real-time analytics that is essential for a quick, yet strategic response to changes in the environment. CFO Research Services (2011) studied senior accounting and finance executives and identified competency gaps in areas including business strategy, business intelligence, analytics, and operational experience. This research suggests that accounting and finance professionals need the skills for providing enhanced reporting of risk exposures, for reporting information to inform decisions on deploying capital to grow the business profitably, for supporting the long-term value creation for their enterprise, and for communicating the ways in which accounting can promote the success of enterprise leaders.

While it is necessary to develop entry-level competencies and to prepare graduates for professional examinations, focusing solely on these goals deprives students of the opportunity to establish a foundation of competencies that are necessary for long-term career demands. The scattered availability of these competencies through some graduate programs does not obviate the need to address them consistently, and to also do so at the undergraduate level.

A convenient summary phrase for how professionals can add organizational value is Enterprise Performance Management (EPM). EPM involves the integrated use of methods to enhance organizational value by coordinating strategy formulation and analysis, planning, and execution. EPM includes accounting and management practices (e.g., strategy maps, budgeting, forecasting, and incremental cash-flow analysis) and linkages among systems (e.g., strategic planning, customer relationship management, supply chain management, enterprise risk management [ERM], human capital management, and lean management). Cokins (2009) suggests that EPM embraces the methods, metrics, processes, and software tools that can be used to manage the performance of an organization as a whole. As such, EPM is plausibly relevant for a wide variety of organizations or enterprise settings (profit seeking, not-for-profit, government, etc.) and, therefore, an appropriate mechanism for conveying the Task Force members’ view of the “value proposition” of accounting.
The emerging fields of business analytics and business intelligence provide opportunities for accountants to become involved in a wider variety of business decisions, including those directly related to strategy implementation. In this way, accounting and finance professionals can contribute to significant enterprise value creation (IBM 2010, 5). Davenport (2006) also notes that the contemporary business environment requires a much-expanded skill set for accountants, one including analytical, business, and relationship skills.

This literature review establishes the potential for accounting and finance professionals to add value across diverse organizations. This element is an important driver of the curriculum recommendations embedded in the educational Framework presented in this paper.

The Need for Competency Integration

The preceding section highlights the role of the accounting and finance function in successful implementation of organizational strategy. In this section, the Task Force explores the issue of how accountants deliver on this value proposition. The key question is what organizations expect accountants to know and be able to do as they move into a variety of organizations and become accounting and finance professionals performing a wide range of functions.

The integrative role of accounting is important to creating value in an organization (Pathways Commission 2012, 21). Nordman et al. (2011, 3) report a range of functions, including the integration of technology with processes and data, that allow more effective communication between functional units in such a way as to augment the overall value of the enterprise. Accountants who are responsible for financial reporting bear the traditional burden of analyzing the economic substance of transactions to comply with increasingly complex requirements. In addition, their responsibilities are expanding to include reporting on risks, pro forma performance measures, and sustainability. These new areas of responsibility both require a broader definition of the competency of reporting and provide opportunities for accountants to advise top management on matters related to risk, structuring of transactions, and expanded performance measurement. Similarly, tax accountants spend less time preparing tax returns and more time on developing tax strategies to improve the organization’s financial performance. In this sense, the components of the value proposition are integrative and strategic. This demand for integration is international and not limited to the U.S. environment (IFAC 1998, 2000, 2002, 2004; CPA Canada 2012a, 2012b, 2012c; CIMA 2011a, 2011b; ICAEW 2012). The demands of long-term careers call out for integrated curricular change, which leads to the need for a new educational framework.

A PROPOSED EDUCATIONAL FRAMEWORK

The Pathways Commission (2012, 24) identified a need for a new model of education that is better aligned with the contemporary environment and evolving demands on accounting professionals. To address this, we provide the general Framework presented in Figure 1. This Framework includes three interconnected components: (1) Foundational Competencies, (2) Broad Management Competencies, and (3) Accounting Competencies. It assumes these competencies are developed and integrated over time via a combination of education (including continuing education), training, and work experience.

The focus of the Framework is on the development of competencies, not courses. It is comprehensive, encompassing competencies from all accounting disciplines, including financial and management accounting, taxation, information systems, and assurance, and focuses on the educational needs of accounting students for their long-term careers. The Framework incorporates the competencies identified by the Pathways Commission (2012) including technical knowledge, professional skills and professional integrity, and responsibility and commitment. In the following sections, the Task Force discusses each of the components of the Framework individually.
Foundational Competencies

Foundational competencies are those needed by all business school graduates. They support other broad management and specialized accounting competencies and prepare students for life-long careers. The Framework includes five foundational competencies: communication, quantitative methods, analytical thinking and problem solving, human relations, and technology.

Communication

Speaking and presenting effectively involves dialogue skills and requires the ability to recognize and adapt to a specific audience, as well as the use of nonverbal skills such as posture and mannerisms. Also important are effective listening, interviewing, use of electronic media software, professional writing, and other qualitative tools in communication such as case studies, electronic videos, audio, social media, and other emerging tools. Strong communication competencies are especially critical in cross-cultural and global settings.

5 Ingram and Frazier (1980); Siegel and Sorensen (1994, 1999); Siegel et al. (1996); Albrecht and Sack (2000); Bots, Groenland, and Swagerman (2009); AACSB (2013a, 2013b); and CPA Canada (2012b).
6 NAA (1988); Chow, Shields, and Wong-Boren (1988); Siegel and Sorensen (1994, 1999); Siegel et al. (1996); Albrecht and Sack (2000); Garg, Ghosh, Hudick, and Nowacki (2003); Cooper (2006); and AACSB (2013a, 2013b).
7 Siegel and Sorensen (1994, 1999); Siegel et al. (1996); Albrecht and Sack (2000); Wolcott and Lynch (2002); Wolcott, Baril, Cunningham, Fordham, and St. Pierre (2002); AACSB (2013a, 2013b); and CPA Canada (2012b).
8 Siegel and Sorensen (1994, 1999); Siegel et al. (1996); Albrecht and Sack (2000); and AACSB (2013a, 2013b).
9 NAA (1988); Siegel and Sorensen (1994, 1999); Siegel et al. (1996); Albrecht and Sack (2000); Cooper (2006); and AACSB (2013a, 2013b).
Quantitative Methods

Quantitative method competencies include the ability to comprehend and use the time value of money, mathematical methods including calculus, statistics, programming, constrained optimization analysis, decision modeling, and simulation and risk-analysis techniques.

Analytical Thinking and Problem Solving

Analytical thinking and problem solving are competencies that enable accountants to conduct research, identify alternatives, objectively and logically evaluate data-driven and qualitative evidence related to specified options, and apply professional judgment. This competency requires accountants to be able to define a broad range of alternatives including: stakeholder effects; to provide objective evaluation of the strengths and weaknesses of evidence and the alternatives; to incorporate risk and uncertainty; to evaluate decisions within the context of organizational strategies; to remain open to constructive criticisms and minority viewpoints; and to do all of these while incorporating professional values, ethics, and attitudes, and other accounting and management competencies.

Human Relations

Human relations competencies are necessary for team-based interactions within the context of gender, ethnic, and multicultural diversity. These competencies include developing and practicing relationship-building skills, fostering and using team-based management skills, learning and applying methods of negotiation, and developing and using ethical approaches to conflict resolution. These competencies frequently suffer from underinvestment in education and training. According to an Accountemps (2013) survey of 2,100 U.S. CFOs, the top reason for an employee failing to advance in the respondent’s organization is “poor interpersonal skills.” While 30 percent of respondents identified the critical nature of this skills deficiency, only 19 percent of these executive respondents said their organization is likely to invest in soft skills training for accounting and finance staff in the next two years.

Technology

Technology competencies include the use of software, including proficiency in the development and use of spreadsheet models and the use of technology to enhance communication. Also vital is knowledge of the purpose and design of information systems (IS), system architecture, processing modes, network types, hardware components (including mobile devices), operating and application software (including cloud computing), system security, and IS continuity.

The foundational competencies outlined above provide the base upon which other business-related and accounting competencies are grounded. These competencies align with the “professional skills” identified by the Pathways Commission (2012, 132). Mastery of these competencies is necessary for all accountants if they are to add value to their future organizations.

Broad Management Competencies

An education for business professionals, including accounting professionals, must help students develop broad integrated management competencies. Possessing these competencies will help accountants work jointly and effectively with all members of the organization to create value. These competencies are essential, in fact, for those who aspire to become successful managers and executives. The Framework presented in Figure 1 identifies five categories of broad management
competencies: leadership, ethics and social responsibility, process management and improvement, governance, risk management, and compliance (GRC), and additional core management competencies.

Leadership

Leadership involves developing and implementing a vision, values, and a mission for an organization. Leadership creates a sustainable organization by focusing on performance improvement, creating positive customer experiences, investing in workforce learning and development, building leadership in others, and succession planning. Leaders must maintain an awareness of responsibility to the community and the larger society.

Ethics and Social Responsibility

Ethical and social responsibilities extend beyond legal and regulatory requirements into voluntary standards and activities for environmental stewardship, labor practices and conditions, human rights, health and safety, community partnerships, and global citizenship, for example. Relevant topics include the U.S. Foreign Corrupt Practices Act (FCPA); organizational responsibilities for ethical conduct including the organizational Code of Conduct; the difference between legal and ethical behavior; the relationship between leadership ability, organizational culture, and ethical conduct to the organization’s internal control system (“tone at the top”); whistle blowing; and regulatory requirements involving the ethics of senior officers.

Process Management and Improvement

Accounting and finance professionals must be able to use the organization’s value chain effectively and efficiently to satisfy customer and other stakeholder requirements. These competencies include management of organization value chains; the design, management, and improvement of key processes; the development of customer relationships and customer relationship management; and competence with process frameworks and certifications, such as Six Sigma, Cost-of-Quality, ISO 9000, the Baldrige Performance Excellence Program, etc. This competency is not unique to management accountants. External auditors must understand and document how audit clients manage business processes. Internal audit departments increasingly add value by focusing on business process improvement. Financial and tax accountants evaluate business transactions within the context of the economic environment and entity operations to comply with financial reporting standards and tax regulations. In addition, public accounting firms have been called on to improve their internal business processes to achieve higher audit quality.

Governance, Risk Management, and Compliance (GRC)

An important broad management competency includes corporate governance, enterprise risk management (ERM), and compliance with applicable laws, regulations, contracts, strategies, and organizational policies. The Framework suggests mutual dependencies with these items and other
core management responsibilities and practices. Risks to be managed include legal and regulatory compliance risks, information security risks, reputational risk, technological risks, commercial/financial risks, etc. Compliance and internal control may be viewed as part of an organization’s ERM, which in turn is a key element of an organization’s overall governance process.14

**Additional Core Management Competencies**

Additional core management competencies include finance, investments, human resource management, operations management, marketing, economics, business law, mergers and acquisitions, and globalization. A global focus is especially important. The development of intellectual, social, and psychological capabilities that allow a person to function anywhere in the world is viewed as essential within the professional world of accounting and finance. Accounting and finance professionals must be able to communicate and build relationships with people from different backgrounds based on the history, culture, and language of these individuals. The import of this element is highlighted by the student leadership initiatives of each of the Big 4 accounting firms and the Pathways Commission (2012, 37, 73–75).

In summary, an education for business, including accounting, requires integrated broad management competencies to assure effective organizational performance and productive careers. The importance of these broad integrated management competencies is validated by their inclusion as required curricula for accreditation by AASCB International for both business and accounting programs (AACSB 2013a, 2013b).

**Accounting Competencies**

Accounting competencies enable accountants to integrate management and analytical methods, supported by technology, to assist an enterprise to formulate and execute its strategy successfully. The Framework groups accounting competencies into six categories: external reporting and analysis; planning, analysis and control;15 taxation compliance and planning;16 information systems;17 assurance and internal control;18 and professional values, ethics, and attitudes.19

**External Reporting and Analysis**

External reporting (including related internal reports) is focused on conveying financial and nonfinancial information primarily to various external stakeholders for private, governmental, and

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14 Principles-based guidance and a framework for evaluating and improving governance in organizations, as well as the role of the accountant in this process, is provided in IFAC (2009). Approaches to defining and implementing ERM systems, with particular emphasis on the role of the accountant, are provided in IMA (2007, 2011b) and COSO (2004). Other risk-management frameworks or regulations appear in the International Organization for Standardization (ISO 2011b) and in the Basel Committee on Banking Supervision Basel III Accord (BCBS 2011). A review of these frameworks suggests a common element: all are designed to help ensure organizational success by better managing the tension between an organization’s value-creating and value-protecting activities.

15 Chow et al. (1988); Garg et al. (2003); Davila and Wouters (2004); Cooper (2006); Ahadiat (2008); DeGeuser, Mooraj, and Oyon (2009); AICPA (1988, 2011); AGA (2013); USAJobs (2013); Ross and Carberry (2010); and Epstein and McFarlan (2011).


17 Neely and Cook (2011); Sutton (2000); Holsapple and Sena (2003); Grabski, Leech, and Schmidt (2011); Basole, Seuss, and Rouse (2013); Calderon, Cheh, and Kim (2003); Debreceny and Farewell (2010); Debreceny (2013); Wilkin and Chenhall (2010); and Scapens and Jazayeri (2003).

18 Albrecht and Sack (2000); COSO (2013); and Kohn and Sutton (2010).

not-for-profit entities in accordance with reporting standards. Accountants must be able to prepare, analyze, and enhance the usefulness of external reports to users. Analysis includes the use of judgment when applying accounting principles, assessment of both earnings quality and the valuation methods used in the statements, risk analysis, financial ratio analysis, and forecasts of profitability and future cash flows based on the information reported in external financial statements. Analysis increasingly employs data from nonfinancial sources, such as the previously referenced environmental and social responsibility reports.

**Planning, Analysis, and Control**

Accountants must be able to aid the identification, evaluation, selection, and implementation of choices that best support the organization’s strategic and operational goals for private, governmental, and not-for-profit entities alike. Within this competency, accountants participate with other functional area managers in management teams to inform the decision-making process that advances the organization’s strategy. Planning is the process for defining the organization’s strategic and operational goals and implementing decisions that support these goals. This includes strategic planning, risk management, formulation of capital projects, and operational planning such as budgeting and forecasting. Accountants support top-level planning through “What If” analysis of competition, innovation, and environmental, political, and regulatory factors for products or services, or of the business itself, and by designing cost systems for implementing strategy. Planning also extends to accounting activities such as audit assignments and information systems projects. Analysis is necessary for virtually all decisions involving resource allocation. These include, but are not limited to, cash management, pricing, capital investment, product and customer profitability, performance measurement, risk and uncertainty (e.g., sensitivity and real-options analyses), opportunity costs, valuation (namely, cost or fair value), tax effects, financing costs, and others. Activities included as part of this competency are the analysis of the cost, profitability, and quality of audit engagements and of information systems projects.

Accountants uniquely support control through establishing, implementing, and improving comprehensive management control systems. This involves establishing systems for aligning, monitoring, and providing feedback on management-level goals, measures, and incentives with strategic priorities, including the Balanced Scorecard, Six Sigma, ISO 9000, and similar systems. These controls are essential for achieving strategic goals, and for improving product, service, and process efficiency and effectiveness. These contributions are as relevant to public accounting practices as they are to other types of business organizations, and are not limited to management accounting careers; they are also vitally important for non-profit and governmental organizations.

**Taxation Compliance and Planning**

All accountants must understand the basics of taxation to be able to assess tax impacts of decisions and to know to seek expert advice where appropriate. Accountants are also intimately involved in calculating tax liabilities, as well as planning and advising on taxation issues including assessment of the likelihood that the accounting for a transaction will be challenged by taxing authorities and the likelihood of such accounting prevailing. Broad competencies in corporate and personal tax are therefore essential for all accountants. Beyond this, tax specialists must be able to

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20 These standards are promulgated by a variety of entities and include IFRS, U.S. GAAP, SEC regulations, GASB standards, IRS code, and GRI guidelines, among others.

21 Standards for such reports include *Sustainability Reporting Guidelines* (GRI 2011), IMA’s (2008) *Sustainability Reporting Framework*, and standards promulgated by the Sustainability Accounting Standards Board (SASB 2013).
offer advice on tax planning and be able to compute tax liabilities in routine and nonroutine situations in light of changing tax laws and a continuous stream of new court decisions. In addition to tax planning, tax specialists must be able to analyze, assess, and advise on tax liabilities and assets (including the financial statement effects of tax expense and deferred tax assets and liabilities), tax consequences for complex corporate or partnership transactions, the assessment and appeals processes, and international tax planning.

Information Systems

Internal and external reporting, including financial statements, management control, decision support, and analytics, depend on the successful design and deployment of an information system (IS). IS competencies involve gathering, validating, and analyzing data to enable cross-functional and global cooperation and communication. Included here are data, transaction flow, data organization and access, and database management. Strategic and operating decisions require integrated information systems such as specialized software/reporting systems with decision support, enterprise resource planning (ERP) systems, business intelligence, enterprise analytics information search and retrieval, data mining, and familiarity with languages such as XBRL. Accountants must also be able to design and evaluate IS controls and manage IS risks and compliance, including overseeing fraud prevention, privacy safeguards, and data integrity. Extensive technological knowledge and skills are required to assess system needs and investment, procurement, and implementation, including oversight of vendors and service providers. Maintaining close awareness of emerging technological trends (for example, the evolution of descriptive and predictive analytics to what Davenport [2013] refers to as prescriptive analytics) and risks is essential. Information systems competence is of primary importance for long-term career success, adding value to an organization and supporting strategic and operating decision making, regardless of the area of accounting specialization.

Assurance and Internal Control

Accounting and financial professionals in all types of organizations must understand the role of assurance and apply the principles of internal control. Certified Public Accountants (CPAs) in professional practice require extensive knowledge, expertise, and experience in assurance for private, governmental, and not-for-profit entities. This expertise includes a range of accounting and review services, such as fraud detection or forensic accounting, in addition to auditing. Accounting and finance professionals outside of professional practice manage assurance services for their organizations either through internal audit functions or with the organization’s external auditor, or both. Internal control systems are an integral component of an organization’s ERM system, discussed earlier under the “Broad Management Competencies” section. Internal controls provide information about the effectiveness and efficiency of operations, the reliability of financial reporting, and compliance with laws and regulations. The CPA in public practice requires extensive knowledge of internal controls to effectively complete an audit and to comply with regulatory requirements. The accounting professional outside of public practice also requires extensive knowledge of internal control to ensure that the functions of the internal control system are not compromised. Knowledge of internal controls is a key competency for all accounting graduates, whether they enter the public accounting profession or join other organizations.

Professional Values, Ethics, and Attitudes

Professional values, ethics, and attitudes refer to the professional behavior and characteristics that identify accountants as members of a profession. They include commitments to technical
competence, ethical behavior, professional manner, pursuit of excellence, societal responsibility, professional skepticism, objectivity, professional judgment, creativity, and innovation. Several bodies, including the IMA, the AICPA, the IIA, and IFAC, provide ethical guidance for accounting practitioners. Professional attitudes also include an understanding of the demands involved with working with people from different cultures and backgrounds, as discussed above under the “Broad Management Competencies” section. Effective leaders define, promote, and ensure ethical behavior to develop an organizational culture of integrity—or tone at the top—as well as monitoring and responding to breaches of ethical behavior and the profession’s ethical codes.

**Competency Integration**

The literature review shows that accountants need to be able to integrate their competencies. This integration can take place within a single competency, across multiple competencies within the same domain, and across domains. At all levels of integration, the foundational competencies permeate all other competencies (IMA-MAS Curriculum Task Force 2013a). Mastery of accounting competencies begins with the competency itself and then extends to integrations with other competencies. For example, the competency focused on planning, analysis, and control should first ensure internal integration—the ability to apply all of the concepts and techniques within the competency as appropriate. Then it should address cross-functional integration with other accounting, broad management, and foundational competencies. Cross-functional competency gains are bi-directional, as accountants better understand context for applying the information they create and managers in other functional areas learn to integrate financial performance with other metrics such as time, quality, service levels, and capacity. Cross-functional competency promotes discovery of the interrelationships among all of the accounting and managerial disciplines and improves understanding of the contribution that accounting can make to the success of an enterprise.

The need for competency integration increases with the increasing complexity of the field of accounting. For example, the demands of integrated reporting (Busco, Frigo, Quattrone, and Riccaboni 2013; IIRC 2013) require presenting accounting information about an organization’s strategy, governance, performance, and prospects in a way that reflects its commercial, social, and environmental context and that delivers sustainable value. Technological competencies with tools such as XBRL are necessary to fulfill the need for this type of reporting. As portrayed in Figure 1, the value proposition of accountants arises from the mastery and use of foundational, broad management, and accounting competencies to obtain and analyze data, to integrate relevant knowledge, to participate in decision making that supports the organization’s goals, and to monitor results for a diverse set of stakeholders—in other words, it arises from the accountant’s ability to integrate across competencies. Competency integration can occur throughout the curriculum, as well as in a capstone experience or in clinical learning experiences such as internships (Pathways Commission 2012, 72).

Table 1 provides a representation of the process of career-stage competency development for the integration of formal coursework and professional development, the integration across accounting competencies, the integration of accounting and broad management competencies, and the integration of foundational competencies into the work that accountants perform. Competency levels are differentiated by the extent and depth of integration. Integration is a continual process requiring initial job preparation and immersion in a career, plus the additional life-long learning (IMA-MAS Curriculum Task Force 2013b).

The cognitive development literature (Hoare 2006) suggests that thought processes develop in hierarchical levels or stages, with each level laying the foundation for the next-higher level. Greater competency requires students to achieve higher levels of cognitive development for thinking about
and using acquired knowledge (Wolcott 2011). This development moves from an accountant’s formal education to short- and long-term work experience. As an example of this process, consider the topic of the management and control of quality. The initial exposure focuses on skill mastery with minimal integration, with a student taught to calculate and explain, for example, an efficiency variance. The next step toward integration is taken by joining this technical skill with the planning, analysis, and control competency of accounting through a discussion of nonfinancial performance metrics related to quality. A subsequent developing of integration may incorporate the process management and improvement competency through a discussion of Six Sigma, Cost-of-Quality (COQ) reporting, the use of run charts, and lean accounting. A further step in the integration process is taken when the professional applies these previously mastered competencies to novel situations, such as sustainability accounting.

TABLE 1
Continuum of Entry-Level and Long-Term Competency Development and Integration

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<tr>
<th>Competency Integration</th>
<th>Entry-Level Preparation</th>
<th>Further Development of Life-Long Competencies</th>
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<tbody>
<tr>
<td></td>
<td>Initial Job</td>
<td>Early Career and/or Additional Education</td>
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<tr>
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<td>Undergraduate Education</td>
<td></td>
</tr>
<tr>
<td>Integration of Formal Coursework and Professional Development</td>
<td>Grounding in accounting and business knowledge and foundational skills</td>
<td>Deeper expertise in area of chosen career path; increasing integration across subject matters and focus on organizational value</td>
</tr>
<tr>
<td>Integration across Accounting Competencies</td>
<td>Limited integration by being able to identify related accounting competencies when analyzing a specific issue of strategy implementation from a specialized perspective</td>
<td>Considerable integration by being able to analyze a specific issue of strategy implementation from several specialized perspectives (accounting competencies) and to recognize many relationships among these competencies</td>
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<tr>
<td>Integration of Accounting and Broad Management Competencies</td>
<td>Limited integration across accounting and broad business knowledge</td>
<td>Considerable integration of accounting and broad business knowledge</td>
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<tr>
<td>Integration of Foundational Competencies</td>
<td>Develop foundational competencies for a business major</td>
<td>Use foundational competencies to enhance cross-functional work</td>
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</table>
Consider also the integration of foundational competencies. Students typically receive an introduction to competencies, such as analytical thinking and problem solving, as part of their basic undergraduate education. They may then—via additional education or experience early in their careers—learn how to integrate those foundational competencies with other accounting and broad management competencies. An example would be incorporation of statistical methods in the analytical review process. Students may continue to learn how to further integrate foundational competencies cross functionally to apply that knowledge effectively in tasks requiring them to address realistic, complex business problems in areas such as enterprise risk, taxes, strategic fit, financing alternatives, and social and environmental consequences.

COMPARISON WITH RELATED ACCOUNTING COMPETENCY FRAMEWORKS

This section discusses the incremental contribution of the proposed Framework with respect to the existing frameworks in accounting education (Pathways Commission 2012; CPA Canada 2012b; ACCA 2013; ICAEW 2012). The discussion focuses on the major points of difference and commonality.

Pathways Commission Compilation

The Pathways Commission (2012, 132) compiled the competencies developed by numerous U.S. organizations, including NASBA, AICPA, IMA, IIA, CGFM, Robert Half, Grant Thornton, and one international body, IFAC. The compilation summarizes recommended competencies into three categories: technical knowledge; professional skills; and professional integrity, responsibility, and commitment. The Framework encompasses virtually all of the competencies compiled by the Pathways Commission. However, the Pathways Commission simply compiled existing frameworks; the Framework, while based on existing frameworks, is expanded to include competencies that are described in the literature but not currently addressed in other accounting education frameworks. Further, the Pathways Commission compilation, as a collation, cannot be interpreted as an educational framework, such as the Framework presented in Figure 1. The Pathways Commission compilation does, however, provide more detail of individual competencies than the descriptions presented in this paper. As such, the Pathways Commission report remains useful to accounting educators as they implement the proposed Framework.

CPA Canada

In 2013, the Chartered Accountants (CAs), Certified Management Accountants (CMAs), and Certified General Accountants (CGAs) in most Canadian provinces and territories joined together to create CPA Canada as the national organization for a new Chartered Professional Accountant (CPA) designation (CPA Canada 2012a). The competencies of the newly qualified Canadian CPA—specified in the CPA Map and the CPA Competency Map Knowledge Supplement (CPA

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22 Not covered in the comparison are any more focused or limited educational frameworks, such as the competencies advanced by two continental European associations, Internationaler Controller Verein (ICV 2011) and Dutch Association of Registered Controllers (also referred to as Vereniging voor Registercontrollers [VRC 2010]), or CIMA (Chartered Institute of Management Accountants). The first two associations offer descriptions of accounting that are consistent with the Task Force members’ Framework, but they provide no detailed competency descriptions, as these organizations do not conduct their own professional examinations. Compared to the Task Force members’ Framework, CIMA’s descriptions are more detailed regarding broad management competencies and particular management accounting competencies. However, CIMA does not focus on all accounting competencies and not on foundational competencies. A new credential, Chartered Global Management Accountant (CGMA), offered through a joint venture of CIMA and the AICPA, is more closely related to the Task Force Framework, especially in terms of the use of EPM as a foundational principle.
Canada 2012b, 2012c)—call for (1) technical competencies in financial reporting, strategy and governance, management accounting, audit and assurance, finance, and taxation; and (2) enabling competencies, including professional and ethical behavior, problem solving and decision making, communication, self-management, and teamwork and leadership (CPA Canada 2012b). The CPA Map describes the set of competencies to be developed in a graduate-level professional precertification education program and, unlike the proposed Framework, is not a map of the full set of competencies that an accountant might need for career-long competency.

Although some competencies in the proposed Framework do not explicitly appear in the CPA Map, all of them are incorporated into the Supplement. The CPA Map also specifies proficiency levels for each competency, including requirements for significant cross-competency integration. As with the Framework presented in this paper, the CPA Map is designed for a broad range of accounting careers.

Selected European Frameworks

The frameworks of the Association of Chartered Certified Accountants (ACCA 2013) and the Institute of Chartered Accountants in England and Wales (ICAEW 2012) contain many accounting competencies similar to those reflected in the proposed Framework, but they do not explicitly include the foundational competencies, nor do they have an emphasis on the broad management competency of process management and improvement. The ICAEW does not directly refer to enterprise performance management, while the ACCA does incorporate that topic into the section on “Advanced Performance Management.”

Summary of Comparisons

In terms of topical content, the proposed Framework is consistent with other educational frameworks in accounting, particularly when those frameworks are viewed collectively. The commonalities with existing frameworks provide convergent validity to the Framework presented in Figure 1. A close comparison, however, reveals three important differences between the Framework and the alternatives. First, the frameworks from practice tend to focus on entry-level requirements while the academic versions tend to emphasize both entry-level and long-term career demands. Second, the Framework differs from some of the others because it applies to all accounting students regardless of their specific short-term or long-term career aspirations. Third, the Framework emphasizes competency integration. The Framework assumes a clear interconnection of accounting competencies among themselves and with the accountant’s foundational and broad management competencies. The Framework is, thus, more comprehensive and integrative than the alternatives.

DISCUSSION

Any new paradigm or framework, including the educational Framework proposed in this paper, should be evaluated on the basis of its anticipated costs and benefits. Key issues are identified and discussed below.

Benefits and Costs

The proposed Framework is for individuals who wish to become value integrators, those who provide essential inputs into enterprise strategy through their possession of broader and deeper knowledge, which allows them to perform at a higher cognitive level (IBM 2010). In that context, the Framework promotes long-term career development starting with the educational process. The broad parameters of the Framework provide a solid foundation for career opportunities across a wide array
of settings in accounting, not just in public accounting. Put another way, the proposed Framework provides the foundation for life-long learning and career enhancement for the individual.

The Framework will also benefit the accounting profession and society as the profession evolves and the boundaries between the profession and other disciplines become blurred. Accounting education must develop professionals who can apply a broad range of integrated competencies. A failure to do so will make accounting an increasingly insular and vocational field (Demski 2007, 156), losing its relevance and eroding its value proposition over time.

The principal cost for implementing the Framework is faculty time and effort to develop specific learning objectives based on the Framework, to integrate the competencies on a curriculum level, to develop appropriate assessment mechanisms, and to perform these tasks at both the graduate and undergraduate levels. These costs arise within the context of competing resource demands. A discussion of each of these implementation costs follows.

Need for Detailed Learning Objectives

The proposed Framework is general and does not provide detailed guidance and recommendations about how to develop competencies. This effort will involve specifying detailed learning objectives and addressing other curriculum design issues. Follow-up work from functional areas of accounting such as systems, auditing, etc. is needed to develop the specific learning objectives required for implementation of the Framework. These learning objectives must be integrated across competencies and developed in cooperation with both accounting and nonaccounting faculty. An alternative strategy for setting learning objectives involves a macro approach, possibly through extending Flaherty (1979) by commissioning an updated comprehensive stakeholder survey based on the Framework’s competencies. Finally, successful implementation of the Framework will require attention to sequencing of material over a four-year (or longer) period. Suitable approaches to this sequencing are discussed in IMA-MAS Curriculum Task Force (2013b); alternatively, Bloom’s taxonomy (Bloom 1956) or the approach advocated by Pascarella and Terenzini (1991, 2005) may be of use.

Curricular Integration

Another key implementation issue relates to curriculum integration, both in terms of what gets integrated and how such integration occurs. Coordination between accounting and other disciplinary areas is required by the competencies laid out within the Framework. The IMA-MAS Curriculum Task Force (2013a) provides suggestions for how this integration might be accomplished using (among others) capital asset management (capital budgeting), managing new product development (target costing), and strategic performance measurement (balanced scorecard) as examples. The issue of how the learning process is structured is also important. The use of “integrated learning cycles,” discussed in Needles (2014), is one approach that could be used to guide curriculum integration efforts in accounting. An alternative is discussed in IMA-MAS Curriculum Task Force (2013b), which provides guidance for development of the cognitive skills needed for effective integration.

Assessment Mechanisms

Successful implementation of the Framework requires a comprehensive assessment plan. The development of learning objectives associated with the Framework and the development of an associated assessment plan should occur contemporaneously. The more highly integrated competencies are likely to provide a significant challenge toward development of reliable and cost-effective assessment methods.
Graduate Education

While much of the preceding discussion was oriented at the development of students at the undergraduate level, graduate education is also an important consideration. One recommendation is that specializations such as tax, auditing, etc. should be reserved for master’s-level programs in accounting (Taylor 1932; Bedford et al. 1986). The role of the Framework within graduate accounting education has yet to be fully addressed. Regardless of the focus of graduate study in accounting, it is imperative that the basic curriculum required of all accounting students be a broad foundation that can be built upon through graduate study, continuing professional education, and professional experience.

SUMMARY

The Pathways Commission (2012, 67) challenged the academy to define the supporting body of knowledge for the practice of the future. The Joint IMA-MAS Curriculum Task Force’s comprehensive, integrated educational Framework discussed in this paper is a response to this challenge. The development of the proposed Framework was informed by a comprehensive review of the professional and academic literatures. This review produced four fundamental recommendations: first, the perspective of accounting education should be reoriented to focus on curricular requirements for long-term career demands; second, the scope of accounting education should be broadened to include organizational settings beyond public accounting; third, curriculum recommendations should be based on an understanding of how accountants add value to their organizations; and fourth, the professional competencies of an accounting education should be developed within the curriculum as integrated competencies. The proposed educational Framework is based on these four recommendations.

Despite repeated proposals that the goal of accounting education was to produce creative, adaptive life-long learners, meager progress has been made in accomplishing these goals (Trueblood 1963; Bedford et al. 1986; AAA 1989). The need for reform has only increased as the field of accounting and societal expectations have evolved. The proposed Framework should help accounting educators provide students with the competencies needed to succeed, thereby empowering all accounting graduates to advance their profession, organizations, and society.

REFERENCES


CPA Canada. 2012b. *The CPA Competency Map: Understanding the Competencies a Candidate Must Demonstrate to Become a CPA*. Available at: http://cpacanada.ca/certification-program/the-competencies-of-the-newly-qualified-canadian-cpa


