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Towards Competent Professional Accountants

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TOWARDS COMPETENT PROFESSIONAL ACCOUNTANTS

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Executive Summary

1. The goal of accounting education and experience is to produce competent professional accountants. For this reason, it is important to understand what is meant by the term "competence" and how it can be achieved and demonstrated.

2. This paper defines "competence" as being able to perform a work role to a defined standard with reference to real working environments. Professional accountants need to have "capabilities," such as knowledge, skills, professional values and attitudes, to be able to demonstrate competence. Capabilities indicate potential competence that may be transferred to different situations.

3. In the past, there were two rather different types of competence-based approaches. The *functional analysis* approach, favored in Australia, New Zealand and the UK, focused on performance outcomes as a starting point. Some U.S. competence-based studies, on the other hand, focused on capabilities, such as knowledge, skills and professional values. While the functional analysis approach often resulted in detailed lists of specific competences, the second approach tended to result in lists of general capabilities associated with performance outcomes. The two approaches are now converging in a unified approach, as explained in this Paper.

4. Professional bodies usually assess candidates' competence all the way from entry level to membership. For such assessments, statements of competence should describe the functions and tasks of professional accountants sufficiently clearly to facilitate the assessment of whether candidates have carried them out to the standard required in the workplace. The functional analysis approach is suited to this purpose as long as it avoids excessive detail. Capabilities that might be indirect indicators of competence may also be specified.

5. Capabilities have been grouped in many different, sometimes complex, ways. The following six categories are one example:

   - attitudes (for example, professional demeanor/values);
   - behavioral skills (for example, leadership);
   - broad business perspective (for example, strategic/critical thinking);
   - functional skills (for example, risk analysis);
   - technical knowledge (for example, audit);
   - intellectual skills (for example, knowledge, understanding, application, analysis, synthesis and evaluation).

6. A particular terminology is associated with functional analysis. Functional analysis is a methodology used for mapping occupational areas into categories in terms of key roles, units and elements. Performance criteria and, in some cases, range indicators specifying

the types of contexts covered by the performance criteria are attached to each element. Together, these make up statements of competence. Capabilities such as attitudes, behavioral skills, broad business perspective and functional skills are usually also specified. Knowledge and understanding may be set out as well, sometimes in the form of a curriculum.

7. Competence may be assessed by a variety of means, including workplace performance, workplace simulations, written tests of various types and self-assessment. A mix of assessment methods can be used depending on which methods are best suited to test the different types of performance outcomes or capabilities. Assessment of capabilities can indicate a potential ability to perform competently and this potential may apply across several work areas.

8. Some of the early users of functional analysis in the UK emphasized the performance outcomes of the work of accountants — what they actually do for a living — rather than capabilities such as knowledge, skills and professional values. By contrast, the AICPA professional competency models developed to assess practitioners in public and private practice focus on capabilities, that is, knowledge, skills, abilities and attributes needed at varying levels of practice: basic, intermediate and advanced. The competency models are designed to facilitate achieving increasing levels of responsibility and to identify continuing professional development needs. A separate core competency framework identifies the capabilities needed to begin a professional accounting career and to support life-long learning.

9. This Paper draws together these various strands and offers guidance on how member bodies can, on a unified basis, adapt their own qualifications to a competence-based approach. It also reviews some of the issues surrounding competence-based approaches and how these can be dealt with.

10. Performance outcomes-based approaches often focused on specific aspects of behavior that could be readily identified and measured. Higher-level capabilities, such as analysis, synthesis and evaluation are also specified in many competence studies. The selection of relevant capabilities varies in different studies.

11. The range of work accountants undertake is wide, expanding and becoming more specialized. It is unlikely, therefore, that any one person can possess all the competences and capabilities expected of accountants at the point of admission to the profession. Through assessment, however, an individual can demonstrate whatever level of competence is required. Competences and capabilities must also be kept up to date and added to throughout a professional career. Relevant capabilities enable accountants to gain competence in other fields as their careers progress.

12. A number of methods are available for identifying (as distinct from assessing) competences and capabilities, including interviews, postal questionnaires, focus group interaction and direct observation. Functional analysis is an efficient method of ordering this information down to the level of detail required for assessment purposes.

13. In functional analysis, the elements describe behavior, outcomes and actions using active verbs and objects. The description of capabilities tends to be less formal and may not specify performance criteria. Often, only one key word is used to describe a capability. Over-elaboration is, in any case, confusing and simplified versions of full competence studies are usually more helpful for users, for example in the form of short training records.

14. Although competence at the point of entry into membership is often assessed on a "competent or not competent" basis, competence still has to be maintained on a continuing basis after entry. Linking academic studies, on-the-job training, work experience and professional education is more likely to be effective for this purpose than relying on only one of those components. The most difficult component is gaining sufficient, focused and high-quality evidence about performance in the workplace. The maintenance of competence after admission to membership is also difficult to monitor. For this reason, emphasis is often placed instead on continuing professional development activities that reinforce capabilities relevant to performance outcomes.

15. A major challenge facing the original users of the functional analysis approach was how to assess competence in the absence of traditional examinations. Performance in the workplace is at the heart of competence, yet it can be assessed directly only in terms of workplace outcomes. This problem can be as acute when it comes to assessing capabilities. It is possible, of course, to obtain supervisor assessments from the workplace. Such assessments are usable when they are well structured and guidance is provided about desired outcomes. Such approaches, however, incur costs for employers and some may choose not to be involved. For these reasons, and to maintain consistency of testing, many bodies have retained most of the assessment in-house. Case studies and simulations of workplace environments offer a partial solution to testing skills required by employers and may be accepted because they are more economical and less disruptive of management time than other methods involving direct observation.

16. Assessment methods need to offer validity, reliability and adequate cost-benefits to employers. Validated competence standards can provide the platform for valid assessments. Assessment structures and systems can then be designed to provide reliability and cost-effectiveness. Many methods are available, ranging from written tests, projects, logbooks and simulations to self-assessment and direct observation at work. Some of these may be more appropriate for testing knowledge and skills, while others may be more appropriate for assessing attitudes. Examinations, for example can test knowledge and intellectual skills quite well, while supervisors may be able to assess attitudes and behavioral skills. A suitable mix of methods can compensate for the shortcomings of any one particular method.

17. Member bodies wishing to implement a competence-based approach should:

- identify the performance outcomes expected at work;
- specify the capabilities (knowledge, skills, professional values and attitudes) required to demonstrate competence;
- specify IT skills;
- identify a small number of common key functional areas (financial reporting, auditing, management accounting, taxation and so on);
- consider the need for, and define, specialist roles as appropriate, for example, treasury management;
- break these roles down into as many units and elements as may be required for assessment purposes and add a manageable number of performance criteria and range indicators to each element, bearing in mind the needs of workplace appraisal systems;
- specify desirable related knowledge areas, for example, law, economics and so on;
- decide on an appropriate assessment strategy. If examinations are used, they will probably require a more detailed curriculum framework useful for examiners and candidates. If workplace assessment is favored, consideration should be given to using simulations.

18. Professional bodies will find it may take considerable work to develop and validate competency standards. The critical requirement for competence-based assessment is validation of the competency standards to be used as its platform. The key test is whether the competency standards reflect the requirements for competent practice. Although consultants are often hired to carry out competency studies, member bodies may be able to collaborate to identify competences themselves. Existing documentation, such as training records and job descriptions, may also be utilized. Member bodies may also wish to draw on the examples and experience of other IFAC member bodies, some of which are noted in this Paper. Member bodies should find that many of the occupational areas they cover are fairly similar.

Preface

19. International Education Papers for Professional Accountants promote discussion or debate on education issues affecting the accounting profession, present finding or describe situations of interest relating to education issues affecting the accounting profession.

Purpose of the Paper

20. In 1996, IFAC published a revised version of International Education Guideline # 9, *Prequalification Education, Assessment of Professional Competence and Experience Requirements of Professional Accountants*, which described the goal of accounting education. This goal has been repeated in the Exposure Draft of an *Introduction to International Education Standards for Professional Accountants*, which IFAC published in July 2002. It states that:

> *The goal of accounting education and experience is to produce competent professional accountants capable of making a positive contribution over their lifetimes to the profession and society in which they work. The maintenance of professional competence in the face of the increasing changes accountants encounter makes it essential that they develop and maintain an attitude of learning to learn. The education and experience of professional accountants should provide a foundation of knowledge, skills, professional values and attitudes that enables them to continue to learn and adapt to change throughout their professional lives.*

21. This International Education Paper for Professional Accountants suggests ways in which this goal can be put into practice.

22. Consideration of the competence-based approach should take into account the various methodologies adopted around the world. This Paper draws these different strands together and offers guidance on how member bodies can take a competence-based approach to determining their qualification requirements. The Paper identifies the objectives of the competence-based approach, defines competence, describes different types of statements of competence (together with their uses and drawbacks), and offers guidance to member bodies on how to conduct their own studies. It is a descriptive survey of the work done mainly by IFAC member bodies, rather than an academic paper or a literature review.

Background

23. In June 1998, the IFAC Education Committee issued a Discussion Paper on *Competence-based Approaches to* the *Professional Preparation of Accountants.* That Discussion Paper presented the issue of competence and described what is involved in a competence-based approach. It also presented some guidance to member bodies and solicited feedback to better understand what is happening around the world in the specification of qualifying requirements for professional accountants.

24. A revised Exposure Draft Discussion Paper on *Competence-based Approaches to the Preparation and Work of Professional Accountants*, issued in May 2001, continued with the objective of offering general guidance to IFAC member bodies on how to set about implementing such approaches. It reflected comments received regarding different approaches to competence-based qualifications frameworks and responded to changes in the field of competence-based approaches since the first Discussion Paper was issued. The Paper also drew on some of the material in a literature review prepared for the Education Committee by Dr. Efrim Boritz at the University of Waterloo.

25. The revised draft noted a distinction between the output-based *functional analysis* approach, which focused initially on roles, tasks and sub-tasks actually performed by accountants in the workplace, and the input-based or *capability* approach, which focused initially on the knowledge, skills and professional values required to demonstrate competence. The Discussion Paper aimed to move the debate on competence-based approaches forward by bringing the two approaches together within a single, overall framework.

26. This International Education Paper for Professional Accountants takes into account comments received during the exposure period and brings the previous Discussion Papers up to date. In particular, it shows how a performance outcomes-based approach combined with capabilities offers a way forward for competence studies.

Introduction

Objectives of Adopting a Competence-Based Approach

27. Professional bodies set qualification standards for the admission of candidates into membership. As a result, employers and clients usually understand that such admission means that professional bodies are satisfied that their members are competent to work as professional accountants and to offer their services to the public. To protect themselves against the long-term risk that the value of their qualifications will diminish, professional bodies have an interest in defining what criteria will show competence and in demonstrating that their members meet these criteria. In some countries, such as South Africa, it is becoming a formal requirement that professional bodies register their qualifications according to competency levels set out in a National Qualifications Framework.

28. It follows that professional qualifications should be based on outcomes that are relevant to the work performed by professional accountants and can be reasonably assessed. Similarly, continuing membership in professional bodies should be contingent on members maintaining competence throughout their careers.

29. Many of the early users of functional analysis, particularly in the UK, placed greater emphasis on behavioral objectives than on knowledge and understanding. The place of knowledge and its assessment should not, however, be underplayed within the education

and training process. Competence at work is usually based on a wide understanding of accountancy.

30. This Paper suggests that one of the objectives of the competence-based approach should be to link accounting curriculums more closely with workplace requirements. By analyzing workplace roles, professional bodies can then work backwards to determine the knowledge and other capabilities that those roles are based on. Thus, a competence-based approach can inform education and training systems of the relevant knowledge and capabilities expected. Accounting curriculums can be updated by regularly reviewing workplace requirements and then determining the revisions needed to meet the new requirements, thus helping to ensure that the knowledge and other capabilities remain relevant.

Background to Competence-based Approaches

Definition of Competence

31. In the past, there have been two rather different approaches to competence. Both share the objective of producing competent professional accountants, in terms of the work accountants actually perform in the workplace. The two approaches differ somewhat, however, in their emphasis on performance outcomes and capabilities and in their usage of the terms competent/competency and competence(s)/competencies.

32. One approach is founded on a formal technique known as *functional analysis*. As a starting point, functional analysis focuses on observing the roles and tasks accountants perform in the workplace. Competence is defined in terms of the ability of candidates to perform these roles and tasks to a defined standard (often at the entry point into the profession). It, therefore, emphasizes the performance outcomes of the education and training process — accountants performing roles and tasks in the workplace to a defined standard. This approach has been favored particularly in Australia, New Zealand and the United Kingdom. Early users of functional analysis in the United Kingdom often implied, without always setting them out, the capabilities that must be acquired through the education and training process to demonstrate competence.

33. Another approach focuses, as a starting point, on the capabilities necessary to achieve potential competence as a professional accountant. Competency is defined in terms of these capabilities. It emphasizes the capabilities the education and training processes contribute to competency. Capabilities can also be expressed in terms of learning outcomes. This approach has been adopted in some studies in the United States.

34. These two rather different approaches offer a different mixture of advantages and disadvantages. This Paper suggests both approaches can be adopted and, in many cases, have been integrated, although the precise choice or mix of methods depends on each professional body's specific environment. To illustrate this point, IEG 9 and the proposed International Education Standards for Professional Accountants (IES) identify three components of the qualifying process: academic study, practical experience and tests of professional competence. How these three components are balanced off against each other may differ from one environment to another.

35. The above three components are delivered in three different settings:

- educational institutions (to develop the necessary capabilities);
- the workplace (for practical experience); and
- professional education programs (leading to tests of professional competence).

36. Environmental factors will determine how far these three components can best be combined to ensure the competence of professional accountants. For example, where assessment in the workplace is not prescribed or not yet feasible, or education is under-

developed, professional bodies may prefer to rely on their own education programs and tests of professional competence. The approach in developing countries, for instance, needs to take into account the particular economic and cultural environments involved. The competence-based approach is particularly important in developing countries because of the current push to become part of the global economy.

37. Rather than present two dichotomous approaches, this Paper aims to move the discussion of competence-based approaches forward by pulling the performance outcomes-based approach and capability-based approach together. It aims to identify and embrace the particular strengths of each approach, acknowledging the common objectives of both.

38. Many different definitions of competence have been proposed. Definitions are to be found in studies published in Australia, New Zealand, South Africa and the UK, as well as in the USA and Canada — and by IFAC itself. The first IFAC Discussion Paper offered the following definition:

> *Competence is the ability to perform the tasks and roles expected of a professional accountant, both newly qualified and experienced, to the standards expected by employers and the general public.*

39. The AICPA (American Institute of Certified Public Accountants) Vision Project gives a definition that is not dissimilar:

> *Competence is the ability to perform high quality work in a capable, efficient, and appropriate manner.*

40. It also gives a definition of core competencies that refers to a set of distinguishing characteristics deemed to be especially effective:

> *Core competencies are a unique combination of human skills, knowledge, and technology that provides value and results for the user.*

41. The Certified General Accountants Association of Canada (CGA) competency framework gives a similar definition:

> *Competencies are the knowledge, skills, abilities and behaviors that lead to effective performance in a professional role.*

42. A common definition of competence, used by the National Training Board in Australia amongst others, is:

> *The ability to perform the activities within an occupation or function to the standard expected in employment, and*
>
> *Standards state in outcome terms what is expected of any individual performing a particular occupational role.*

43. In South Africa, the Public Accountants' and Auditors' Board (PAAB) has developed a recognition model. The model specifies that the education, training and assessment programs of professional bodies that meet the requirements of the PAAB may be granted

recognition status. The recognition model incorporates a curriculum framework that defines professional competence and core competence separately, as follows:

> *Professional competence is the ability to perform the tasks and roles expected of a Registered Accountant and Auditor to standards which are appropriate locally and comparable internationally.*
>
> *Core competence is the ability to apply the concepts and principles of a defined technical body of knowledge, skills and professional values in an integrated and analytical manner to a standard that provides a foundation appropriate for further professional development.*

44. The Canadian Institute of Chartered Accountants (CICA) has combined the pervasive qualities and specific competencies expected of a CA to produce its competency map. The CICA defined a competency as

> *a particular task or role that the experienced CA is expected to be able to perform while applying or bringing to bear, the pervasive qualities that are characteristic of a CA.*

45. This paper uses the following definition of competence, derived from these studies:

> *Competence is being able to perform a work role to a defined standard with reference to real working environments.*

This definition emphasizes the ability of individual members to perform to standards expected of professional accountants and pre-supposes an appropriate level of knowledge, skills, professional values and attitudes. The definition allows for assessments to be made at work or by equivalent means, such as workplace simulations.

46. There is some confusion about the use of the terms “competence,” “competencies” and “capability.” Sometimes, competence and capability are taken to mean the same thing. Sometimes, capabilities are known as competencies, capacities, abilities, key skills, core skills, fundamental skills and values, attitudes, distinguishing characteristics, pervasive qualities or individual attributes. Some users of functional analysis only imply capabilities in terms of performance outcomes; in other approaches, relevant capabilities are laid down but not always defined in terms of performance outcomes. This difference generally leads to more detail in the functional analysis approach, which helps the assessment of the competence of candidates. This Paper integrates the notions of performance outcomes and capability in defining competence. This Paper uses a number of terms which are defined as follows:

Capabilities are the professional knowledge, skills and professional values and attitudes required to demonstrate competence.

Competence is being able to perform a work role to a defined standard with reference to real working environments.

Competences are tasks performed in the workplace to a defined standard.

Competencies is a term often used in the US based approach taken to have the same meaning as capabilities.

47. One of the implications of a competence-based approach is that academic courses of study are expected to contribute to the development of competence in a much more focused way. Their professional components require clearly specified outcomes to which teaching and assessment must be oriented, and their contribution to the competence requirements of the professional qualification must be clearly demonstrated. Where these outcomes constitute part of the competence specification, they may be described as "competence-based." When they contribute to only some aspect of competence, they are better described as "competence-referenced."

Categories of Capabilities

48. Competence has been defined above in terms of workplace outcomes, while learning outcomes are also required to demonstrate competence. Capabilities may be categorized in various ways. IEG 9 used the following categories: knowledge, skills and professional values (see Appendix 6 for a fuller list). Capabilities include:

- attitudes;
- behavioral skills;
- broad business perspective;
- functional skills;
- technical knowledge; and
- intellectual abilities.

49. Attitudes, behavioral skills, broad business perspective and functional skills cover professional values and demeanor, leadership, strategic and critical thinking and risk analysis (see Appendix 3 for a fuller list). IEG 9 identified professional ethics and values, interpersonal skills, communication skills and intellectual skills as key capabilities. The proposed IES on *Professional Skills and General Education* issued in July 2002 suggests the skills required include intellectual skills, technical and functional skills, personal skills, interpersonal and communication skills and organizational and business management skills, together with a broad-based general education.

50. Technical knowledge is one category of capabilities that covers the topics making up the subject of accountancy and is found in all accountancy curriculums: financial reporting, auditing, taxation and so on. When these topic areas are expressed as workplace outputs, together with performance criteria, they may be termed competences (see Appendix 4 for some typical lists). IEG 9 identified four knowledge areas: general knowledge, organizational and business knowledge, information technology knowledge, and accounting and accounting related knowledge. The proposed IES on the *Content of Professional Education Programs* suggests professional education should cover accounting, finance and related knowledge, information technology knowledge and organizational and business knowledge.

51. The intellectual abilities (referred to in IEG 9 as cognitive abilities) are loosely based on Bloom's widely accepted categories (Bloom, B. S. *Taxonomy of educational objectives.* New York: MacKay, 1956). In ascending order of sophistication these are knowledge, understanding, application, analysis, synthesis and evaluation. These capabilities will normally underpin academic programs and should form part of the definition of a competent professional accountant.

Approaches to Developing and Implementing a Competence-based Framework

52. Competency studies are often instigated by representatives of particular employment sectors or occupational groups, government agencies or professional bodies themselves.

53. Once the decision is made to undertake such a study, the next step is usually to map the main functions of the profession. The degree of detail depends on the point at which meaningful assessments can be made and it may proceed through several levels, each of which breaks down the sector's work into smaller and smaller units and then elements. Appropriate performance criteria are specified for each element, but should not be too numerous. The analysis may stop at the pre-qualification stage or go beyond into the post-qualification stage.

54. If professional bodies manage their own qualifications processes directly, they can more easily ensure that their statements of competence are put into practice. In other cases, professional bodies, as the designers of competence-based frameworks, may have to persuade education providers and employers to base their respective curriculums and training programs on those frameworks. This is why involvement in the development process and understanding of the outcomes is so important.

55. In either case, decisions have to be made about how and where the competences are to be developed and assessed. Assessments may include workplace performance, workplace simulations, written tests of various types and self-assessment (see also paragraph 119). The involvement of employers and educators is essential.

Competence-based Approaches in Practice

56. The use of the functional analysis approach is a relatively recent phenomenon. In the UK, for instance, the foundations for performance-related competence-based frameworks were laid down by a series of government papers in the early 1980s. Examples of this approach include a review produced in 1998 for the Association of Chartered Certified Accountants based in the UK (although the study was international) titled *ACCA Functional Map: Competency Frameworks & Membership Competences*. An overview of this functional map (showing only functional grouping 1; functional grouping 2 is more detailed) is attached as Appendix 1.

57. In 1993, the Institute of Chartered Accountants in Australia, the Australian Society of CPAs (now CPA Australia) and the New Zealand Society of Accountants (now Institute of Chartered Accountants of New Zealand) co-published an integrated approach, focusing on both performance outcomes and required capabilities, *Competency Based Standards for Professional Accountants in Australia and New Zealand.* Appendix 2 shows an example of standards of competence taken from this map. Note that this illustration deals only with elements of competence and their performance criteria and does not illustrate the capabilities associated with the function or with the key roles (from competent to expert) identified with the function.

58. The Canadian Institute of Chartered Accountants (CICA) has moved from an input or capability-based syllabus to a performance-outcomes approach, starting with a competency map, and describing entry level requirements in terms of pervasive qualities: ethical behaviors and professionalism, personal attributes and professional skills, specific technical expertise, and levels of proficiency. Each type of competence is broken down into units, elements and possible evidence of performance.

59. The South African government has introduced new legislation dealing with education and training. This legislation includes the South African Qualifications Authority Act, which enacts the introduction of a National Qualifications Framework. The underpinning requirements of the framework are that all qualifications are to be based on performance outcomes and that all competency-based standards are to be drafted by the respective stakeholders in that particular discipline.

60. The accountancy profession in South Africa has embraced these changes and is currently, through the formation of a Standards Generating Body, reformulating all its accounting qualifications along competency lines. The approach has been to follow the functional analysis route to include capabilities, as this is best suited to incorporating the concepts of transferability, mobility and accessibility of qualifications for the benefit of all prospective learners. To maintain international recognition and reciprocity in any new qualifications structure, recognition of prior learning and maintenance of professional standards has also been incorporated into the revisions.

61. The competence-based movement in the USA can be traced back further than elsewhere, for more than 30 years. Recent examples include the Institute of Management Accountants' (IMA) study *The Practice Analysis of Management Accounting* and the two AICPA frameworks currently in existence:

- The AICPA Core Competency Framework for Entry into the Accounting Profession (see Appendix 3 for more details); and
- The Competency Model for the New Finance Professional (see Appendix 4 for more details).

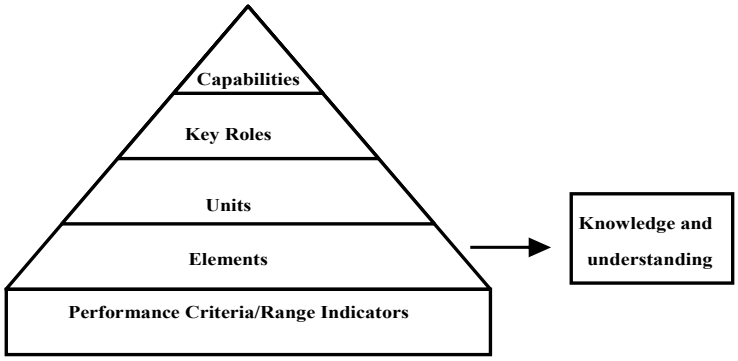
62. In a related field, the Institute of Internal Auditors' *Competency Framework for Internal Auditing* follows an integrated approach, focusing on performance outcomes and attendant capabilities.

63. Following on from its profession-wide CPA Vision Process, the AICPA has developed an on-line assessment tool underpinning the New Finance Competency Model. This Competency Assessment Tool (CAT) enables professional accountants to identify any competency gaps (for advancement), to identify learning activities to close such gaps and to track the completion of the learning activities.

64. A diagram illustrating two approaches (the competencies/capabilities approach and the functional analysis/performance outcomes approach) is shown below. In the AICPA model, "competencies" are listed as clusters of capabilities (knowledge, skills and abilities) grouped under various headings (functional expertise, personal attributes, broad-based business perspective and leadership qualities). Functional analysis starts with key roles and breaks these down progressively into units and elements, together with their performance criteria. These make up statements of competence. Capabilities have been added at the top end and knowledge and understanding are listed as an adjunct. Together these define performance outcomes.

AICPA Competencies/Capabilities Approach

Functional Analysis/Performance Outcomes Approach



65. In practice, the competence-based approaches used are converging. For example, users of the functional analysis approach are aware of the limitations of inferring competence solely from observing the performance of professional accountants in the workplace. Similarly, proponents of the purely capabilities approach are aware of the need to continually refer to what accountants actually do in the workplace to ensure the continuing relevance of their prescribed set of capabilities.

66. Many developers of competence-based frameworks that were focused on performance outcomes alone are now specifying the capabilities associated with performance. They recognize the limitations involved in defining competence in terms of performance alone. Conversely, those who approached competence in terms of the definition of capabilities alone are now seeing the limitations of this approach, as it only indicates a potential to perform rather than specifying the performance that is necessary for competence to be demonstrated.

67. For example, the Institute of Chartered Accountants of New Zealand is currently pioneering a set of standards to provide benchmarks in reviews of tertiary education institutions. As part of the establishment of benchmarks, it is identifying learning outcomes that should result from the mandatory topics in the academic program. Course documentation will be reviewed for compatibility with the learning outcomes to be achieved. Similar work is being done by the professional bodies in Australia.

68. The AICPA has undertaken a study with its consultants at the American Institutes of Research to identify the work performed by entry-level CPAs in public practice and the knowledge and skills needed to perform that work. The purpose of this "practice analysis" is to determine the content specifications or "blueprint" for the Uniform CPA Examination. These studies are conducted periodically to ensure that the examination continues to meet the high standards for the initial licensing of CPAs.

69. In addition, the AICPA undertakes other projects, such as the CPA Vision Project, to identify the competency that will be required of accounting professionals in the future. This is essential in light of the rapidly changing market for professional accounting services.

Functional Analysis

70. Functional analysis is the methodology typically used in performance related approaches to competence. It starts with what people do at work, not the curriculum, and sets out the results in a rather formal way. A functional map, for instance, sets out the work accountants do in the core key work areas (often around six), roles or functional areas, and then progressively breaks each of these areas down into units and then elements (the precise use of this terminology differs somewhat from one study to another). The elements may also specify qualifying circumstances, for example, the situations, contexts and methods in which competence should be displayed.

71. Functional analysis requires that appropriate performance criteria be specified for every element (see Appendix 5 for some examples). The overall effect is to represent the work done by accountants at increasing levels of detail, without duplication, rather like a tree diagram, and this is what makes up statements of competence.

72. The 1993 Australia/New Zealand study was the most complex and detailed of its kind. It established units and elements of competence for six fields of practice, and associated performance criteria and provided cues to guide assessment against performance criteria. It also specified the role requirements of three key roles in relation to each element of competency. The key roles were: Competent Practitioner, Proficient Practitioner and Expert Practitioner. The performance expectations of each role were identified, along with the knowledge and understanding that was necessary to perform each element of competency.

73. The capabilities (referred to as individual attributes) identified with each function were further subdivided in terms of the three types of roles. A classification of individual attributes was developed, dealing respectively with cognitive skills and behavioral skills. The contextual dynamics and the management requirements involved in each functional area were specifically addressed as units of competence and elements of competency for the three types of role taker.

74. The Australia/New Zealand study was distinctive in that it identified the requirements of competent practice (performance demonstrated by teams) and competent practitioners (in terms of the performance demonstrated by individuals in each of the three roles identified). The study was unique in that it focused on the occupation of accountants rather than the work performed by individual members or potential members of any particular professional body.

75. Relatively recently, there has been an awakening of interest in the UK in the concept of core capabilities (referred to as key skills). These are considered to be necessary for personal competence in all work sectors and all work levels. These core capabilities are seen as overlaying any set of capabilities identified for particular occupations or fields of practice. The UK government has identified seven core capabilities: numeracy, communication, information technology, problem solving, personal skills, working with others, and improving own learning and performance. UK degree programs also specify intellectual abilities and non-subject specific skills. The Conference Board of Canada identified a similar list of capabilities in its *Employability skills profile*, covering academic, teamwork and personal management skills.

76. Competence-based approaches using functional analysis have as one of their outputs simplified practical experience records. These practical experience records allow the tracking of performance outcomes and the use and development of capabilities in the workplace. Practical experience records of this type are useful to the people involved as they can track their own development. Employers can also use them to monitor their employees' development. Practical experience records can also be used as evidence for

meeting the admission requirements of professional bodies, validated by members or employers.

77. A subsidiary output of competency studies is to provide a guide to the development of curriculums or syllabuses of knowledge and understanding. A good example is the 1995 Institute of Chartered Accountants of Scotland research project on the skills and abilities required of newly qualified accountants. This resulted in the complementary development of a simplified competency-based achievement record and a learning outcomes-based curriculum, demonstrating that combining functional analysis with capabilities does not have to be overly complicated.

Approaches in the USA

78. The approach in the USA has often, but not always, been less detailed than functional analysis. It tends to be more concerned with identifying the characteristics of superior performance in the various occupational roles of accountants, often with a view to future requirements. This, in turn, tends to lead to a greater emphasis on skills that have long-term career development value, rather than subject/content areas that change more rapidly.

79. Knowledge requirements are normally listed under subject headings, for instance, auditing, financial accounting, taxation and so on. Skills and abilities are also listed, some more specific than others, for instance, communication skills, research skills, business advisory skills and professional demeanor. Sometimes, knowledge, skills and attitudes are contained in the same list. Under this approach, there is usually no single functional map of the whole profession and typically no detailed performance criteria.

80. A good example is *The Practice Analysis of Management Accounting* produced by the IMA in 1996 and updated in 1999. This defines competency as a bundle of knowledge, skills and abilities (KSA) and lists 162 KSAs in 12 general categories. Because IMA is not a public practice body, the list does not include such items as External Auditing and Financial Reporting. (See also IFAC Study # 12 referenced in Appendix 7 for more on management accounting competency.)

81. The AICPA recently issued two competency frameworks (see paragraph 43). In both models, each competency carries a description together with a list of elements. One is a professional competency model for CPAs practicing the New Finance Model in business and industry. The model identifies the functional expertise (technical competencies) needed at different levels of responsibility within a company. It also identifies the broad business capabilities (relating to understanding internal and external business contexts), personal attributes (individual attributes and values) and the leadership qualities that are relevant at the basic, intermediate and advanced levels of responsibility. The model is competence-based and addresses the knowledge and skills needed in that area of work.

82. The AICPA has also developed professional competency models for the SysTrust Assurance Practitioner, the Electronic Assurance Practitioner and the Eldercare Practitioner, which are among the new assurance services that CPAs now offer.

83. In addition, the AICPA has produced a separate *Core Competency Framework for Entry into the Profession* for guidance to educators and students. This framework defines the core competencies and capabilities (functional, broad business perspective and personal) students need to demonstrate at the entry level following completion of 150-semester hours of education (a five-year degree program) but prior to work experience.

84. The AICPA core competency framework is skills based rather than knowledge based, and is intended to be utilized by educators to develop the core competencies and capabilities students need for professional accounting careers. It focuses on the skills that will need to be further developed and demonstrated in the work environment. The framework was developed based on the findings of the AICPA Vision Project (on the future of the accounting profession) and the professional competency model for practicing CPAs. (Part of this framework is shown in Appendix 3.)

85. By basing entry-level competency requirements on professional models, the framework supports the concept of learning as a continuum that begins in an academic setting and continues with life-long professional education and experience. Further, by basing curriculum guidance on professional expectations, the framework aims to ease the transition from student to professional.

86. The AICPA Competency Assessment Tool (CAT) is essentially a self-assessment tool designed for CPAs to determine gaps between current and needed competencies, develop learning objectives arising from these assessments and prepare action plans to fulfil their learning objectives. The gaps may be filled by continuing professional education courses or by career development. The learning continuum has also been divided into three levels: basic, intermediate and advanced. The CGA Competency Framework in Canada is quite similar in design to this model.

87. With regard to the Core Competency Framework, the AICPA is also developing sample teaching strategies and classroom techniques that demonstrate how the development of competency can be integrated into the teaching of technical content. In addition, a series of evaluation tools is being created to help educators evaluate the effectiveness of competency development in courses and entire programs, and to plan for program accreditation and curriculum revision.

88. Appendix 4 compares the competences and capabilities from four competency frameworks, two of which are performance outcomes oriented and two of which are capability oriented. Knowledge areas are not always shown in detail in functional maps (see Appendix 1), but may be specified in curriculums.

Issues with Competence-Based Approaches

Identifying Competences and Capabilities

89. One of the initial challenges in adopting a competence-based approach is identifying the performance outcomes and capabilities professional accountants need to achieve competence. Both the approaches distinguished in this paper have their merits as well as drawbacks, and an amalgamation of the two offers a helpful way forward. Functional analysis attempts to specify workplace competences in sufficient detail to enable objective assessment judgments to be made concerning suitability for entry to, and continuing membership of, the profession. On the other hand, too much detail is counterproductive. Capabilities are also important and need to be incorporated in statements of competency. These skills are, however, less easy to assess objectively. They should be integrated into curriculums along with relevant technical knowledge, on the understanding that they must continue to be developed throughout the professional experiences of accountants.

Validity

90. The first step in developing a competence-based approach is to identify *valid* performance outcomes and capabilities. The problem is one of ensuring that the outcomes and capabilities selected are relevant to the work of professional accountants, and that all the major relevant outcomes and capabilities are included in the framework.

91. There is a tendency for performance-based approaches to focus on aspects of behavior that can be readily identified through observation. Functional analysis as a methodology focuses on observed behavior and achieves a high degree of validity by directly asking employers what standards of work are acceptable. This inevitably means that such research has to be updated at regular intervals, especially when, as now, the roles of professional accountants are rapidly evolving

92. Yet research into the nature of professional expertise reveals not only the importance of the thought behind the action, but also the tacit use of a substantial amount of knowledge acquired through experience (which is not always, or easily, observable). Capabilities and higher-level intellectual skills, such as analysis, synthesis and evaluation, are also essential to the work of professional accountants. Because the functional analysis approach does not easily identify all of the relevant capabilities that contribute to competence, assumptions have to be made about the underlying knowledge, skills and professional values that underpin performance in the workplace. Nevertheless, these capabilities need to be brought into the analysis even if their identification is not always particularly straightforward.

93. While the functional analysis approach achieves high validity by being based on the experience of accountants in the workplace, there are limitations on the ability of observers to identify the entire set of capabilities required to achieve competency.

Awareness of this problem can help, and sometimes it is easier to identify certain capabilities than others. Appraisals of capabilities also have to be based on some evidence if the system is to have credibility. Nevertheless, there appears to be a fairly wide consensus on which capabilities are most important, although these need to be reviewed regularly and may be classified in several different ways.

94. Underlying knowledge is usually embedded in curriculums, which need to be kept up to date through competency studies. Curriculums may also reach beyond the entrance-level workplace experience and anticipate future more advanced needs, for example capital investment and decision models, accounting theory and strategic thinking.

Scope

95. The range of work accountants undertake is very wide and rapidly expanding. It is unlikely, therefore, that any one candidate will possess the whole range of competences and capabilities at the point of admission to the profession.

96. Candidates for membership in professional bodies should, therefore, be expected to comply with only the range of competences considered appropriate by their professional bodies. Other, more specialized competences, as well as competences relevant to more senior positions, can usually be expected to be demonstrated after qualification and need to be specified separately. For these reasons, continuing professional education, life-long learning and the ability to transfer competence to different situations are essential for professional accountants.

Methods for Identifying Competences

97. A wide variety of methods have been used to identify, as distinct from assess, job competences. These include:

- interviews, usually with employers and employees;
- surveys, for example, using postal questionnaires;
- workshops of various kinds, including group interaction; and
- various other techniques, including direct observation.

98. These techniques can be quite expensive, unless members carry out their own surveys or use existing documentation, such as training records, job descriptions and experience records. Member bodies may also wish to draw on the examples and experience of other IFAC member bodies, including some of the examples given in the appendices to this Paper. The bodies should find many similarities in their members' occupational areas. Functional analysis normally requires consultants who have some expertise in writing statements of competence.

Designing/Creating a Usable Framework

Framework Structure

99. The information gathered from competency studies tends to be quite extensive and, to make it useful, has to be organized in a logical manner. As the previous discussion has shown, functional analysis proceeds by grouping work roles into a few key areas and then breaking these down into as much detail as may be required, resulting in a larger number of elements.

100. At the general level, most competency frameworks tend to be fairly similar and there may be scope for sharing descriptions of competence within occupational areas, although there is always room for differences because of the particular structure of individual professional bodies. At the detailed level, functional analysis yields a large number of performance criteria. Identifying a large number of competences and their associated performance criteria may require specialists. Practical training tools, however, need to be kept as simple as possible.

Specifying Competences

101. In functional analysis, the elements describe behaviors, outcomes or actions and are stated using active verbs and objects. The performance criteria are designed to allow objective assessments of whether these outcomes have been met. Capabilities may also be specified.

102. The description of capabilities needs to be specific enough to allow adequate assessments. For example, a general description of "leadership" may read:

> *Individuals entering the accounting profession should be able to effectively lead in appropriate circumstances. This involves acquiring the skills needed to influence, inspire, and motivate individuals and groups to achieve results.*

The elements of effective leadership also need to be specified, together with indicators of whether they have been carried out successfully (see Appendix 5 for some examples).

Level of Detail

103. Historically, some competency studies have tended to result in very detailed lists of tasks and sub-tasks to completely specify each competence. Users claim to have suffered from information overload, and assessors say that they do not have the time to work through all the detail. Once users are comfortable with the process, however, they often find such lists not only quicker but also more consistent. Detailed competency studies can also be used as sources of reference, with simplified documentation for employers, students, members and educators. The level of detail provided should be adjusted to match the needs of the various user groups.

104. Although the functional analysis approach can be quite complex, it can nevertheless capture much information of use to employers (rather than academics) training accountants and assessing workplace skills. The capability approach is of use to academics when designing curriculums and then assessing students by means of examinations or other similar methods. Using functional analysis to derive simplified practical training records linked to assessments, plus curriculums and examinations, offers a practical way forward for member bodies designing their qualifications, always keeping in mind their own needs and circumstances.

Levels of Competence

105. Competence at the point of entry into membership is usually assessed on a simple binary scale, whereby candidates are considered to be either competent or not competent. Professional accountants are, however, continually changing and expanding the scope of their practice and improving the quality of their work. Competence, therefore, has to be renewed and kept up to date on a continuing basis through life-long learning.

106. While a binary approach would appear to be appropriate when measuring competence at the entry level, professional bodies may wish to develop other levels of competence when considering it at the post-qualification level.

Developing Competences and Capabilities

Roles of Academic and Professional Education, and On-the-Job Training and Development

107. Professional competence is developed through a combination of academic study, on-the-job training, work experience and professional education. It may be that the academic approach will cover more of the theory of accounting, professional education more of the practice and skills needed by professional accountants, and on-the-job training and work experience both practice and updating. Linking these approaches, and using a combination of the three components, to develop both functional competences and capabilities is likely to be more productive than attempting to develop the wide range of competences and capabilities required through any one route on its own.

108. The balance among academic study, work experience and professional education may depend on the resources available and the state of development of a country's economy. Work place assessment, for example, may require resources that some employers might find difficult to supply and the balance may shift to academic input. Ignoring work experience, however, means the assessment of performance outcomes will be limited and may place unrealistic expectations on academic training alone.

Assessing Competences and Capabilities

109. One of the key challenges facing the performance outcomes approach has been the issue of how to assess competence in the absence of traditional examinations. The most difficult component is gaining sufficient, focused and high-quality evidence about performance in the workplace. The maintenance of competence after admission to membership is also difficult to monitor. For this reason, emphasis is often placed instead on continuing professional development activities that reinforce capabilities relevant to performance outcomes.

110. This problem can be as acute when it comes to assessing capabilities. It is often simpler to adopt the more general approach of specifying knowledge and then testing it by examinations. Nevertheless, functional analysis has been useful in mapping the whole area of the work of accountants in a coherent fashion, and statements of competency can be used directly as the basis of training records, as well as for guiding curriculums and continuing professional education programs.

111. Assessors are expected to judge candidates on the basis of the stated performance criteria and to decide whether candidates are competent or not. Although assessment of performance in the work place is commonplace, if the assessment system is too complicated or difficult to apply, workplace assessors may be confused, especially if they do not have access to well organized human resources departments. Further, many workplace assessors are not necessarily well equipped to perform the role of assessors of professional competence.

112. To compensate for problems such as lack of expertise, inconsistency of assessment and the complexity of contributing factors when assessing work outcomes, simulations of workplace environments at places of learning may offer acceptable alternatives. On the other hand, certain capabilities, such as group skills, might be better tested in the work environment as they can present some challenges in academia, not least because of the artificial environment in which they are being tested. Nevertheless, these capabilities are well worth acquiring and should be tested by whatever means available.

113. The Association of Accounting Technicians in the UK, which bases its qualification on workplace assessment of competences, has retained an element of central assessment, including case studies and simulations. This is partly to obtain some assurance about consistency of assessment standards and partly because performance evidence gathered in the workplace is not yet a practical prospect for many potential candidates for vocational qualifications in accounting.

114. Another limitation with functional analysis is that, although some might prefer assessment in the workplace, it is not yet generally popular with employers and, in some cultures, not feasible. Higher education programs can, however, be changed rather easily to competence-referenced programs by simply specifying syllabuses in terms of learning outcomes rather than knowledge and skills inputs. These outcomes can be identified from

the documentation of professional bodies that have published statements of competence. Furthermore, learning outcomes are well suited to assessment, using objective testing and simulations, which are in turn quite well suited to computer-based testing.

115. The outcomes in higher education, however, are still based on the knowledge and understanding specified in syllabuses. One of the strengths of written examinations is that they are well suited to testing intellectual skills such as knowledge and understanding. Generally, skills in practical applications are difficult to assess realistically in higher education, and this is a weakness of traditional examinations. Nor are written examinations free of technical problems such as consistency of marking and subjective judgments as to standards.

116. Problems arise when higher education and employment are kept separate. In the traditional qualifying model, study usually precedes work experience. Knowledge is tested rather thoroughly but the practical application of knowledge might be tested only indirectly, if at all. The problem with the performance outcomes approach is that practical applications are usually well defined but are difficult to test satisfactorily. For instance, it is difficult to ensure comparability of workplace assessments over a wide number and variety of employers. The efforts of many professional bodies are directed at trying to find solutions to these problems.

117. In the UK, students often study in their spare time while at work. This stems from an old tradition that pre-dates the appearance of accounting degrees. Professional bodies in the UK set entire accountancy syllabuses, much of which students have to study irrespective of any prior learning. This might give the impression of a matching between education and work. It does not, however, necessarily solve the problem of assessing the application of knowledge to practical problems, especially if the immediate employment of students has little relation to the syllabus.

118. The ideal solution would be to create a more demonstrable link between formal education and on-the-job performance, so that professional-level outputs rather than purely educational inputs are evaluated. The acceptability of workplace assessments is also growing as employers' realization of the benefits increases. This ideal is not yet fully available under any of the current competence-based approaches, although simulations of workplace environments offer a partial solution to the some of the assessment problems. Users of competence-based approaches should, therefore, choose methods that suit their particular environments best and adopt a mix of the various approaches, with an appropriate emphasis depending on their particular circumstances.

Assessment Methods

119. There are several established means of assessing competences and capabilities, some of which are more appropriate for some types of competences than others, as shown below.

Assessment Methods	**Knowledge**	**Skills**	**Attitudes**
Evidence from prior learning	X		
Multiple choice tests	X		
Written tests	X	X	X
Oral tests	X	X	X
Project reports	X	X	
Assignments	X		
Log books, portfolios	X		
Self-assessment			X
Simulations	X		X
Direct observation of work activities		X	X
Indirect observation		X	
Supervisor assessment/ratings		X	X

(Derived from work done by Gonczi A., et al. "Establishing competency-based standards in the professions," and "The development of competency-based assessment strategies for the professions." Research Papers Nos. 1 and 8. Canberra, Australian National Office of Overseas Skills Recognition, Department of Employment, Education and Training, December and June 1993; also Eraut, M., "Developing professional knowledge and competence." London: The Falmer Press, 1994).

Validity

120. These methods can be used in combination, but the overall result needs to be valid and this can be a difficult issue. For example, it is sometimes hard for employers to see a relationship between the performance of trainees in professional examinations and their performance at work. Conversely, it is sometimes difficult for employers to accept the results of workplace assessments carried out by third parties.

121. The search for perfect validity leads to endless assessment because the search results in more and more assessments to make sure every single aspect of competence is covered. The key is for all parties to try to understand how practical considerations affect the validity, reliability and relevance of assessment outcomes and to use a variety of assessment methods appropriate to the type of competence being assessed.

Reliability

122. Reliability depends on whether different assessors can reproduce the test results in new tests. Although reliability should be a feature of assessment of competence, consistency is often a problem. Assessors may interpret the definition of competence provided in the official standard differently and judge the sufficiency and acceptability of the evidence pertaining to the competency differently. Similar problems apply to other assessment systems, including examinations.

123. Evidence suggests that specifying too many performance criteria results in all of them being ignored. Therefore, a limited number is preferable, combined with an element of central quality control. All assessment methods have their strengths and weaknesses. Using a variety of assessment methods will compensate for the above shortcomings of particular methods. Different assessment methods should also be chosen to take different settings and environments into account. Assessment does not have to be done all at one time and the assessment of competence may be cumulative over time, locations and methods.

Cost-Benefit to Employers

124. Employers often consider the cost of assessment a deterrent to the adoption of competence-based qualifications. At the same time, examination-based assessment systems are popular, at least in part because they are relatively easy and cheap to deliver on a mass scale, notwithstanding their well-known shortcomings. Nevertheless, progressive employers are becoming increasingly concerned with ensuring that their employees have up-to-date competences and capabilities when they are needed to provide a competitive edge in a rapidly changing marketplace. Good staff appraisal systems are a help here. The burden of assessment should, however, be shared, with the various parties making their own particular contributions: academics, employers and professional bodies

125. Purely theoretical or knowledge-based education does not meet all the needs of employers and means have to be found to deliver and assess relevant competences and capabilities where and when they are needed by the most appropriate means available. This requires cooperation between all the stakeholders concerned, so that education, training and assessment remain relevant to the roles accountants play in their particular environments.

Strengths and Weaknesses of the Approaches

126. The various approaches to assessing competence each have their strengths and weaknesses. Functional analysis on its own without specifying capabilities is not the whole answer. Over-elaboration is to be avoided and simplified documentation for training and assessment purposes is to be recommended. A mixed approach, combining functional analysis to specify performance outcomes with a specification of capabilities, offers the best way forward, always depending on particular circumstances. Such

specifications can be used to guide curriculum changes and to design training programs that meet international standards.

Conclusions

Summary of the Issues Involved

127. Since the goal of accounting education and experience is to produce competent accountants, the accountancy profession cannot afford to ignore the issue of competence. In some cases, it is becoming a formal requirement that professional bodies register their qualifications according to competency levels in a national qualifications framework. Employers also increasingly expect employees to have, or acquire, competences and capabilities when they are needed, providing a competitive advantage. Training in firms will, therefore, be directed at acquiring these competences and capabilities, and the profession should be in a position to work with employers and educators in this effort.

128. A distinction has been drawn between two rather different types of competence-based approaches. These are the functional analysis and performance outcomes approach adopted in Australia, New Zealand and the UK, as well as lately in Canada and South Africa, and the capabilities approach followed in some US studies. Early users of functional analysis in the United Kingdom often implied, without always setting them out, the capabilities that must be acquired through the education and training process to demonstrate competence. On the other hand, the approach followed in some US studies emphasizes capabilities rather than detailed performance outcomes. The approach adopted in Australia and New Zealand, as well as lately in Canada, South Africa and the UK, combines performance outcomes with capabilities.

129. Statements of competence using functional analysis can become quite detailed. Yet, it is impossible to assess competence without some degree of specificity. Competence may also be difficult to assess in the workplace without proper training systems. Written tests should be used to complement workplace assessment. Capabilities are also important. These have been emphasized in most, but not all, studies.

130. The variety of work accountants undertake is expanding, and new competences and capabilities are required all the time. It is unlikely that candidates will have all the competences and capabilities required of professional accountants at the point of entry into the profession. Competences and capabilities, therefore, need to be added to and kept up to date on a continuing basis.

131. Assessment systems need the cooperation of all stakeholders concerned: professional bodies, employers and academics. Realistic solutions are available, such as the use of simulations and simplified training logs, which, while not perfect, offer practical compromises. A unified approach that offers a way forward is set out below.

Way Forward

132. The following guidance represents a blend of the aspects that are common to most competence-based studies. Member bodies should, however, take into account their own circumstances and needs when considering their approaches to competency studies. Competence has been defined as *being able to perform a work role to a defined standard with reference to real working environments.*

133. A performance outcomes approach, combined with capabilities, offers a way forward. Functional analysis can help to specify workplace competences in sufficient detail to enable making objective assessments concerning suitability for entry to, and continuing membership in, the accountancy profession. Capabilities are important as well and should be incorporated in statements of competence (knowledge, skills professional values and attitudes). Competence statements need to be validated even if they become quite detailed, but simplified documentation can be prepared for users. For example, a small number of concrete examples of what is expected in the workplace helps to simplify the assessment process.

134. Employers are more likely to accept competence statements if they have been properly validated and reflect the reality of the occupation. Employers are also more likely to welcome the competence-based approach if the amount of documentation can be reduced to a minimum, for example by way of simplified training logs.

135. As long as it suits individual environments, the recommended way forward is a staged approach by which educators and professional bodies:

- identify expected performance outcomes, that is, what accountants actually do at work and at what standard;
- state what has to be demonstrated at work in terms of those outcomes;
- specify the capabilities required to demonstrate competence (knowledge, skills, professional values and attitudes);
- decide on the most appropriate mix of assessment mechanisms for the environments concerned. Assessments may include examinations of one sort or another as well as a consideration of performance at work or workplace simulations. If examinations form part of the assessment process, a curriculum stated in terms of learning outcomes will also be needed.

136. Functional maps are all slightly different and include different sets of items depending on the sectors of the workplace professional bodies deal with (see Appendix 4 for a comparison of some of them). As a minimum, the core fields of practice should include:

- Financial Accounting and Reporting
- Auditing and Assurance (Internal and External)
- Management and Cost Accounting

- Taxation
- Financial Management
- General Management
- Information Technology
- Governance and Ethics

137. Some member bodies cover fields of practice beyond these core areas and may want to add various more specialized items, for instance:

- Treasury Management
- Insolvency and Corporate Recovery
- Financial Analysis
- Business Organization and Logistics
- Business Planning
- Corporate Finance
- Administrative Accountability and Control
- Stakeholder Reporting
- Strategic Planning and Decision Support

138. These fields of practice can be broken down into as many units and elements as appear to be required for assessment purposes, together with performance criteria for each element (but not too many).

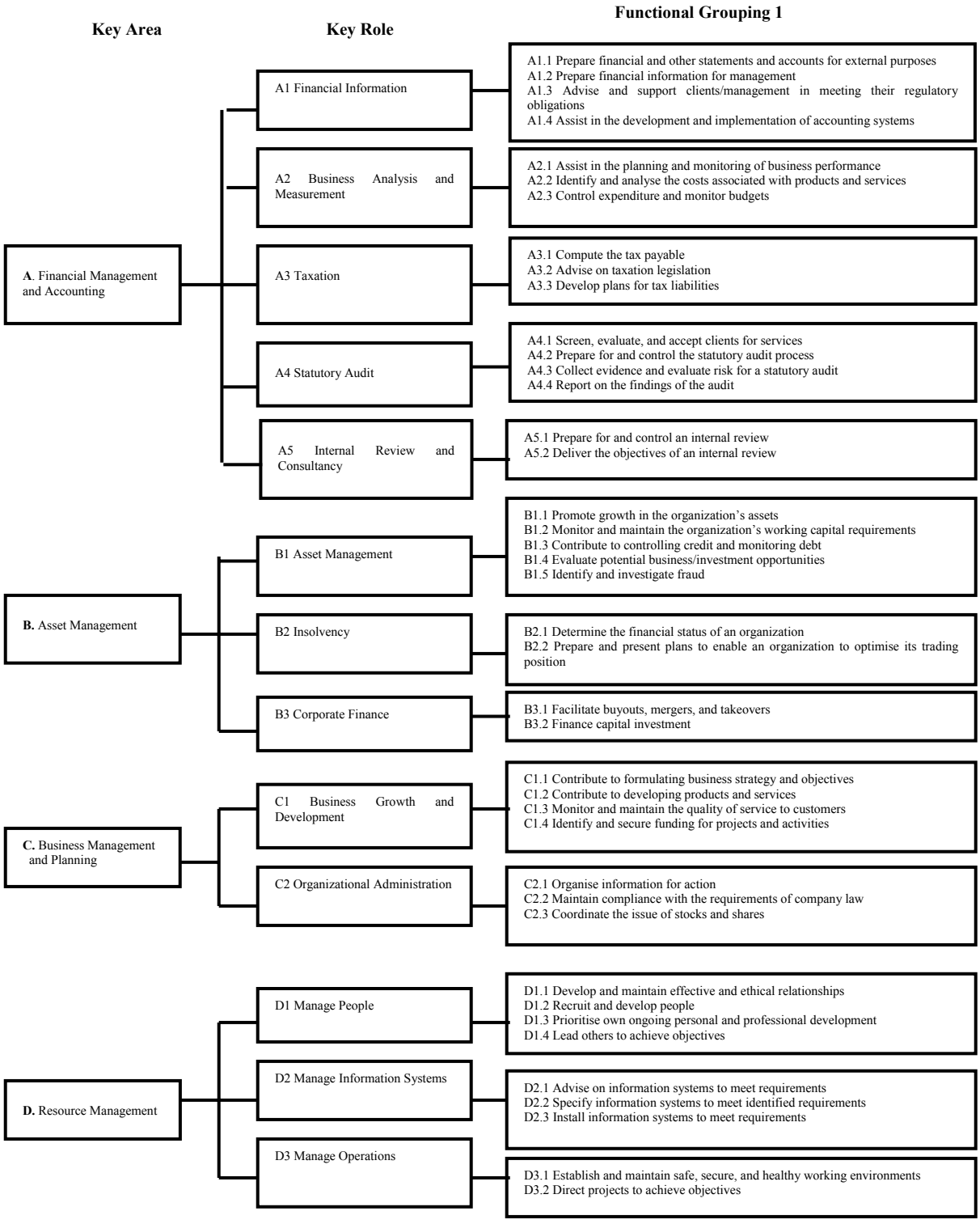
139. On top of these roles, a number of capabilities will also be required. These include: attitudes, integrity and judgment, behavioral skills, broad business perspective, functional skills, knowledge of technical content and intellectual skills. Again, member bodies may want to expand these with items of their own choosing, for example analytical skills, problem solving skills, information technology skills, personal skills, interpersonal and communication skills, working with others and improving own learning and performance, and organizational skills.

140. Lastly, several related knowledge areas will be required to support performance outcomes. As a minimum these should include: law, economics and quantitative methods. Member bodies may wish to add to this list, for example, marketing and behavioral science.

141. Competency studies are often carried out by consultants, who survey what competences members demonstrate by means of interviews, focus groups, questionnaires, and so on. Where resources are scarce, members may cut out the intermediary and compile competence statements from their own experience and/or by collaborating with others.

Another approach is for member bodies to gather existing information, for instance the training records of firms or individuals, and then compile a list of competences and capabilities. Member bodies may also wish to draw on the examples and experience of other IFAC member bodies, some details of which are set out in the appendices to this Paper. Member bodies should find that many of the occupational areas they cover have much in common.

Appendix 1. Overview of ACCA's Functional Map



Appendix 2. Examples of Standards of Competence

Examples of Key Role/Function and Units

ACCA Competences

Key Role	*Units*
Financial Information	Prepare financial and other statements and accounts for external purposes
	Prepare financial information for management
	Advise and support clients/management in meeting their regulatory obligations
	Assist in the development and implementation of accounting systems

ICAA,CPA-A, ICA of NZ Competences (Birkett)

Function	*Units*
External Reporting	Determine the external reporting policies of an organization
	Prepare and disseminate reports that meet an organization's external reporting needs
	Represent an organization in relation to external reporting
	Design and evaluate information systems that meet an organization's external reporting requirements
	Manage external reporting as a functional area within organizations
	Manage the complex and changing contexts that bear on the conduct and outcomes of external reporting work

Examples of Units, Elements, and Performance Criteria

ACCA Competences

Unit	*Element*
Assist in the development and implementation of accounting systems	Assist in the evaluation of changes to accounting systems

ICAA,CPA-A, ICA of NZ Competences (Birkett)

Unit	*Element*
Design and evaluate information systems that meet an organization's external reporting requirements	Evaluate systems
	Sub-elements:
	Obtain feedback from users
	Assess feedback
	Consider the engagement of consultants
	Implement changes where appropriate
	Evaluate consultants' inputs, where appropriate

ACCA Competences	**CAA,CPA-A, ICA of NZ Competences (Birkett)**
Performance Criteria	***Performance Criteria***
Maintain and agree monitoring schedules and processes to reveal actual and potential problems in use and value	The efficiency and effectiveness of the information and assurance systems underlying external reporting are established
Monitor that systems are fine tuned and adjusted as necessary to maintain and improve performance	Processes and methodologies for monitoring the information and assurance systems underlying external reporting are established
Give appropriate advice and support as soon as possible where clients/ users have specific problems relating to introducing new/ modifying existing accounting systems	Mechanisms for improving, revising or updating systems, based on an ongoing evaluation of their functioning, are instituted
Seek advice and assistance where problems encountered are beyond own remit or boundaries of knowledge and experience	Mechanisms for timely reporting, at appropriate levels, on the integrity and quality of the systems are instituted
Recommend modifications to systems that have been implemented or modified to ensure that the client's/ organization's requirements and obligations are being satisfied	

Appendix 3. AICPA Core Competencies Framework for Entry into the Accounting Profession

Functional Competencies

Decision Modelling
Risk Analysis
Measurement
Reporting
Research
Leverage Technology to Develop
and Enhance Functional Competencies

Broad Business Perspective Competencies

Strategic/Critical Thinking
Industry/Sector Perspective
International/Global Perspective
Resource Management
Legal/Regulatory Perspective
Marketing/Client Focus

Leverage Technology to Develop
and Enhance a Broad-based Business
Perspective

Personal Competencies

Professional Demeanor
Problem Solving and Decision Making
Interaction
Leadership
Communication
Project Management
Leverage Technology to Develop
and Enhance Personal Competencies

Example of Elements

Decision Modelling

Identifies problems and potential solution approaches

Uses quantitative techniques to
determine relative importance and
likelihood of alternative scenarios

Employs model-building to quantify
problems or test solutions

Evaluates the cost/benefit of alternative solutions

Organizes and evaluates information,
alternatives, cost/benefit, risks and rewards

Links data, knowledge, and insights
together for decision-making purposes

Objectively identifies strengths,
weaknesses, opportunities, and threats
associated with a specific scenario, case
or business activity

Appendix 4. Comparative Competency Frameworks

ICAA,CPA-A,ICA of NZ	AICPA	ACCA	IMA
(All Sectors - Birkett)	(Finance/Industry Model)	(All Sectors)	(Management Accounting)
FUNCTIONS			
Auditing		Statutory Audit	
	Internal Audit	Internal Review and Consultancy	Internal Auditing
External Reporting	Financial and Statutory Reporting and Accounting Principles	Financial Information	Financial Accounting
	Financial Analysis		
	Control Environment		
Management Accounting	Budgeting, Forecasting and Business Planning	Business Analysis and Measurement	Management and Cost Accounting
	Cost Management		
Taxation	Taxation	Taxation	Income Taxes
Treasury	Treasury Management	Asset Management	Financial Management
		Corporate Finance	
Insolvency and Reconstruction		Insolvency	
Management	Human Resources	Manage People	
	Information Technology	Manage Information Systems	Computer Systems and Operations
		Manage Operations	Operations
		Business Growth and Development	
		Organizational Administration	
SKILLS			
Personal and Interpersonal Skills	Personal Skills	Communication Skills	Interpersonal and Analytical Skills
Organizational Skills	Leadership Qualities	IT Skills	
Analytic/Constructive Skills	Broad Based Business Perspectives	Analysis and Planning Skills	
Appreciative Skills			

Appendix 5. Examples of Elements in Functional Analysis

In functional analysis, under each key role, and then under each unit of each key role, the elements describe behaviors, outcomes or actions and are stated using active verbs and objects. For example, within the key role for *Financial Information*, one element might be:

> *Prepare and present financial and other statements and accounts.*

A number of performance criteria for each element are then added. For the above example, these could include:

> *Ensure that the statements and accounts produced reflect relevant accounting standards and the requirements of any legislation.*
>
> *Take steps to confirm that statements and accounts, and the state of affairs of the organizational entity, are without material error.*

The same technique is used for softer skills. For example, within the key role for *Managing People*, under a unit titled *Lead Others to Achieve Objectives*, one element might be:

> *Identify and agree objectives and methods to deliver required outcomes.*

Performance criteria could include:

> *Clarify the outcomes that are required from your team, and ensure they are consistent with organizational strategy.*
>
> *Give your team members opportunities to contribute to the planning and organization of their work.*

It should be noted that these leadership skills are more specific than those shown at paragraph 102, where functional analysis was not used, and make it easier to arrive at objective assessments of whether these competences have in fact been achieved. Although functional analysis and lists of skills yield quite similar results at the initial level of analysis, functional analysis specifies performance criteria in greater detail. This is its strength but also its weakness if the analysis becomes too detailed.

Appendix 6. Categories of Capabilities

IEG 9 refers to capabilities as "knowledge, skills and professional values." Most of the capabilities identified in the documentation reviewed for this Discussion Paper can be summarized as follows:

Knowledge

General knowledge, for example history, arts and science.

Organizational and business knowledge, for example economics, management and quantitative methods.

Information technology.

Accounting and accounting related knowledge, for example financial accounting, auditing, taxation and so on.

Skills

Analytical and constructive cognitive skills, for example, accessing knowledge, understanding, application, analysis, synthesis and evaluation. These refer to the skills in Bloom's taxonomy, which are necessary for problem and task identification, information gathering and organization, analysis and interpretation (including critical, logical and independent thinking and judgment/decision making).

Technical skills, including generic skill such as literacy, numeracy and IT proficiency, as well as skills specific to accounting tasks.

Personal skills, for example initiative, influence and self-learning.

Interpersonal skills, for example oral and written communication, negotiation, leadership, team work and political acumen.

Organizational skills, for example strategic planning, project management, self-management and management of people and resources.

Professional Values

Ethical behavior, for example independence, objectivity, confidentiality and integrity.

Professional demeanor, for example due care, timeliness, courteousness, respect, responsibility and reliability.

Pursuit of excellence, for example commitment to continuous improvement and commitment to life-long learning.

Social responsibility, for example awareness and consideration of the public interest.

Appendix 7. References to Competency Studies

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Appendix 8. Acknowledgements

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