



ACIS 2007 Panel Discussion ACS BOK

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Professional Standards Board
Australian Computer Society

ICT Professionals Shaping Our Future



ACS BoK

- ◆ ACS Professional Standards Board formed January 2007
- ◆ Major responsibility is the ACS Core Body of Knowledge (CBoK)
- ◆ Review begun in April 2007 for completion in 2008



ACS BoK

The definition of a profession given by Professions Australia stresses both the possession “of special knowledge and skills in a **widely recognized body of learning** derived from **research, education and training** at a high level” as well as the possession of a **Code of Ethics**” (Professions Australia, 2007).



ACS BoK

The view compatible with the ACS charter is that a **Profession**, as opposed to a craft or a trade, requires its members to:

1. possess an underlying core body of specialized, in-depth, knowledge;
2. adhere to a code of ethics and code of conduct; and
3. engage in continuing knowledge and skills development.



ACS BoK

- To develop trustworthy, reliable ICT professionals
- To increase the ability of society to exploit ICT effectively and consistently
- To build a profession valued and respected for the contribution it makes for the benefit of all – governments, business leaders, employers, users and customers
- To build a profession that is regarded by students (both current and potential) as a valued and respected career option
- To build a profession based on a strong ICT education and research capability within the Australian education system



ACS BoK

Skills Framework for the Information Age

'SFIA' provides a common reference model for the identification of the skills needed to develop effective information systems (IS) making use of information and communications technologies (ICT). It is a simple and logical two dimensional framework consisting of areas of work on one axis and levels of responsibility on the other



- ◆ Each skill set has an associated level of autonomy and responsibility, from 1 -7 (follow, assist, apply, enable, ensure (advise), instantiate, influence, set strategy (inspire, mobilize))
- ◆ Program designers need to identify the specific skill sets their graduates will possess, particularly for their degree's depth areas, with assistance of Program Advisory Committee
- ◆ Then match these skills sets against the areas of knowledge in the program.

ACS BoK – Building Blocks



Technical and Professional Skill Sets

(e.g. as defined in SFIA)

Deep Disciplinary
Knowledge

Broad Disciplinary
Knowledge

Foundation Core ICT
Knowledge

Essential
Professional
Knowledge

Non-ICT
Domain
Knowledge

Building Blocks – for panel discussion



1. Essential Professional Knowledge
2. Foundational Common Core ICT Knowledge
3. Disciplinary Specific Knowledge (broad and deep) for Information Systems

1. Essential Professional Knowledge

- ◆ In current ACS CBOK - only mandatory requirements
- ◆ For new BoK - compare common elements across international curricula
- ◆ Use Computing Curricula 2005 (ACM, AIS, IEEE-CS)

Essential Prof. Knowledge (V1)



- ◆ Community level:
 - History of computing, philosophical frameworks ?
 - Social context of computing (privacy, risks etc)
 - Ethics & professionalism
- ◆ Organisational level
 - Organizational issues
- ◆ Team level
 - Teamwork, leadership, group dynamics
- ◆ Individual
 - Communication, interpersonal skills

2. Foundational Common Core ICT Knowledge



- ◆ At least Bloom's levels 1 – 2 ((knowledge, comprehension) required in all ICT disciplines
- ◆ Method - compare common elements across international curricula – attempt to reconcile differing terminology
- ◆ From Computing Curricula 2005 (ACM, AIS, IEEE-CS)
- ◆ Links Information Systems, Computer Science, Software Engineering, Computer Engineering, Information Technology

Common Core ICT (V1)



- ◆ IT Infrastructure/platforms (IT hardware & software, system concepts, architecture)
- ◆ Data and Information Management (data and file structures, database basics)
- ◆ Networking (networks & telecommunications)
- ◆ Programming, software design and testing (HCI?)
- ◆ Systems building (analysis and design, testing, requirements, acquisition/sourcing, integration, QA)

3. Discipline BOKs



- ◆ Prototypes/exemplars to be developed using available internationally recognized curriculum
(e.g. IS2002)
- ◆ New programs can be purpose-built – but must have rationale
- ◆ A capstone project to be mandatory

In terms of Bloom's taxonomy



- ◆ Common Core ICT Knowledge - Level 1-2 (knowledge, comprehension)
- ◆ Broad disciplinary knowledge – eg., up to Level 5 (application, analysis, synthesis)
- ◆ Deep disciplinary knowledge – up to Level 6 (evaluation)

Information Systems Prototype (V1)



Broad disciplinary knowledge (up to Level 5):

- ◆ SDLC – Analysis, design, development, testing, implementation
- ◆ Data and information management (database)
- ◆ Business processes (incl. modelling, management)
- ◆ Project management
- ◆ IS Application eg DSS, e-business, KMS,
- ◆ Others ?????? (for discussion)

Prototype I.S. (V1) (Cont.)



Deep disciplinary knowledge (to level 6, evaluation):

- ◆ Further courses in subjects on previous slide
 - Dependent on specialization in institution
 - eg., Inf sys management, BPM, e-business
- ◆ Capstone project (drawing all together)

Next Steps



- ◆ Complete next BOK Position paper – distribute to stakeholders end Dec 07 (on ACS web site)
- ◆ Working Party further develops proposal – input sought from disciplinary bodies for their “prototypes”, using their separate BOK
- ◆ Combined CS/IS/SE workshop at ACSW Jan 08, Wollongong
- ◆ Discuss at next PS Board meeting- March, 2008