Illustration of a Certification Scheme

This document is ***not*** a proposal or recommendation - merely an illustration of a possible scheme for the Certification of individuals trained in System Dynamics. It provides a context for discussion about whether, and if so, how Certification of SD practitioners might operate.

The paper should be read in conjunction with …

1. The results of the Fall-2015 survey of present and former Policy Council members, concerning the possible benefits and dis-benefits of a system dynamics Certification Scheme - Attachment 1.
2. The analysis of competence levels in SD, consistent with Bloom's taxonomy of professional capability, carried out by Martin Schaffernicht and Stefan Grösser - Attachment 2.
3. The survey of certification schemes in other professional Societies, carried out by Jürgen Strohhecker - Attachment 3.

Terminology

There is a diversity of terms commonly used in relation to professional certification. To ensure clarity, this paper defines …

Professionals … individuals devoting a significant part of their personal activity to work in the field, whether in research, teaching or practice.

Practitioners … individuals deploying the profession's methods to deal with real-world issues.

… so for clarity (not to imply relative merit!) **professional practitioners** refers to those for whom practical work represents the majority of their activity (and usually income), rather than students, teachers, or academics.

Candidates … refers to any professionals seeking any level of certification.

Professional certification (hereafter, simply "certification") … is the awarding of a certificate of competence to practising professionals in the field, usually by a society representing members of that field.

Certification levels … refers to the common practice of awarding a range of certification levels, reflecting the experience and demonstrated capability of professionals. The 6-Sigma belt system is a well-known example, but other societies recognise distinctions such as Associate and Full member, and Fellowship.

Pre-practice certification refers to the possible recognition of students who have passed an accredited program of study to the required level for the award of a defined certification level, but who have no professional experience apart from that required during their studies.

Work-product certification (hereafter, referred to explicitly as such) … is the awarding of a certificate of quality to work done, or products or services delivered by professionals in the field, also usually by a society of the field's members.

Teacher or Trainer Certification … is recognition of defined levels of skill in teaching or training others in the methods of the field.

Examination refers to the process of validating candidates' achievement of the standards required for Certification … including [a] examination by an educational

institution, for pre-practice certification, [b] by other examination of written material, set by the Society or its nominees, [c] scrutiny of candidates practical professional work output.

Accreditation … refers to the recognition of a program of study - whether degree-awarding or not - that provides successful candidates with the demonstrated capability to be granted professional certification to a defined level, with no further examination requirement.

Accreditation levels … refers to the possible recognition of programs of study that offer instruction and examination of knowledge corresponding to defined levels of certification.

Body-of-knowledge (BoK) … refers to the know-what and know-how required in order to deliver acceptable practice of the field's method, which may be broken down into increasing levels of requirement for practitioners of different levels.

Bloom's taxonomy … is a widely recognised "classification" system for levels of knowledge in a domain. The cognitive dimension is mostly commonly used, levels of which are as follows ...

Complexity	Category	Description and important verbs
Higher	Validating	Combines Creating and Evaluating: testing, measuring, judging and modifying.
	Creating	Putting elements together to form a coherent or functional whole: generalize, modify, design, hypothesize and develop.
	Evaluating	Making judgments based on criteria and standards: decide, test, measure, judge and explain.
	Analyzing	Breaking material into constituent parts, determining how the parts relate to one another and to an overall structure: explain, compare, explain, infer, classify and analyze.
Lower	Applying	Carrying out or using a procedure: being able to apply, classify, experiment, discover, use, resolve, and construct.
	Understanding	Constructing meaning from oral, written, and graphic messages (associate, interpret, and explain).
	Remembering	Retrieving, recognizing, and recalling relevant knowledge: being able to name things, give lists, definitions and examples

A **Technical Committee** for the field is a group of highly experienced professionals, tasked with establishing the field's BoK, standards of Certification and Accreditation, … and supervising the design of examinations and certification of the highest level of professional recognition.

Clients, users or sponsors refers to the organisations or individuals who ask for professional work to be done, whether practitioners in the same organisation or by 3rd-party consultants. **Influencers** refer to specific individuals who do more than request professional work - they encourage others to do so.

Work product refers to any output from professional work that purports to solve the problem or answer the question posed by clients, users or sponsors, whether in written form or software.

Auditing refers to the process of scrutinising professional work-products to assess conformance with work-product certification standards.

Although the Certification of Teachers/Trainers and Work-Product Certification are recognised to be important issues, they are not covered by this paper, which focuses on the Professional Certification of Practitioners and the Accreditation of study programs.

An Illustrative Certification scheme

Purely as a basis for discussion, consider a scheme of the following form …

- Practitioners may attain at least 2 levels of SD Certification, granted by the International Society
- Lower levels of Certification would be based on educational attainment alone [perhaps labelled “Associate …” or similar] although that attainment itself might require some demonstration of practical capability.
- Higher levels of Certification would require significant amounts of proven professional practice.
- The competence required for each level of Certification would be specified against a defined scale, consistent with Bloom’s taxonomy, and reflecting the (currently implicit) Body of Knowledge in the field.
- An embryonic Body of Knowledge, consistent with Bloom’s taxonomy has recently been produced by Martin Schaffernicht and Stefan Grosser, and should be noted in conjunction with this Illustration. The publication should soon be available in the System Dynamics Review. The paper includes extensive lists of learning objectives for each level of Bloom’s taxonomy.
- Accredited programs of SD education would be recognised after comparison of their curriculum and student assessment against the level-requirements of the body of knowledge.
- Graduates automatically qualify for Associate status on successful completion of an Accredited educational program. *Former* graduates of such programs also qualify automatically for Associate status.
- Practitioners who do not pass through Accredited educational programs are offered access to testing schemes equivalent to the assessment made by such programs.
- Post-experience Certification level[s] are offered on the basis of practical, professional work submitted to a Review body, consisting of expert practitioners.
- The scope and standards required for pre-practice Certification would be established by consultation between existing established educational programs.
- The scope and standards required for post-practice Certification would be established by consultation between organisations conducting significant volumes of professional SD-based work.

- A Technical Committee would oversee the Accreditation and Certification schemes.
- The schemes would be run by third-party organisation, under the guidance of the Technical Committee.
- There would be only a nominal charge by the Society to recipients of pre-practice Certification [since the work would already have been done by the educational programs], and a nominal annual renewal fee.
- There would be a significant charge by the Society for assessing candidates for the higher, post-practice levels of Certification, which would be carried out for a fee by existing expert practitioners.
- Renewal of post-practice Certification would require periodic submission of professional work, and also incur a charge from the Society.

Questions for consideration

Should the Certification of SD Professional Practitioners by the Society be rejected, regardless of the form such a scheme might take?

Should Certification be considered, but on a substantially different basis than this Illustration? If so, what alternative should be examined?

From what source[s] should the BoK be developed to correspond to the proposed levels of certification?

What levels pre-practice certification levels be offered? (*Masters/PhD level may be the minimum, but existing shorter programs - including undergraduate and K-12 classes - may already get students to the lower levels of competence on Bloom's taxonomy*)

What levels of post-practice certification should be offered?

Should certification levels be aligned to levels of study provided by teaching institutions?

Should Accreditation be offered to programs of study? … and to degree-awarding programs alone, or others also?

Should any certification scheme include recognition of qualitative systems thinking alone, or require coverage of quantitative, simulation modeling?

What evidence of successful experience and practice should be required of candidates seeking recognition of post-practice Certification in SD?

How should a certification scheme be managed, and by whom?

How should the costs of such a scheme be financed … and should charges be made to candidates?

How should the transition from an era of non-certification to certification be handled?

Do you have any insights or warnings to offer about the development or implementation of such a scheme from observing certification in other fields?

Attachment 1: Levels of SD competence, consistent with the Dreyfus & Dreyfus model and Bloom's Taxonomy

Terminological definitions

Competence: "Competence (1) is a physical or intellectual ability, skill or both; (2) is a performance capacity to do as well as to know; (3) is carried out under standardized conditions; (4) is judged by some level or standard of performance as […] (5) can be improved […]" (Shavelson, 2010: 44)

Competency: the internal structure of a competence is made of observable by decomposing it into constituent parts called "competency" or "skill" (Sadler, 2013: 15); we use the term "competency" to avoid intersection with "skill" in the context of Bloom's taxonomy.

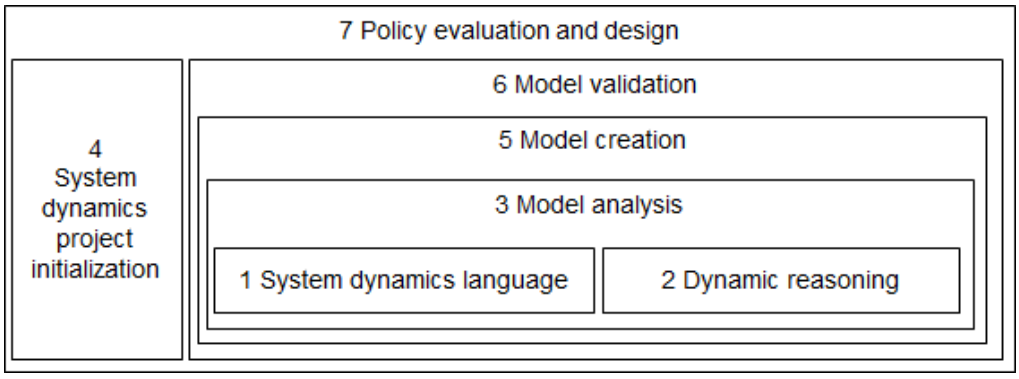
Learning outcomes: Each such competency is then decomposed into "learning outcomes", which can be directly observed for assessment (Tardif, 2004) and have been formulated using the well-established Bloom taxonomy as described in the following subsection.

Competence development levels: According to the so called Dreyfys&Dreyfus model (Dreyfus and Dreyfus, 1980; Eraut, 2000; Dall'Alba and Sandberg, 2006), there are six different stages: a *beginner* (B) proceeds to *advanced beginner* (AB), to *competent* (C), to *proficient* (P), to *expert* (E) to become a *master* (M). Formal education covers the stages *beginner* to *proficient*.

Complexity level: simpler problems are solved before more complex ones. The proposed framework distinguishes three progressive complexity levels (three feedback loops or less, up to six feedback loops; higher number of feedback loops). This is a pragmatic definition.

The system dynamics competence and its constituent competencies

A Delphi study with 15 SD masters carried out by Schaffernicht & Groesser (in revision) lead to



the formulation of seven competencies:

Lower numbers indicate lower Bloom level. Lower competencies prepare for higher ones and are contained in them.

The distribution of learning outcomes

The following table summarizes the numbers of learning outcomes for each development stage, according to the seven competencies and the three complexity levels (B: Beginner, AB: Advanced beginner, C: Competent, P: Proficient)

	Competencies	Complexity level	Competence Development Stages				# of Learning outcomes
			B	AB	C	P	
7		3			2	4	6
	Policy evaluation and design	2		2	4		6
		1		3	3		6
6	Model validation	3			7	2	9
		2		7	2		9
		1	1	7	1		9
5	Model creation	3		1	14	10	25
		2		15	10		25
		1	1	22	2		25
		n. a.		11	6		17
4		3			3	6	9
		2		4	5		9
	System dynamics project initialization	1		9			9
3	Model analysis	3			9	4	13
		2		10	3		13
		1		13			13
		n. a.		1			1
2	Dynamic reasoning	n. a.	3	9	3		15
1	System dynamics language	n. a.	10	26	10		46
Total numbers of LOs			**15**	**140**	**84**	**26**	**265**

A detailed description of the learning outcomes will readily be available in the System Dynamics Review, authors: Schaffernicht, M. and Groesser, S.N., A competence development framework for learning and teaching system dynamics, under editorial review. System Dynamics Review, 2016

References

Dall'Alba G, J Sandberg. 2006. Unveiling Professional Development: A Critical Review of Stage Models. *Review of Educational Research* **76**(3): 383–412.

Dreyfus H, S Dreyfus. 1980. A Five Stage model of the mental activities involved in directed skill acquisition. In *Unpublished report by the Air Force Office of Scientific Research [AFSC], USAF [contract F49620-79-0063]*. Berkley, University of California, Berkley.

Eraut M. 2000. Non-formal learning and tacit knowledge in professional work. *British Journal of Educational Psychology* **70**(2): 113–136.

Sadler R. 2013. Making competent judgments of competence. In Blömeke S., O. Zlatkin-Troitschanskaia, et al. (eds.), *Modeling and Measuring Competencies in Higher Education: Tasks and Challenges*. Springer, Frankfurt, pp. 13-28.

Schaffernicht, M., Groesser, S.N. under editorial review. System Dynamics ReviewXXX

Shavelson RJ. 2010. *On the measurement of competency*. Empirical research in vocational education and training 2(1): 41-63.

Tardif J. 2004. A compulsory stage in the planning of competency assessment: identification of progressive and final development indicators. *Pédagogie Collégiale* **18**(1): 1-7.

Attachment 2: Findings from our survey of Policy Council members' [present and former] views

Survey with the intention to gather feelings about pro's and con's for a certification/accreditation scheme, and any key insights from experience of other schemes conducted in October/November 2015

Number of responses: 32

What benefits do you see arising from a professional certification scheme for the following groups?

Groups	none, not many	negative	good, many significant	better	good for clients/help employers	clearer idea of what they need to know
			capability, development, achievement, work, skills, quality, thinking, modeling, training, image	job/career/future prospects	good for clients/help employers	clearer idea of what they need to know
Early-stage students (K-12/undergrad)	**20**		**4**	**3**		
Late-stage students (Masters/PhD)	**16**		**10**	**4**		
Prospective professional practitioners (consultants etc)	**6**	**1**	**13**	**4**	**8**	**6**
Academics	**16**	**1**	**9**			
Early-stage professional practitioners	**6**	**2**	**15**	**3**	**5**	**6**

Experienced professional practitioners	**9**	**4**	**15**		**5**	**4**
Employers of SD professionals	**11**	**1**	**6**		**11**	
Clients, buyers or users of system dynamics work	**10**	**1**	**14**			
The International SD Society as an entity	**10**	**3**	**8**			
Members of the International SD Society	**6**	**4**	**8**			
Independent SD trainers	**4**		**16**			
[Other-A : specify]...			**2**			

What benefits do you see arising from a professional certification scheme for the following groups?

Groups	depends on... e.g. career aims, name recognition of SD	indirect profit (e.g. (SD-)teachers, school system...)	more confi-dence	money, revenue	reputation, image	influence on member (ship)	depends on the above classes/jobs
Early-stage students (K-12/undergrad)		**5**					
Late-stage students (Masters/PhD)	**2**						
Prospective professional							

practitioners (consultants etc)							
Academics							
Early-stage professional practitioners							
Experienced professional practitioners							
Employers of SD professionals							
Clients, buyers or users of system dynamics work			**4**				
The International SD Society as an entity				**5**	**5**	**3**	
Members of the International SD Society					**7**		**6**
Independent SD trainers					**3**		
[Other-A : specify]...							

What dis-benefits, problems or challenges do you see arising from a professional certification scheme for the following groups?

Groups	none/not many	cost, waste of time (and reputation), bureaucracy	barrier, restriction, filter	too many certifications, (confusion), competence more important	big disadvan-tages (experienced people)	teaching for exam, not for content
Early-stage students (K-12/undergrad)	7	4	3	3		
Late-stage students (Masters/PhD)	4	7	3	3		2
Prospective professional practitioners (consultants etc)	5	4	6	3		
Academics	3	7	5	3		1
Early-stage professional practitioners	4	6	6	2		
Experienced professional practitioners	5	4	4	2	5	
Employers of SD professionals	6	6		4		
Clients, buyers or users of system dynamics work	6	2		6		
The International SD Society as an entity	1	12	3	1		
Members of the International SD Society	6	5	4	2		

Independent SD trainers	**7**	**6**	**1**	**2**		
[Other-A : specify]...		**2**				

Attachment 3: Certification Schemes in other selected Societies

The Profession (Common title) Systems Engineer

Estimated world-wide practitioners: …... *unknown.*

Main Professional Society : International Council on Systems Engineering

Members: 9,422 (Dec 2013)

Growth: http://www.incose.org/about/index.aspx

Certification

http://www.incose.org/educationcareers/certification/index.aspx

http://www.incose.org/educationcareers/doc/Certification_Overview.pdf

Certifying body: (if not the Society): … Number of levels: 3

Level 1 : Associate Systems Engineering Professional (Entry Level)

Degree-type required? *Title or 'none'*: just started (or plan to start) practicing SE, junior systems engineers, recent college graduates, also none

Other study or examination required? *Title or 'none'*: none

Years of practice required: limited SE work experience, recent college graduates Other evidence of competence required: none

Initial cost: Application $150, Examination US: $80 Other: $120, Renewal $100 Annual cost: Regular membership $145/year

Estimated number of certified people: *Order of magnitude…*

Level 2 : Certified Systems Engineering Professional (Foundation Level)

Degree-type required? *Title or 'none'*: Technical Bachelor's degree (or international equivalent) or Master or Doctorate degree (or international equivalent) in related fields; non-technical Bachelor's degree in case of a minimum of 10 years of general engineering experience (with at least 5 in SE); no Bachelor's degree in case of a minimum of 15 years of general engineering experience (with at least 5 in SE)

Other study or examination required? *Title or 'none'*: Minimum of at least 1 year of professional level experience in each of 3 or more of the 14 SE functional areas; recommendations from at least 3 colleagues

Years of practice required: ≥ 5 Other evidence of competence required: 3-5 work-related references

Initial cost: Application $400, Examination US: $80 Other: $120, Renewal $150; in case of a membership Application $300, Renewal $100 Annual cost: membership not required

Estimated number of certified people: *Order of magnitude…*

Level 3 : Expert Systems Engineering Professional (Senior Level)

Degree-type required? *Title or 'none'*: Technical Bachelor's degree (or international equivalent) or Master or Doctorate degree (or international equivalent) in related fields; non-technical Bachelor's

degree in case of a minimum of 25 years of general engineering experience (with at least 20 in SE) with Level 2, 30 (25) years without Level 2; no Bachelor's degree in case of a minimum of 30 years of general engineering experience (with at least 20 in SE) with Level 2, 35 (25) years without Level 2

Other study or examination required? *Title or 'none'*: Minimum of at least 2 years of professional level experience in each of 6 or more of the 14 SE functional areas; recommendations from at least 3 colleagues; minimum of 5 years of professional leadership

Years of practice required: ≥ 10 Other evidence of competence required: 3-5 work-related references, interviews to validate leadership

Initial cost: Application $550 Annual cost: Regular membership $145/year

Estimated number of certified people: *Order of magnitude…*

Body of knowledge

Is there a defined Body of Knowledge? : INCOSE SE Handbook Link: Free download available to members

How the certification program started

Level 1 since 2008, Level 2 since 2004, Level 3 since 2010

Other remarks

- You can enter at whatever level is appropriate + seamlessly transition between levels
  - Level 1+2: exam based on the INCOSE SE Handbook
  - Certification Level 1 valid for 5 years, Level 2: 3 years, Level 3: indefinite
  - For Level 1+3 an INCOSE membership is required

The Profession (Common title) Chartered Financial Analyst

Estimated world-wide practitioners: …... *unknown.*

Main Professional Society : CFA Institute

Members: 127,756 Growth: see charts in http://www.cfainstitute.org/Timeline%20Documents/aimr_history_brochure.pdf

Certification

http://www.cfainstitute.org/programs/comparison/Pages/index.aspx

http://www.cfainstitute.org/programs/comparison/Documents/which_program_is_right_factsheet.pdf

http://www.cfainstitute.org/programs/cfaprogram/Pages/index.aspx

Certifying body: (if not the Society): … Number of levels: 3 (3 exams); other programs

Level 1 : CFA

Degree-type required? *Title or 'none'*: Bachelor's degree (or equivalent) or be in the final year of Bachelor's degree program or 4 years professional work experience or combination of professional work and university experience that totals at least 4 years

Other study or examination required? *Title or 'none'*: none

Years of practice required: 0-4 Other evidence of competence required: Professional Conduct Statement, Code of Ethics, Candidate Responsibility Statement, education information etc.

Initial cost: Enrollment $450, exam registration $825 Annual cost: $275/year

Estimated number of certified people: >115,000 (CFA); because of the number of tested candidates in conjunction with the failure rates, the number of certified people should be higher.

Level 2 : CFA, see above

Degree-type required? *Title or 'none'*:

Other study or examination required? *Title or 'none'*:

Years of practice required: … Other evidence of competence required: ...

Initial cost: … Annual cost: … *US$ equivalent*

Estimated number of certified people: *Order of magnitude…*

Level 3 : CFA, see above

Degree-type required? *Title or 'none'*:

Other study or examination required? *Title or 'none'*:

Years of practice required: … Other evidence of competence required: ...

Initial cost: … Annual cost: … *US$ equivalent*

Estimated number of certified people: *Order of magnitude…*

Body of knowledge

Is there a defined Body of Knowledge? : Standards of Practice Handbook; Examples of exam questions, exam structure, topics and study session outlines

Link: http://www.cfapubs.org/toc/ccb/2014/2014/4
http://www.cfainstitute.org/programs/cfaprogram/exams/Pages/index.aspx

How the certification program started

at least since 2000

http://www.cfainstitute.org/Timeline%20Documents/aimr_history_brochure.pdf

http://www.cfainstitute.org/about/governance/history/Pages/index.aspx -> Timeline

Other remarks

- Professional experience may be accrued before, during, or after participation in the CFA exams
- Membership is required

The Profession (Common title) Supply Manager

Estimated world-wide practitioners: …... *unknown.*

Main Professional Society : Institute for Supply Management

Members: >40,000 Growth: …. *Estimated % per year*

Certification

http://www.ism.ws/Files/Certification/CPSMBreakThroughBrochure.pdf

Certifying body: (if not the Society): … Number of levels: 3 exams; other program

Level 1 : Certified Professional in Supply Management

Degree-type required? *Title or 'none'*: Three years of full-time, professional supply management experi-ence (nonclerical, nonsupport) with a bachelor's degree from regionally accredited institution or international equivalent or five years of full-time, professional supply management experi-ence (noncl., nons.) without a qualified bachelor's degree

Other study or examination required? *Title or 'none'*: none

Years of practice required: 3-5 Other evidence of competence required: Work exp. evaluation

Initial cost: Work experience evaluation $25, exam $325 (incl. 1 year membership), for member $199 Annual cost: membership is not required but recommended because of significant savings in study materials; $190/year, regional differences, different memberships, academicians in part for free

Estimated number of certified people: *Order of magnitude…*

Level 2 : Certified Professional in Supply Management, see above

Degree-type required? *Title or 'none'*:

Other study or examination required? *Title or 'none'*:

Years of practice required: … Other evidence of competence required: ...

Initial cost: … Annual cost: … *US$ equivalent*

Estimated number of certified people: *Order of magnitude…*

Level 3 : Certified Professional in Supply Management, see above

Degree-type required? *Title or 'none'*:

Other study or examination required? *Title or 'none'*:

Years of practice required: … Other evidence of competence required: ...

Initial cost: … Annual cost: … *US$ equivalent*

Estimated number of certified people: *Order of magnitude…*

Body of knowledge

Is there a defined Body of Knowledge? : Study Guide, Diagnostic Kit, supplemental reading list, review courses, ISM Professional Series, Glossary of Key Supply Management Terms; all not for free

Link: http://www.ism.ws/Files/Certification/CPSMBreakThroughBrochure.pdf same link as above, p. 7-10

How the certification program started

Mai 2008

Other remarks

- membership is not required

The Profession (Common title) Accountant

Estimated world-wide practitioners: …... *unknown.*

Main Professional Society : The Institute of Financial Operations

Members: a community of nearly 70,000, which includes 9,000 members and customers, and an additional 61,000 financial operations professionals Growth: …. *Estimated % per year*

Certification

http://www.financialops.org/web/certification/qualifications

Certifying body: (if not the Society): … Number of levels: 2

Level 1 : Certified Accounts Payable Associate (CAPA)

Degree-type required? *Title or 'none'*: Experience: 1 year or more with an Associate or higher degree or 3 or more years with no degree

Other study or examination required? *Title or 'none'*: none

Years of practice required: 1 Other evidence of competence required: Code of Ethics

Initial cost: Qualification $25 member/$50 non-member, exam ($175/$275)

Annual cost: $265/year, different memberships with savings in fees and manuals

Estimated number of certified people: *Order of magnitude…*

Level 2 : Certified Accounts Payable Professional (CAPP)

Degree-type required? *Title or 'none'*: Management/Professional Experience: 2 or more years with a Bachelor or higher degree or 3 or more years with an Associate degree or 5 or more years with no degree

Other study or examination required? *Title or 'none'*: none

Years of practice required: 2 Other evidence of competence required: Code of Ethics

Initial cost: Qualification $25 member/$50 non-member, exam ($275/$375)

Annual cost: $265/year, different memberships with savings in fees and manuals

Estimated number of certified people: *Order of magnitude…*

Level 3 :

Degree-type required? *Title or 'none'*:

Other study or examination required? *Title or 'none'*:

Years of practice required: … Other evidence of competence required: ...

Initial cost: … Annual cost: … *US$ equivalent*

Estimated number of certified people: *Order of magnitude…*

Body of knowledge

Is there a defined Body of Knowledge? : CAPA/CAPP Manual ($89/$129)/($130/$200)

Link: https://netforum.avectra.com/eweb/shopping/shopping.aspx?site=ifo&cart=0&shopsearch=Certification&shopsearchCat=Merchandise&productCat=Books&

How the certification program started

...

Other remarks

...

The Profession (Common title) Business Analyst

Estimated world-wide practitioners: …... *unknown.*

Main Professional Society : International Institute of Business Analysis

Members: 27,000 Growth: …. *Estimated % per year*

Certification

http://www.iiba.org/Certification-Recognition/CCBA-Certification.aspx -> Handbook

http://www.iiba.org/Certification-Recognition/CBAP-Designation.aspx -> Handbook

Certifying body: (if not the Society): … Number of levels: 2

Level 1 : Certification of Competency in Business Analysis (CCBA)

Degree-type required? *Title or 'none'*: Minimum high school education or equivalent

Other study or examination required? *Title or 'none'*: Minimum 3,750 hours of business analysis work experience aligned with the *BABOK (Business Analysis Body of Knowledge) Guide* in the last seven years, Minimum 900 hours in two of the six knowledge areas or 500 hours in four of the six knowledge areas, Minimum 21 hours of Professional Development in the past four years

Years of practice required: 3,750 h = ca. 2 years in 7 years

Other evidence of competence required: Two references from a career manager, client or Certified Business Analysis Professional (CBAP) recipient, Signed Code of Conduct

Initial cost: Application $125 member/$125 non-member, exam $325/$450, exam cancellation $50/$50, exam re-write $250/$375 Annual cost: $55-$125, depends on region, membership not required

Estimated number of certified people: >570

Level 2 : Certified Business Analysis Professional (CBAP)

Degree-type required? *Title or 'none'*: Minimum high school education or equivalent

Other study or examination required? *Title or 'none'*: Minimum 7,500 hours of BA work experience aligned with the *BABOK Guide* in the last 10 years, Minimum 900 hours in four of the six knowledge areas, Minimum 21 hours of Professional Development in the past four years

Years of practice required: 7,500 h = ca. 4 years in 10 years Other evidence of competence required: Two references from a career manager, client or Certified Business Analysis Professional (CBAP) recipient, Signed Code of Conduct

Initial cost: see Level 1, partially higher in some regions Annual cost: see Level 1

Estimated number of certified people: >4,100

Level 3 :

Degree-type required? *Title or 'none'*:

Other study or examination required? *Title or 'none'*:

Years of practice required: … Other evidence of competence required: ...

Initial cost: … Annual cost: … *US$ equivalent*

Estimated number of certified people: *Order of magnitude…*

Body of knowledge

Is there a defined Body of Knowledge? : *BABOK (Business Analysis Body of Knowledge) Guide*

Link: http://www.iiba.org/babok-guide/babok-guide-online.aspx

How the certification program started

IIBA was found in 2004

Other remarks

- There will be no reduction in work experience for post secondary education