

Growing Our Industry: Cultivating Testing Regulating the Profession

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Why horticulture?

- I went to take some classes, and ended up taking a qualification course...
- What did I learn?
 - **Preparation:** When you think you have prepared enough, it is time to do another couple of days prep
 - **Process and technique:** There is a proper way to do things
 - **Fun and hard work:** Just because you enjoy it doesn't mean you are an expert; tedious tasks have to be done
 - **Skills:** Speed, accuracy and precision are needed as well as functional skills.

Horticulture

8000 years of a complex industry

- Horticultural practice has changed and developed
- Positive and negative effects of development
- Horticulture is not a simple, rural pursuit
- Horticulture is a force for change (good and bad)
- Horticulture itself changes
 - the problems (how do I grow apples successfully?) may sometimes stay the same
 - the solutions (through plant breeding, plant propagation, feeding, pest control, pruning techniques) will change
 - new plants / methods trialled, tested, promulgated through the industry.

Software Testing – (2)50 years?

When did we start?

Jerry Weinberg and Project Mercury?

Alan Turing and the Enigma Machine?

Ada, Lady Lovelace, the world's first programmer (and tester)?

- **Testing practice has changed and developed**
- **Positive and negative effects of IT & testing**
- **Testing is not a simple pursuit**
- **IT & Testing are forces for change – both good and bad**

- **Testing itself changes**
 - the problems sometimes may stay the same (*is this software ready to use?*)
 - the solutions will change; new tools / methods have to be trialled, tested, promulgated through the industry.

Gardeners or Horticulturalists?

- If we are amateurs we get away with things...
- As our industry grows in maturity we need to become a profession
- We can learn from other, more established professions like horticulture

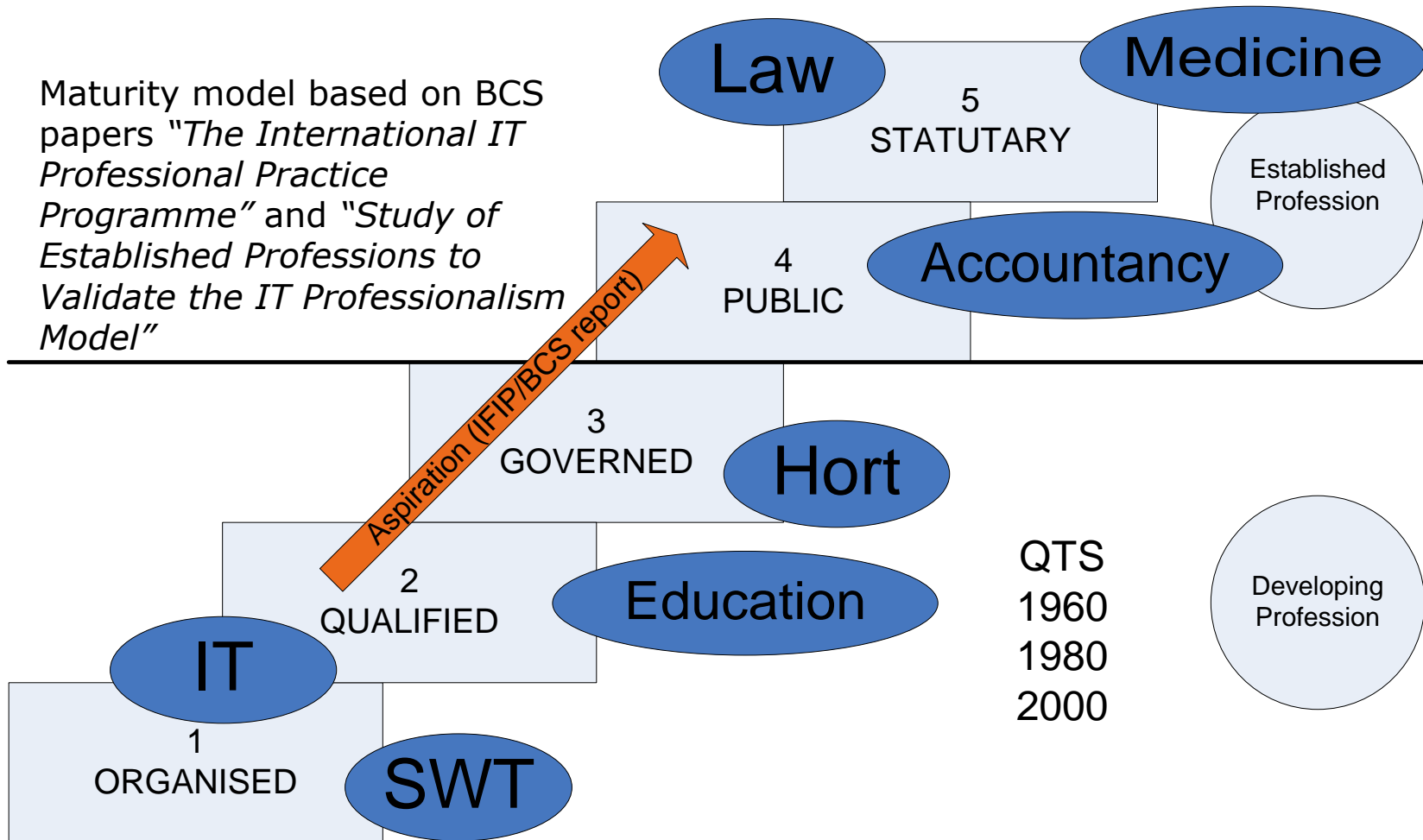
- What are you?
 - Amateur?
 - Craftsman?
 - Engineer?
 - Professional?

Nine rules for a profession (Benson)

- Governing body
- High qualification level (entry level standards of education and continuous professional development)
- Ethical rules and professional standards (higher than those set by law)
- Rules/standards benefit the public not the practitioners
- Disciplinary action (expulsion for bad professional work / breaking standards)
- Use of statute to protect the public good
- Fair and open competition
- Independence of thought and outlook
- A profession gives leadership to the public.

A route map to professional recognition

Maturity model based on BCS papers "The International IT Professional Practice Programme" and "Study of Established Professions to Validate the IT Professionalism Model"



Horticulture level added by Dave Feaver of Pershore College of Horticulture
Software Testing level added by the author.

Horticulture shows us that standards are necessary and that they change

- “*chestnuts roasting by an open fire*”
- Problem:
 - Sweet Chestnut
 - Spanish Chestnut
 - Castanheiro
 - Edel-Kastanienbaum
 - Horse Chestnut
 - Akta Kastanj
 - Marrionier
- Solution:
 - *Castanea sativa*
 - *Aesculus hippocastanum*
- Carolus Linnaeus (Carl Von Linne) 1707-1778.

Horticulture shows us that Continuous Professional Development (CPD) is necessary

- Professions change continuously
- Professionals undertake CPD
- Qualification routes allow for changing “right answers”!

Horticulture shows us that as customer expectations grow we need increased evidence of competence



- **As a profession grows, expectations grow**
 - Are we fit to practice?
 - Evidence of competence?
 - Changes to qualification evidence supported by the **GRANDFATHER RULE**
- **Positive publicity**
 - Competitions and awards
 - *Already happening within testing*
 - *Need to spread evidence of our success across IT and to the general public*
- **Virtuous circle**
 - We'll get the funding when we are seen to be worth it.

Horticulture shows us that as a profession grows it increases qualification for entry

- Unregulated industries - no entry criteria for practicing
- For a profession:
 - Educational level
 - Specific training
 - Experience gained during qualification period
- Not just certification as it presently exists.
 - Let us look at horticulture to see why...

	This is one example of a Horticulture scheme.	
Not professional	RHS General	Course approx 20 weeks (day per week), 50% practical plus own study/work written exam
Building professional skills	Individual module from RHS Advanced	each approx 6 months at 1 day per week, 50% practical, From now on includes science, practice, commercial, legal aspects
Not professional but part of a professional qualification	RHS Advanced	2 years part time (day / week) plus own study and work 3 written exams covering the modules practical exam
Junior professional	RHS Diploma	another 2 years part time (day / week) plus own study and work 3 written exams practical exam
Professional	RHS Master of Hort.	3-5 years study plus work 4 written papers management case study and oral exam, dissertation and oral exam

Where are we in 2009? What is an acceptable level of education for a professional versus a craftsman versus a tradesman? **Where should we be?**

Horticulture shows us that there can be many ways to get qualified, and that craft is needed as well as professional

- National and international qualifications
- Kew or Wisley Diploma (1 or 2 years full time)
 - Elite: small numbers at centre of excellence
 - Mix of practical and academic assessment
- City and Guilds certificates (1 or 2 years part time)
 - Vocational / craft: large numbers, practical, continuous assessment, day release
- Degrees and Masters (3 to 5 years full time)
 - Management / professional, large numbers
 - Academic plus practical: examinations, dissertations, oral exam, course work
- RHS schemes (previous slide)

Horticulture shows us that it takes time to be taken seriously

- “... frequently directed to... more glamorous... careers....”
- “increase professionalism ... among those who practise... ”
- “lack of systematic, practical training...”
- “...wide range of solid practical skills ... need a recognised standard ... understood by employers”
- “...sadly ... elevated to a profession ... diplomas ... academic ... rather than a craft practiced with hard won experience at the fingertips...”
- “...spent 2 years studying ... set up my own business ... my clientele would not recognise my skills or knowledge and saw me as “just a gardener” then quibbled over the price...”

Horticulture shows us the importance of career progression and options

- Horticultural science & research
- Horticultural engineer - R&D
- Teaching
- Horticultural supply: sales, marketing, manufacture, growing
- Amenity horticulture:
 - landscape architecture, construction, maintenance
- Horticultural management: commercial, garden centre
 - All levels of management from supervisor to director
- Regulation, testing & inspection
 - seed testing, environmental health, health and safety
 - pest and fertilizer inspector, controls
 - government work (inspection, regulation)
- Journalist, broadcaster, TV pundit, author.

Trade, craft and professional career routes
Supported by qualification schemes
As options in schools' careers leaflets
CPD mentoring organised through the IoH

Getting qualified – Skills Framework for the Information Age (SFIA)

- 7 set strategy, inspire and mobilise
- 6 initiate and influence
- 5 ensure and advise
- 4 enable
- 3 apply
- 2 assist
- 1 follow

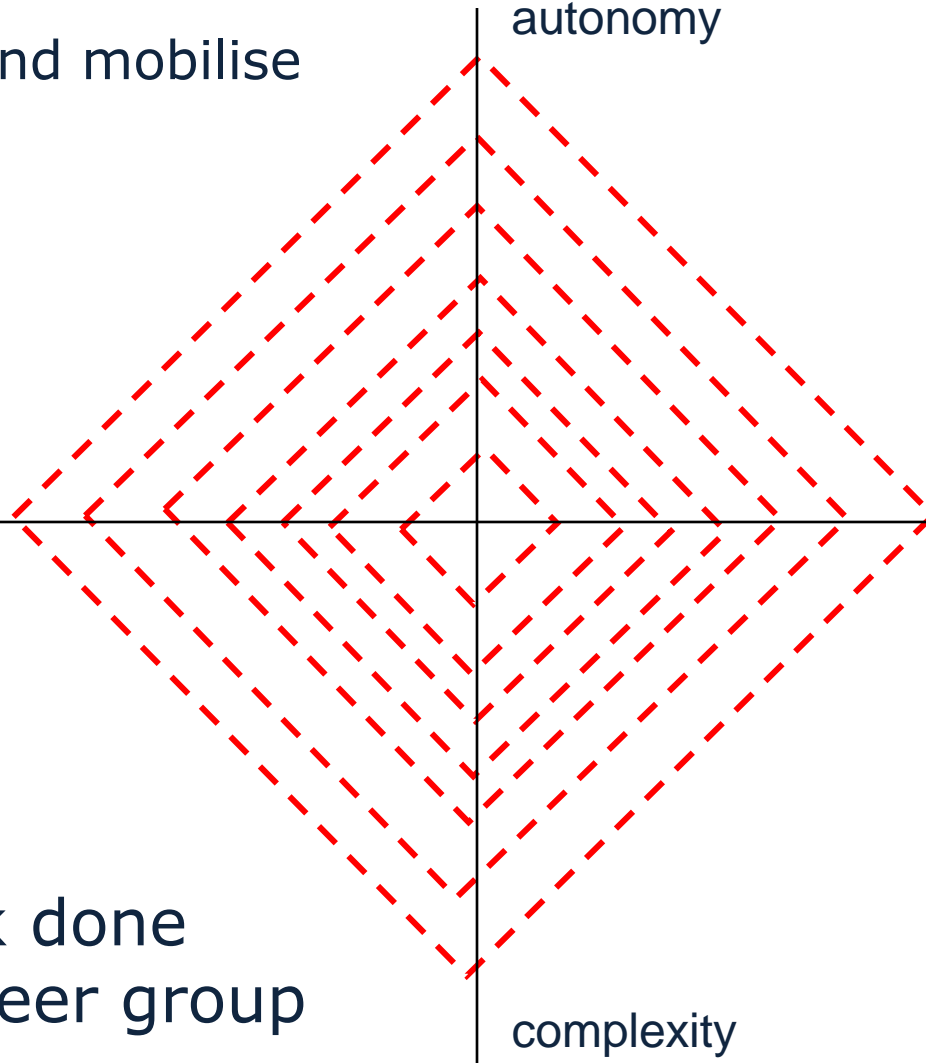
business skills

autonomy

influence

- **Education** courses
- Evidence from work done
- Acclamation from peer group
- Public recognition

complexity



In all the horticulture qualifications, theory and practice are required

- Know the scientific reasons why things done is a particular way
- Give practical examples to show theory at work
- Carry out tasks
 - in the field
 - in the greenhouse
 - in the potting shed
 - in the laboratory.

In all horticultural practice, risk is considered

In all the horticulture practice and teaching...

- Knowledge of legislation and regulation
- Social concerns must be addressed
- Health and safety
- Environment
- Practices can be beneficial and dangerous at the same time e.g. pesticides, herbicides.

Risk assessment as part of all practice...

- Health and safety
- Efficient and effective working practice
- Commercial considerations
- Inside and outside our control.

Serving society – a special set of risks: A true professional contextualises work

- ... professionalism is very important ... you need to think about the context / motivation / justifications of what you're doing...
- ID cards: 'an opportunity to do a good software job' but has **fundamental effect on people's lives**
- (if I) only think about what the spec is and whether I can do a good job of it ... **I could probably write a very good program for choosing people to be killed** for some reason, selecting people from a population by a particular criterion.
- A true professional would say, '**I don't think I should be writing programs about this at all.**'

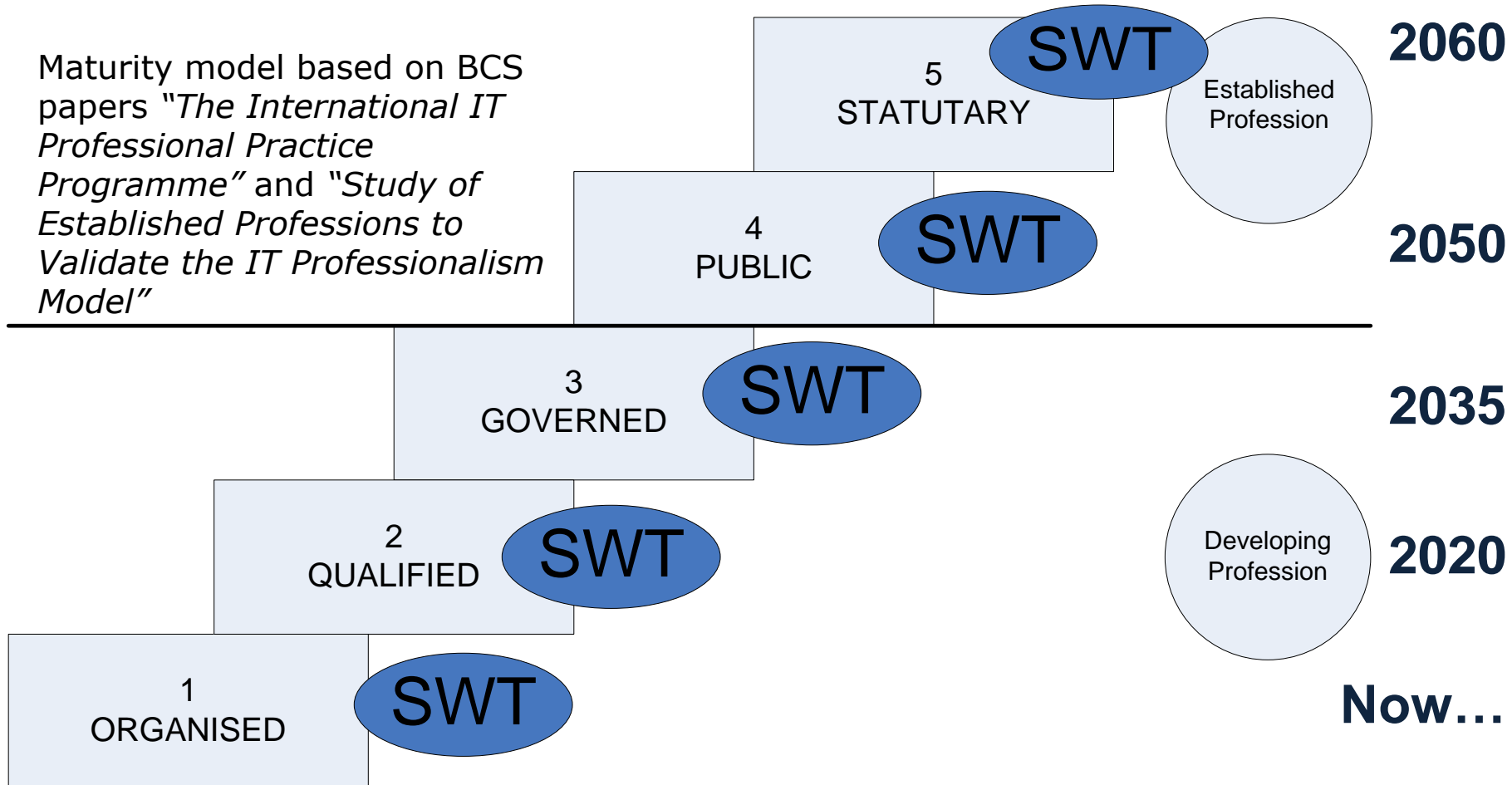


Risk can be contained by imposed or self regulation (codes of practice and conduct)

1. Do no harm and keep others from harm
2. Take action to benefit others through software testing
3. Respect and help others
4. Take no actions to bring software testing into disrepute
5. Always take the best action working within my abilities
6. Provide information to improve software qualities
7. Keep confidentiality unless doing so will cause harm
8. Behave with rectitude and decorum in my professional life
9. Improve my own professional skills and competencies
 - And work for enhancements to software testing
10. Take personal responsibility for my own actions
 - And for those of people who I supervise.

What is our goal? And when by?

Maturity model based on BCS papers "*The International IT Professional Practice Programme*" and "*Study of Established Professions to Validate the IT Professionalism Model*"



**We have a legacy
to hand on to our successors...**



2060?

Industry's 100th birthday?

When?

**“A profession giving leadership to
the public it serves”**

Thank you for listening!