

Sixth World Congress for Software Quality
London, July 1-3, 2014

Do You Think You Know What Software Quality Is?

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- Contents
1. How did it all start
 2. What did I learn as QM first
 3. Quality conference as tower of Babel
 4. Some examples of qualitysh
 5. Survival as QM
 6. A kind of conclusion

How did it all start?



How did it all start?



I learned in the first meeting of quality managers...

Quality

the characteristics of a product or service that bear on its ability to satisfy stated or implied needs (ISO 8402)

or

the degree to which a set of inherent characteristics fulfils requirements (ISO 9001)

or

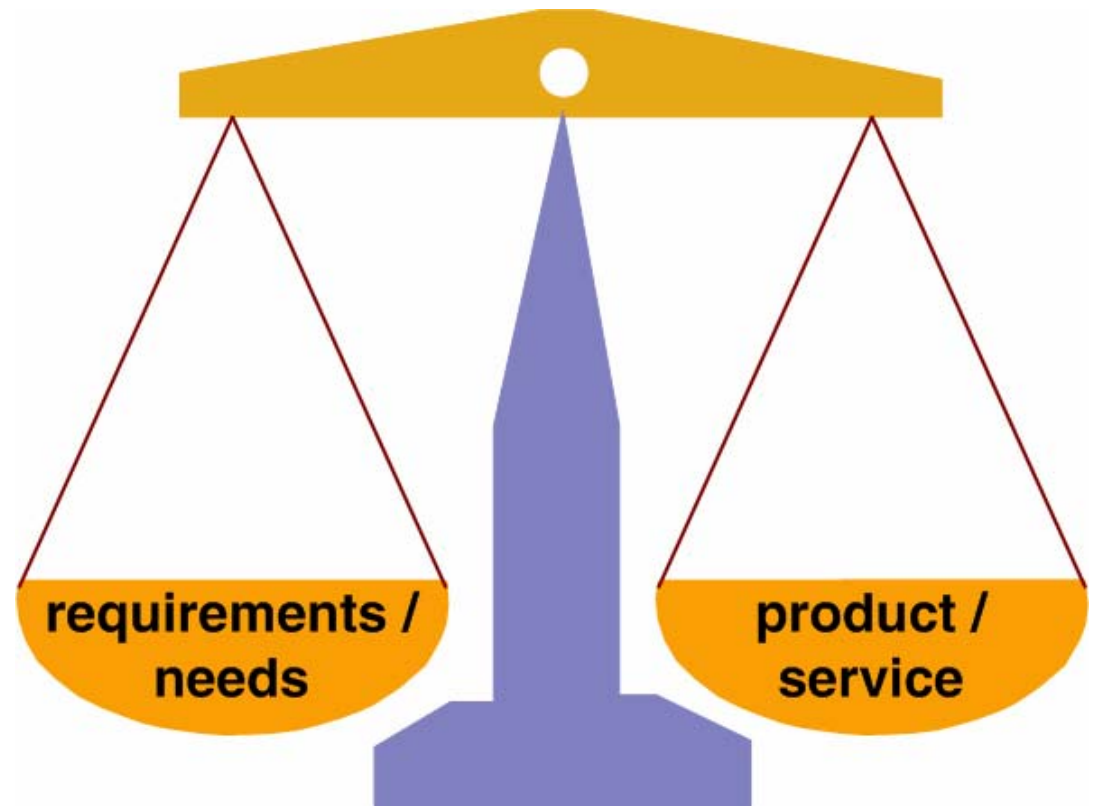
the degree to which a product or service is free of deficiencies

or

fitness for use (Joseph Juran)

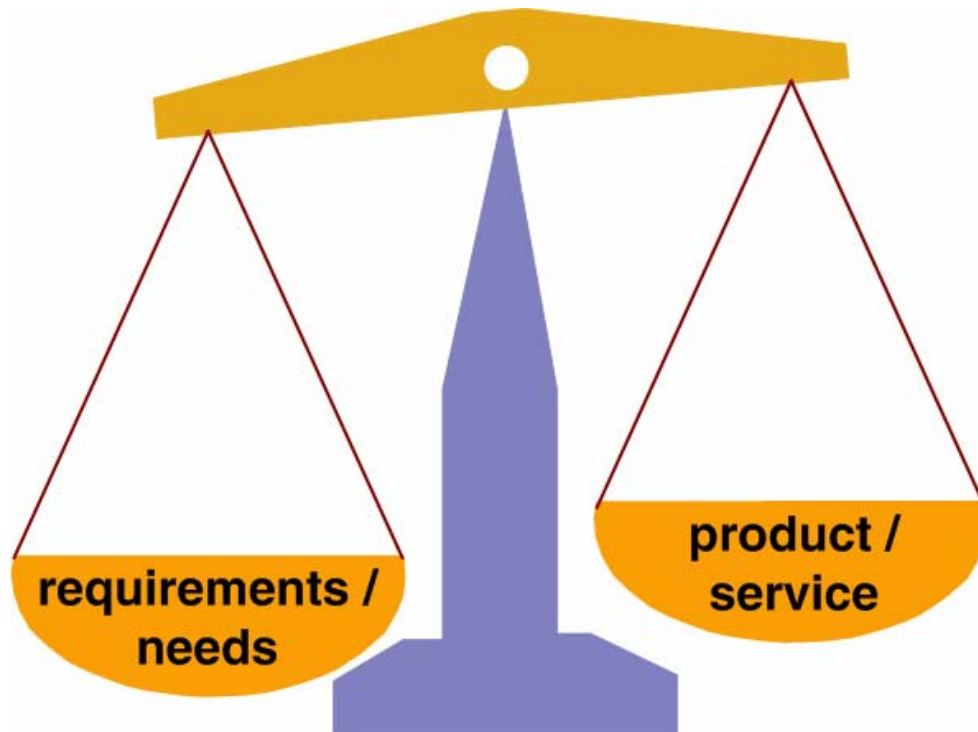
or

conformance to requirements (Philip Crosby)

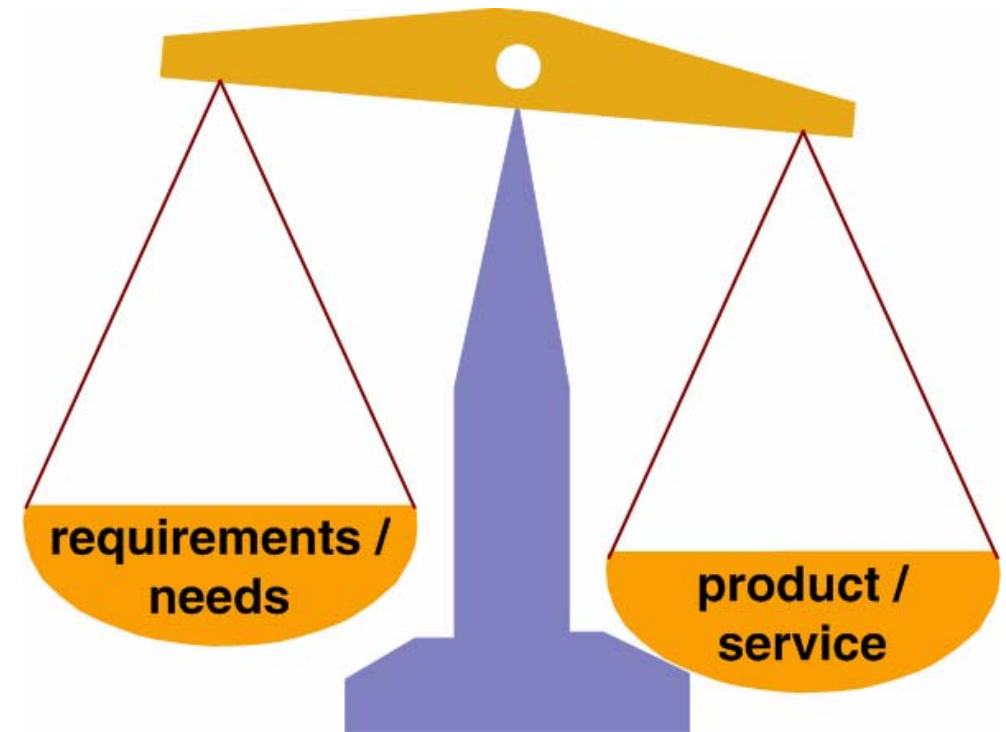


Quality Balance

I learned in the first meeting of quality managers...

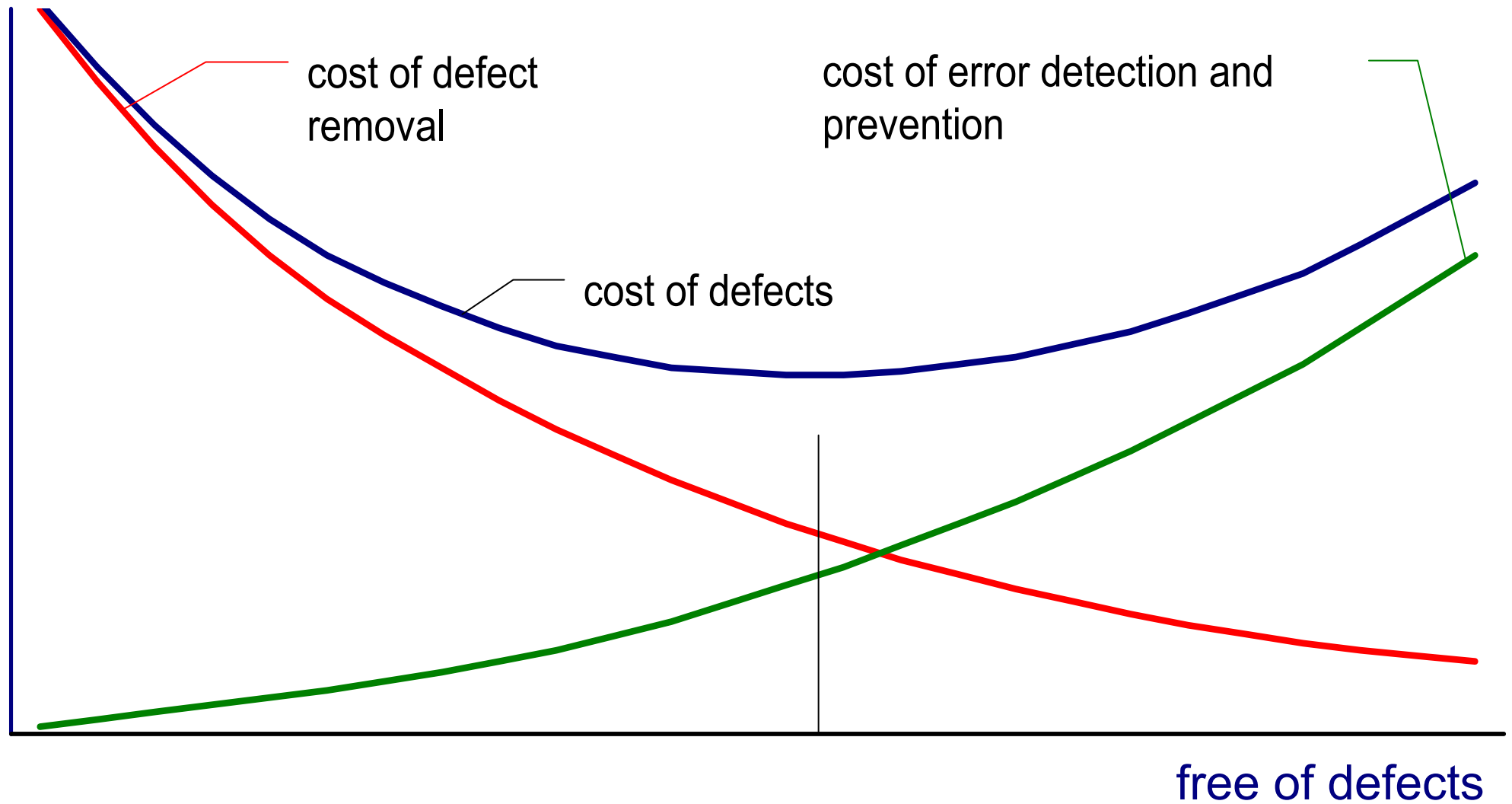


deviation from quality

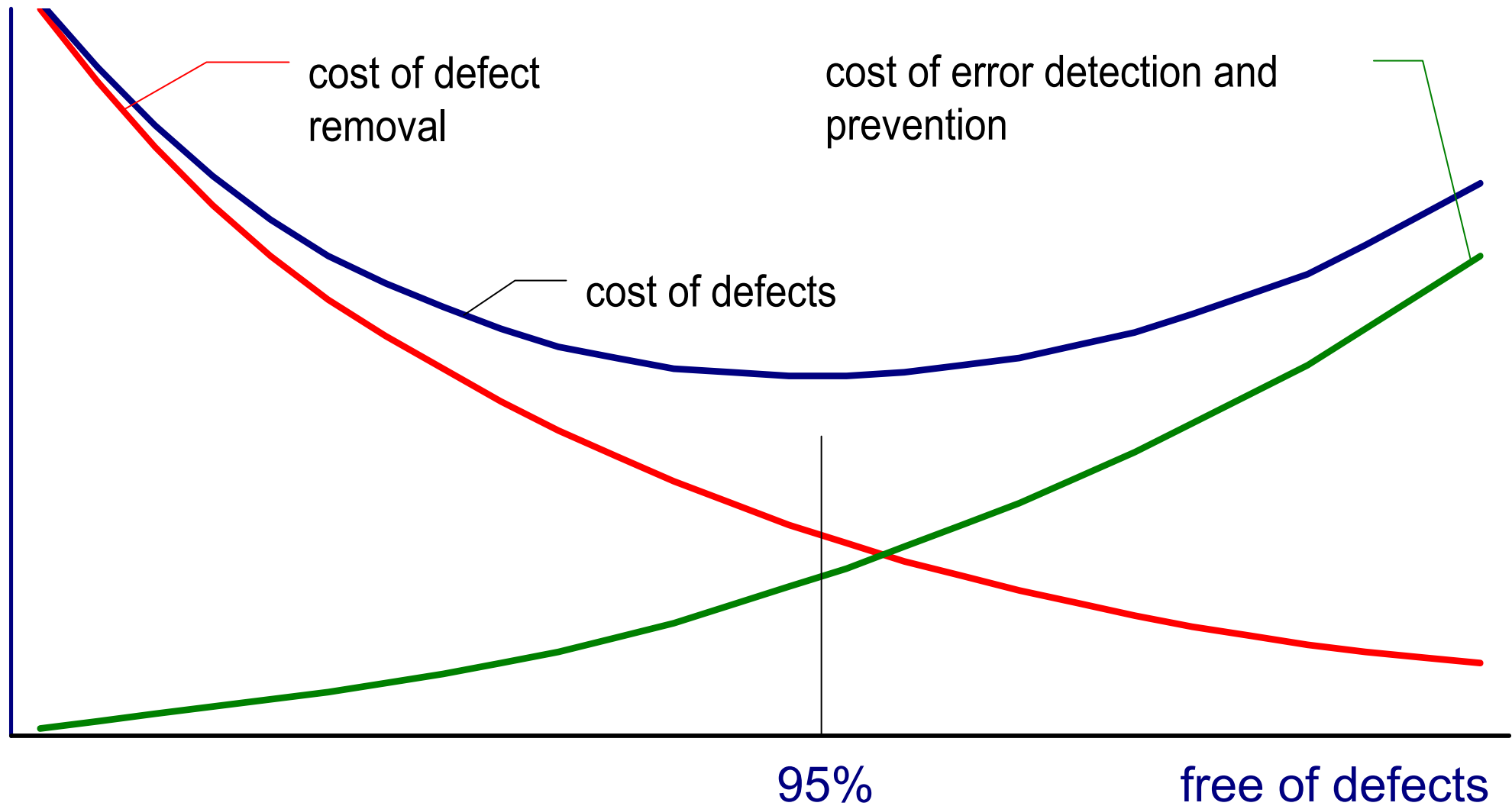


deviation from quality

What did I learn next?



What did I learn next?



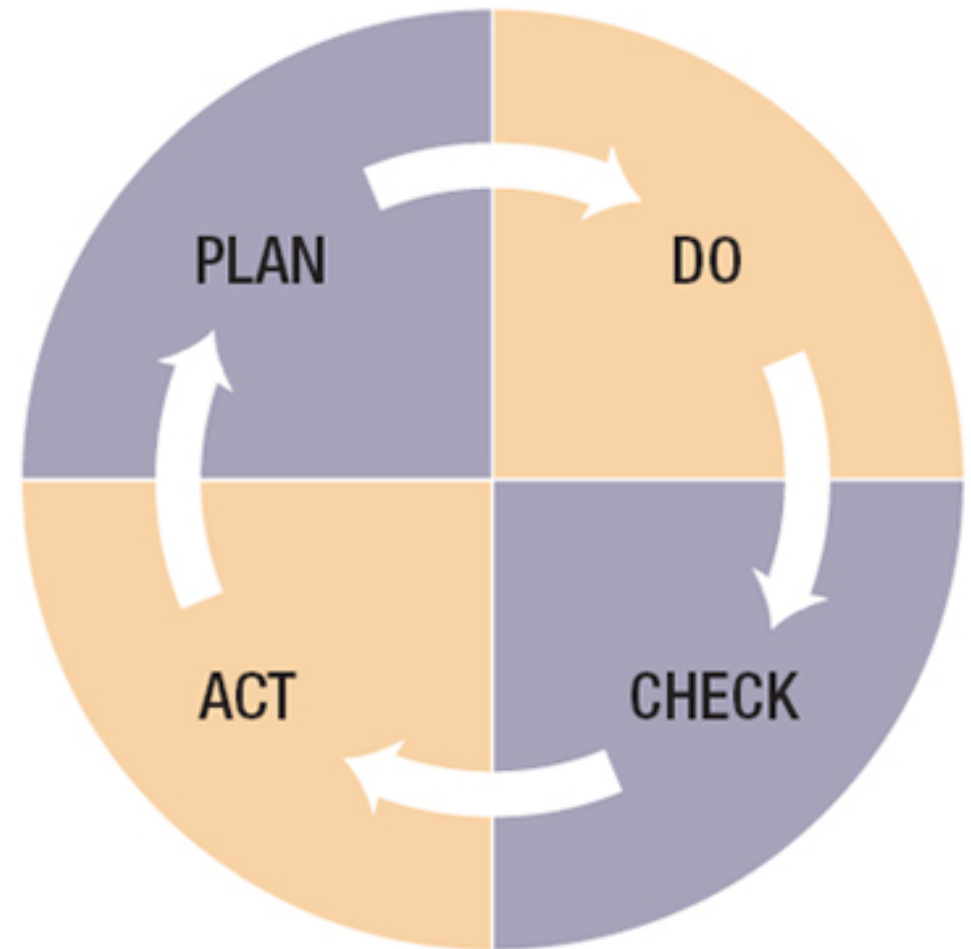
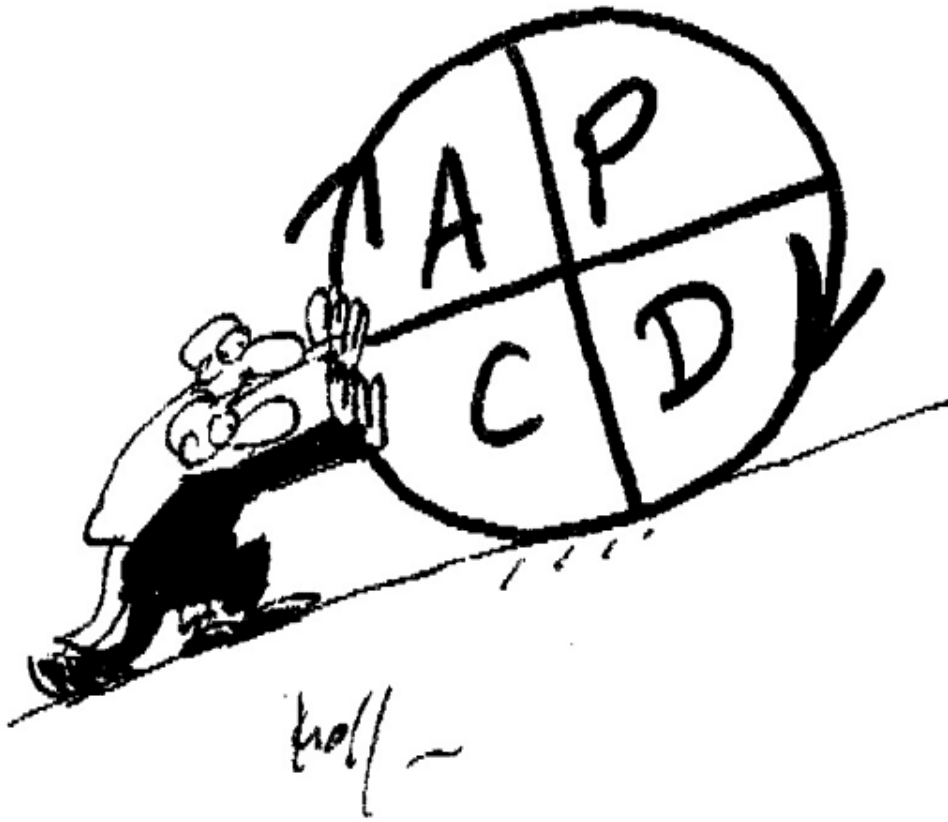
What did I do after I did learn that?



What did I do after I did learn that?



I learned in the second meeting of quality managers...



Basis for Learning

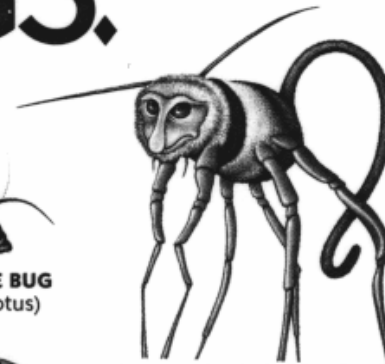
KNOW YOUR BUGS.



PYGMY JUMPING SPIKE FLY
(rapiditis bombus)



HUMPBACK SURGE BUG
(destructus abruptus)



DANCING VOLTAGE MONKEY ROACH
(disci dumpi)



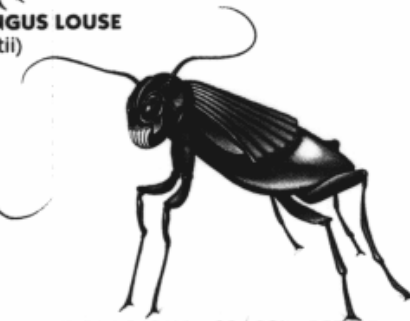
CREEPING BROWNOUT FUNGUS LOUSE
(systemii interruptii)



SNOUTSUCKING SAG WORM
(datis obliteratis)



TRANSIENT STINK FLEA
(printii garbagelli)

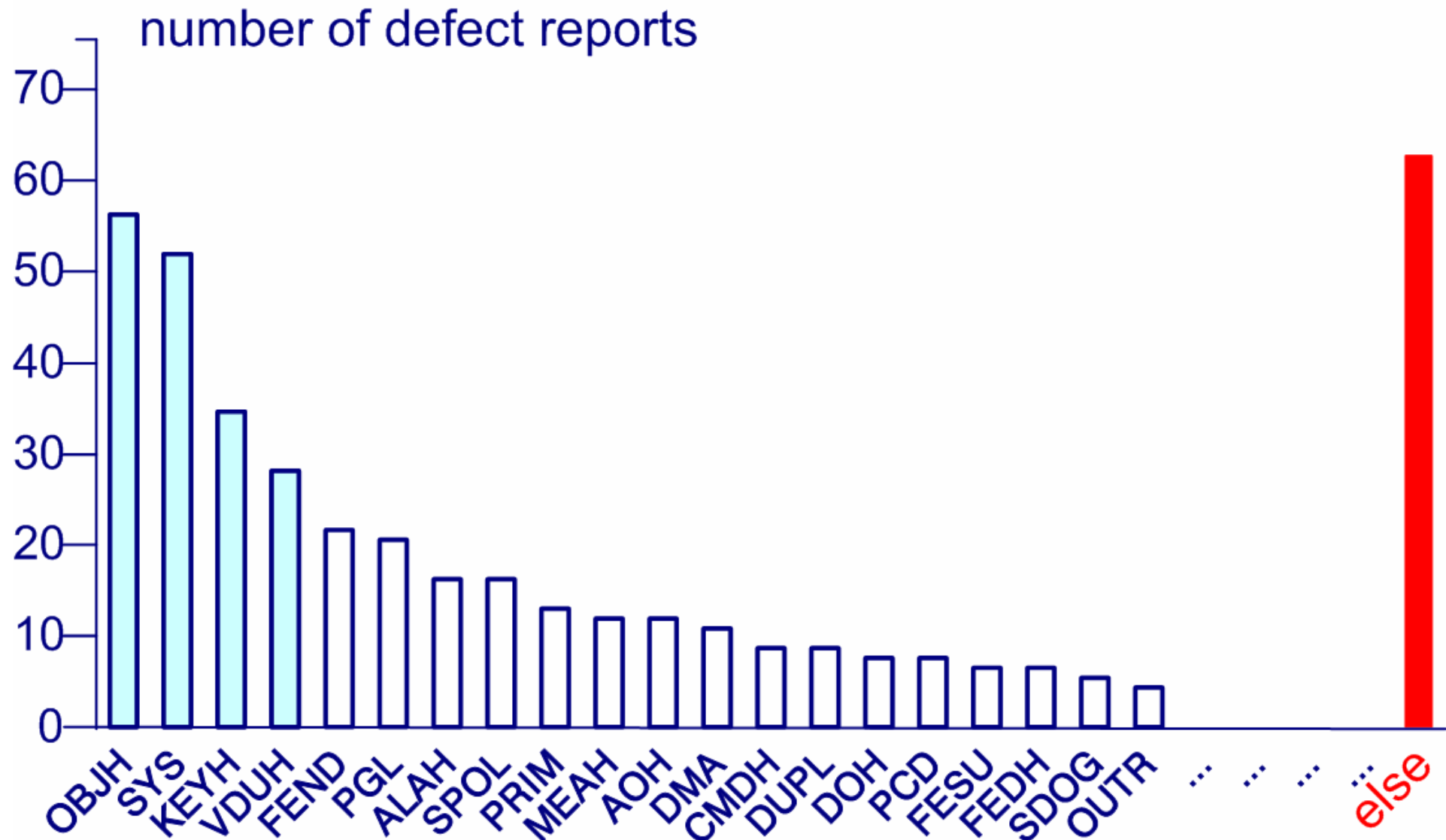


GIANT BLACKOUT ASSASSIN BEETLE
(monstrositus catastrophus)



RINGED-ANTENNA LINEHOPPER
(signallus distorti)

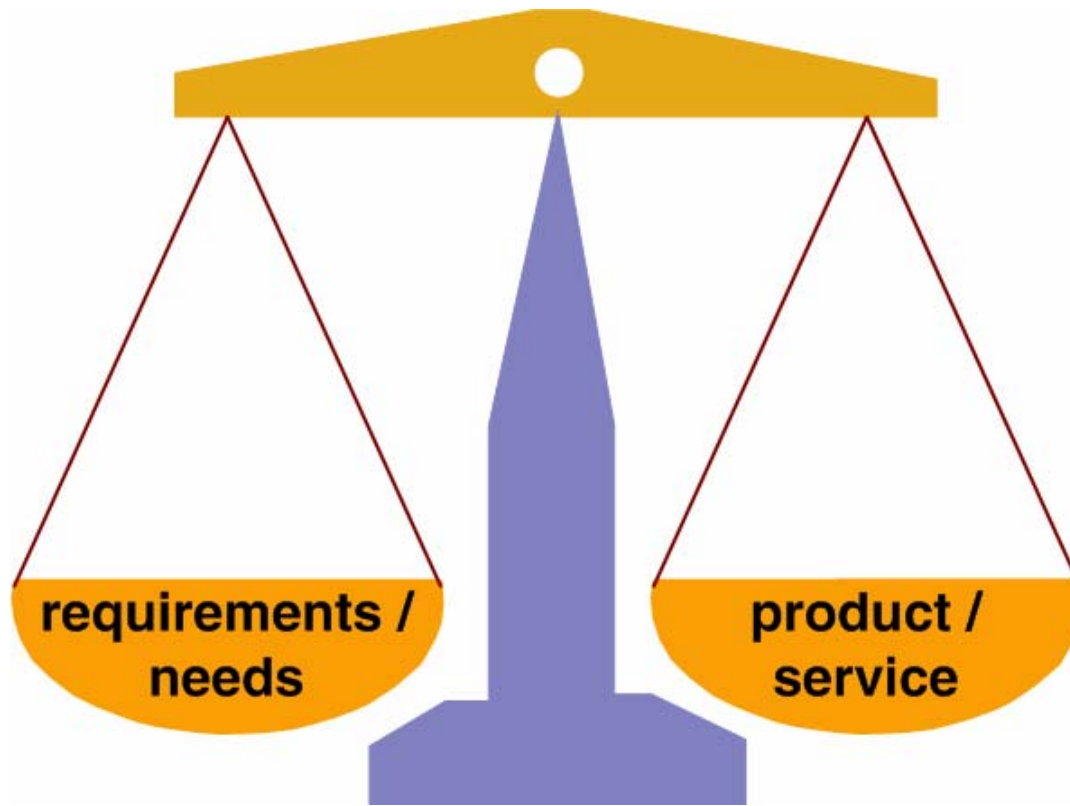
Analysis of the defect data base



After my first attendance of a quality conference



What the hell are quality requirements?

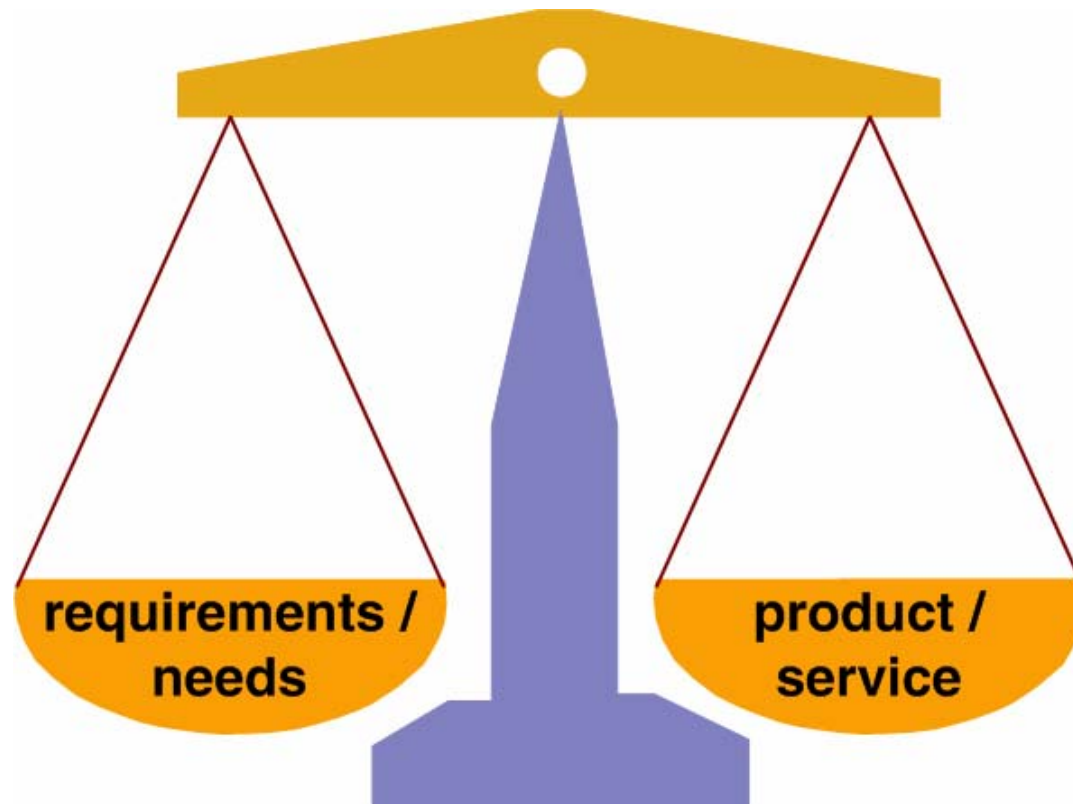


Quality Balance

per definition

$$\text{quality} = \frac{P/S}{R/N} = 1$$

What the hell are quality requirements?



Quality Balance

per definition

$$\text{quality} = \frac{P/S}{R/N} = 1$$

Is **quality requirement** the required quality?

$$\text{quality} = \frac{P/S}{R/N} = 1.2?$$

$$\text{quality} = \frac{P/S}{R/N} = 0.9?$$

Quality is also something else

A requirement is an externally observable characteristic of a desired (software) system (Alan Davis, 2005)

plus

Software **quality requirements** are actually attributes of (or constraints on) functional requirements. (SWEBOK V3.0)

= Software quality **externally observable characteristics** are actually attributes of (or constraints on) functional requirements **of a desired (software) system**.

plus

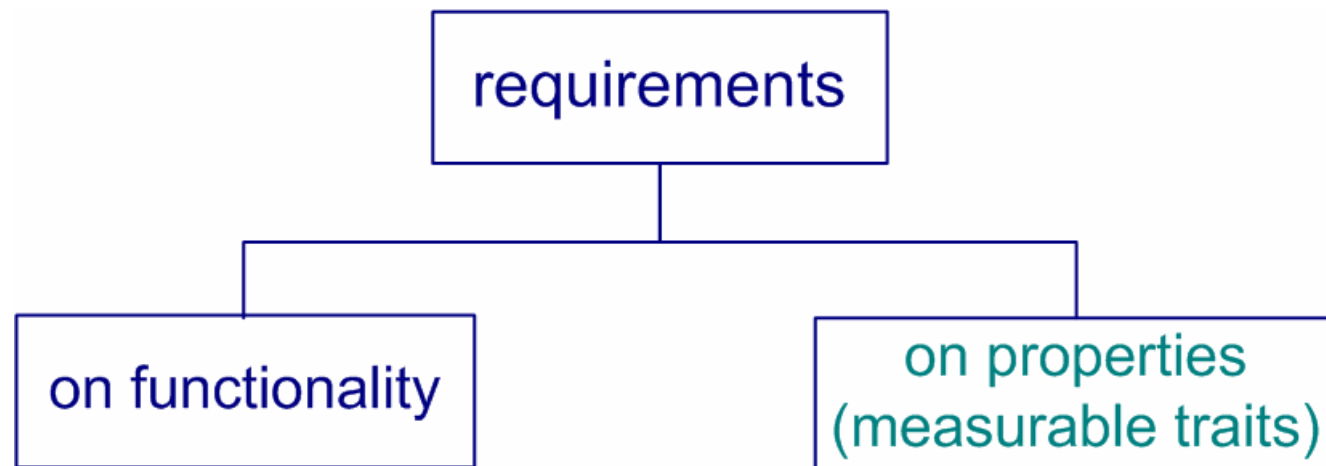
quality = grade, degree of excellence || excellence, worth ||
trait, characteristic, attribute .. (Webster, 1990)

= Software **characteristic externally observable characteristics** are actually attributes of (or constraints on) functional requirements **of a desired (software) system**.

Quality is also something else

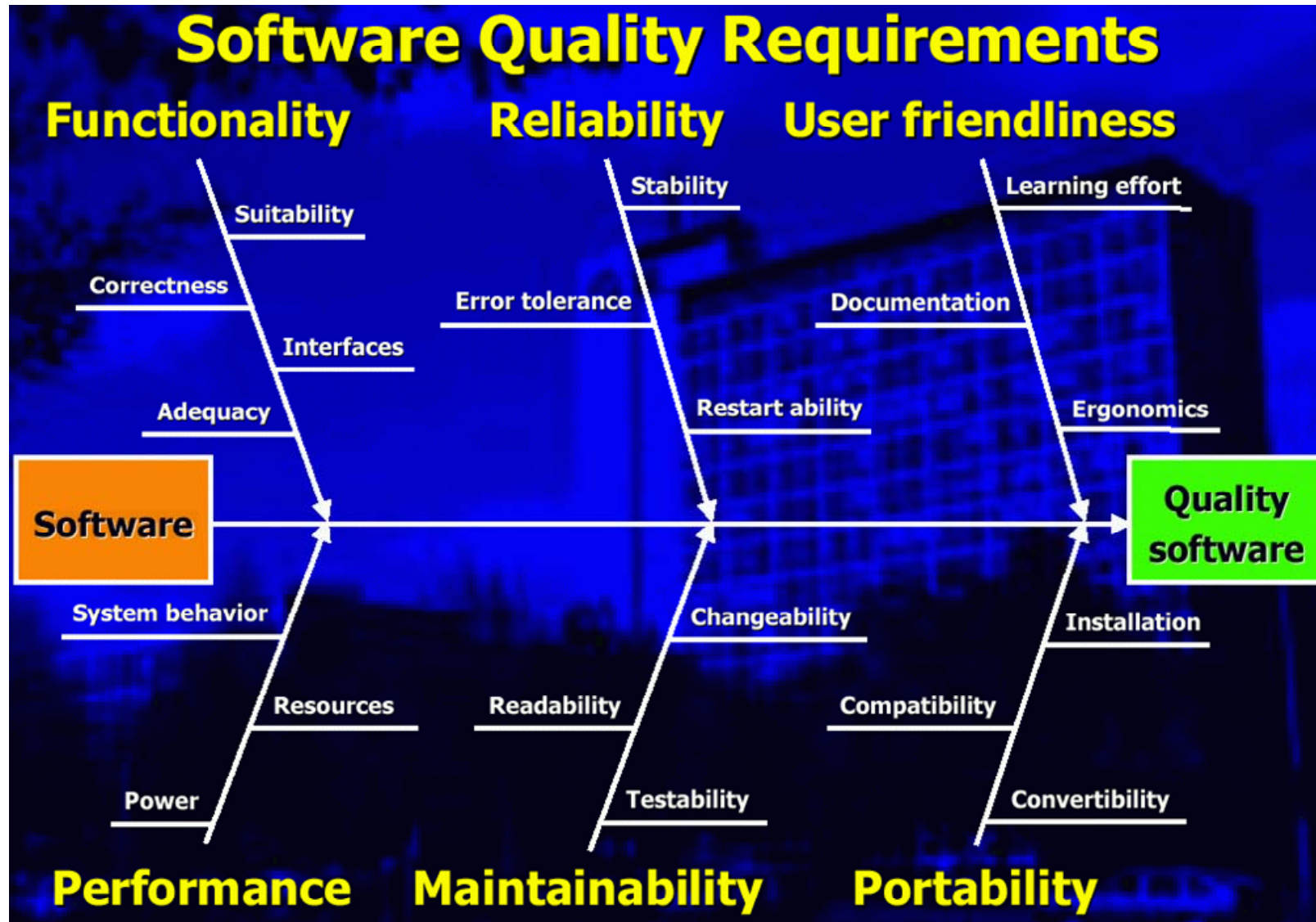
A requirement is an externally observable characteristic of a desired (software) system (Alan Davis, 2005)

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trait, characteristic, attribute .. (Webster, 1990)

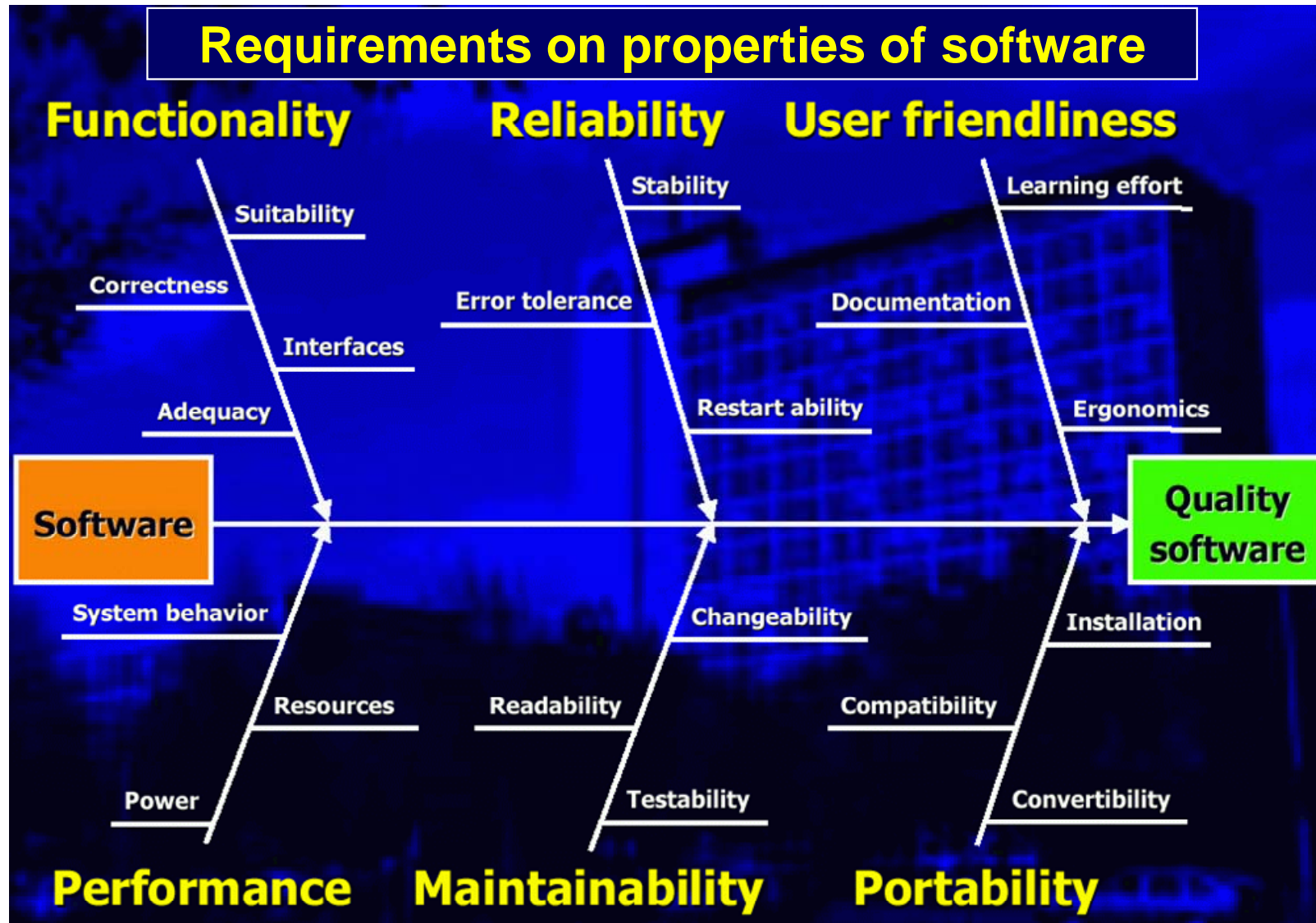


A requirement is an externally observable functional or measurable characteristic of a desired (software) system (Alan Davis, 2005)

Requirements on software properties



Requirements on software properties



Quality Attributes?

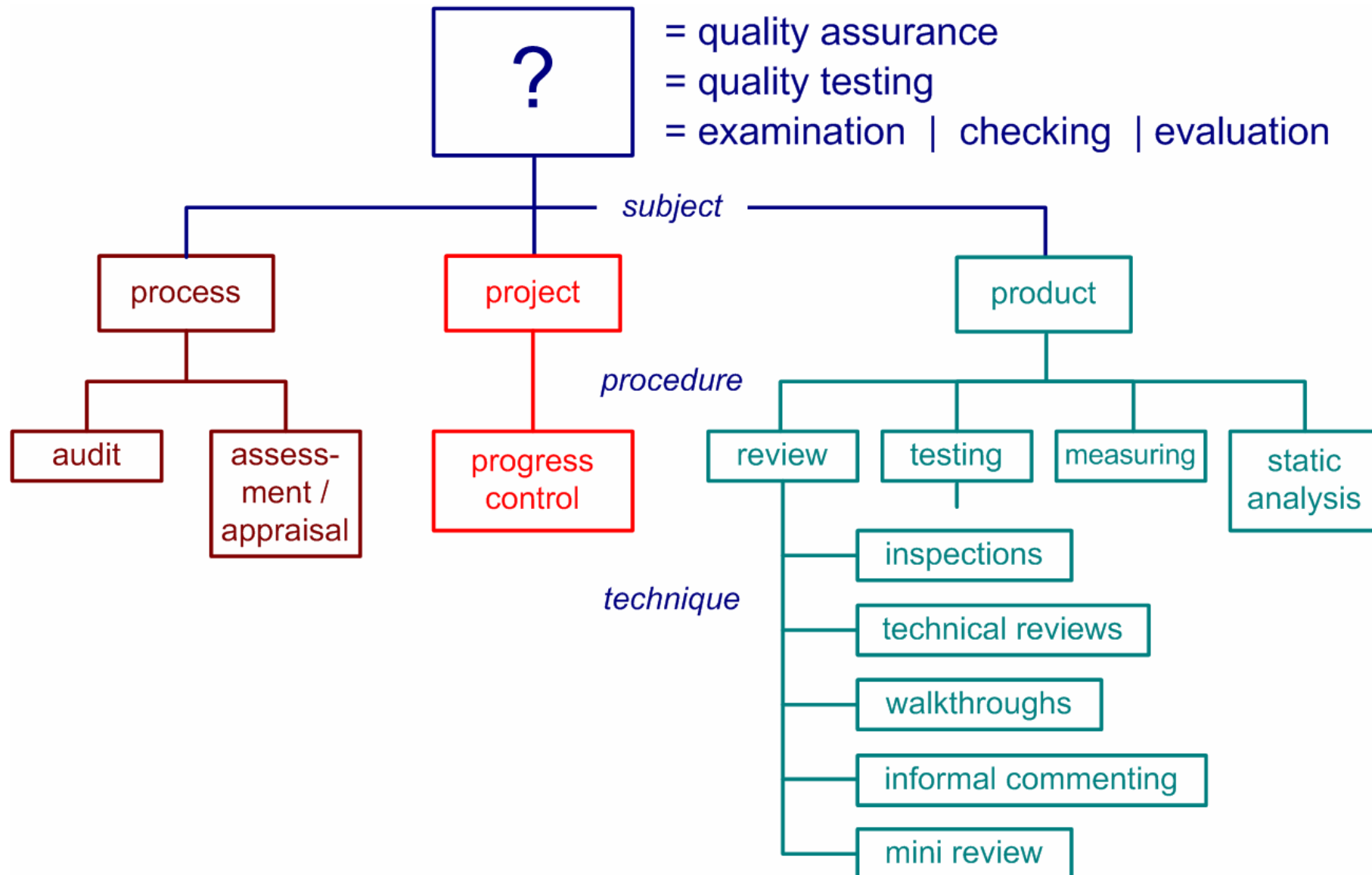
quality = grade, degree of excellence || excellence, worth ||
trait, characteristic, attribute .. (Webster, 1990)

quality = the degree to which a set of inherent characteristics fulfils
requirements (ISO 9000)

quality attributes

- = attributes of the degree to which a set of inherent characteristics
fulfils requirements (ISO 9000)?
- = attributes of excellence?
- = attributes of traits, characteristics, attributes?

What is the right term here?



Some fundamentals of ...

.. what I would call for now examination

- an examination is concerned with a well defined, identified subject
- examination is a comparison of the characteristics of a subject with its requirements or a standard or an etalon (reference)
- without a reference only an expertise is possible but no examination
- the result of examination is a statement on the **quality** of the subject that has been examined
- examination does not include the definition of corrective actions
- etc.

Did you ever audit quality?

you can audit

- a department in a company
- a running project
- a process, e.g. software development process
- a procedure, e.g. the reviewing process

and say something about the quality of the audited

- department in a company
- project
- process, e.g. software development process
- procedure, e.g. the reviewing process

audit is an examination procedure (see above)

Quality planning on the Web

Quality Planning is part of *quality management* focused on setting *quality objectives* and specifying necessary operational processes and related resources to fulfil the quality objectives (Wikipedia)

Quality Planning is the process for "identifying which quality standards are relevant to the project and determining how to satisfy them": Quality planning means planning how to fulfil process and product (deliverable) quality requirements. (PMI PMBoK)

Quality planning allows quality to be designed into the deliverables of the project before the first task has begun. It is therefore done during the development phase of the project life cycle. It may involve identifying standards or best practices. Design of experiments is one tool that identifies which variables will have the most influence on the final quality of a product. https://www.e-education.psu.edu/geog584/l7_p3.html

Quality planning?

"I am setting up my project and plan

- the work products
- the activities
- the resources
- the schedule
- the cost
- the information flow

What quality shall I plan?"



says a stressed project leader

The key to my survival as QM

favourable prerequisites

- although one of the youngest I was the ONLY one in the department with software engineering education (or something like that)
- I did develop before a piece of software – more or less successfully
- I did some project management work before – more less successfully

lucky punches

- I did not speak qualitysh, I talked about the work and about the work products
- I did not rule, I did provide advice and help
- I did work with evidence, also quantitative
- my management did order ad hoc audits

Survival Dictionary



quality control

→ controlling **quality of** product / project / process

quality goals

→ goals for **quality of** product X / project Y / process Z

quality improvement

→ improvement of **quality of ...**

A Kind of Conclusion ...

IF quality = degree of compliance THEN

don't use ever quality as adjective

don't use ever quality as noun without a subject

don't use quality at all when talking to your fellow software engineers

ELSE noop

quality is inherent in thinking and acting and gets explicit in customers eyes

quality is an attitude and is experienced when lack of it is detected

there is no quality without a defect culture

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‣ *to talk about success is silver, to talk about failures is gold,
to try to conceal failures is foolish*