

Wrap-Up: Software Engineering

Instructor: Peter Baumann

email: pbaumann@constructor.university

tel: -3178

office: room 88, Research 1

*"Good, Fast, Cheap:
Pick any two (you can't have all three)."*
-- from RFC 1925

Replay: What is Software Engineering?

- Software Engineering (SE) is
multi-person construction of multi-version software [Parnas]
- SE as *Engineering* Discipline
 - Adherence to **quality** standards
 - Role model: classic engineering disciplines
 - *mechanical engineering, civil construction, ...*
- SE offers
 - management, theory, organisation, methods, tools, techniques
 - ...for constructing **large** program systems

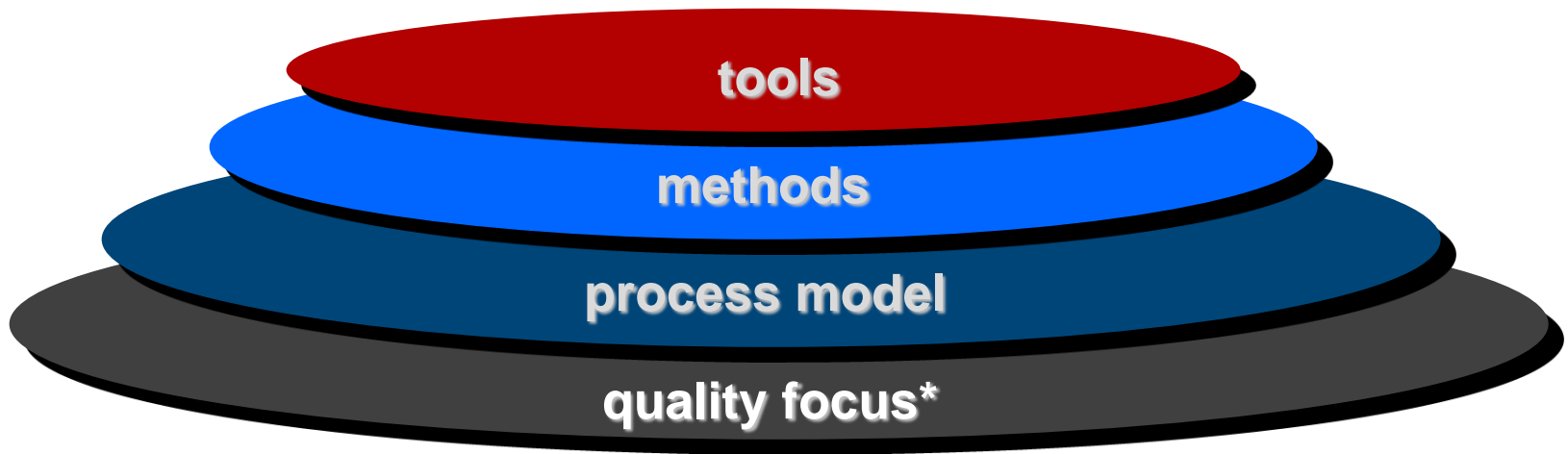
When reporters asked astronaut Alan Shepard (Freedom 7, 1961) what he thought about as he sat atop the Redstone rocket, waiting for lift-off, he replied, 'The fact that every part of this ship was built by the low bidder'.
-- Gene Kranz, *Failure Is Not an Option*

The Modern SE Process

- **Structured**
 - Data & code
...and the SE process itself
- **Object-oriented**
 - Classes, responsibilities, collaboration
- **Incremental**
 - Delivery occurs in increments
 - All SE activities are iterative
- **Agile**
 - process & people must be adaptable

One voice out of zillions, but a good one IMHO:
www.stsc.hill.af.mil/crosstalk/2008/08/0808Weinberg.html
 see also: www.geraldmweinberg.com/Site/Software.html

A Layered View on Software Engineering



SOGETI World Quality Report
(pp 14, 28, 36 *mandatory reading for exam*)

* „quality“ is just a shorthand for „make it work – *always*“

Your Goal as a Professional?



Programmer's Professionalism

- **knowledge**
 - tools, methods, best practice – *keep on learning!*
- **+ diligence**
 - documentation, testing, and all the other 'ugly' duties – *make it your habit!*
- **+ anticipation**
 - what constellations can occur? Worst case? – *feeling for machine + circumstances*
- **= craftsmanship**
- *...plus responsibility & ethics*

Best success!
*...for your sake
& that of your users*

What Does Industry Expect From You?

Marion Berkmann, Senior Manager HR Germany, NetApp:

- Flexibility, motivation, ability to work on your own.
- Basic technology know-how, in-depth market knowledge, a customer oriented approach, and willingness to learn.
- IT experts increasingly take over consulting and management tasks!

Programmer: A red-eyed, mumbling mammal capable of conversing with inanimate objects.