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Laboratory for Quality Software

The evolution of software testing

What software testers could learn from Charles Darwin

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DE GOUDEN DRAAD DOOR UW BEDRIJFSVOERING

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Who am I?

- Hans van Loenhoud
- (long time ago) botanist, specialized in evolutionary biology
- Managing partner INQA
- Vice-president TestNet
- loenhoud@inqa.nl

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Who am I?

- Management & consultancy
- Process improvement in / through ICT
- 10
- www.inqa.nl

TESTNET

- Dutch SIG in Software Testing
- since 1997
- > 500 members
- Next conference: Utrecht, 30-11-04 “The best of …”
- www.testnet.org

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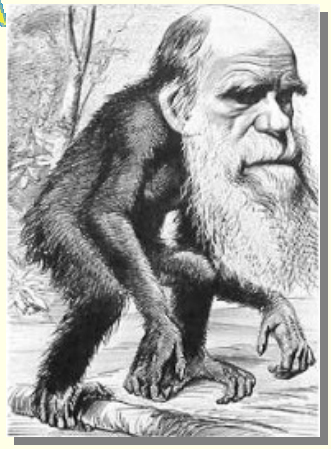
Content



- Evolution?
- Evolution!
- The past ➔ the present ➔ the future
- Where do we go from here?

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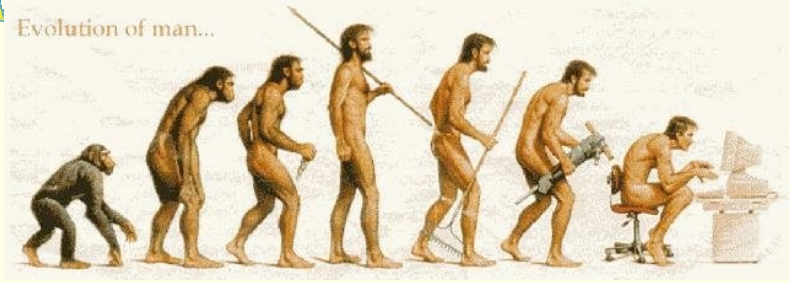
Evolution – in software testing?



- [[[Software testing] V&V] Quality Assurance]
- From desire to deployment through testing
- Gradual changes in software testing over the last 30 years

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Evolution – concepts

ON

THE ORIGIN OF SPECIES

BY MEANS OF NATURAL SELECTION,

OR THE

PRESERVATION OF FAVOURED RACES IN THE STRUGGLE

FOR LIFE.

BY CHARLES DARWIN, M.A.,

FELLOW OF THE ROYAL, GEOLOGICAL, LINNAEAN, ETC., SOCIETIES;
AUTHOR OF 'JOURNAL OF RESEARCHES DURING H.M.S. BEAGLE'S VOYAGE
ROUND THE WORLD.'

LONDON:

JOHN MURRAY, ALBEMARLE STREET.

1859.

The right of Translation is reserved.

- The struggle for life
- The survival of the fittest
- Inheritance
- Changing environments

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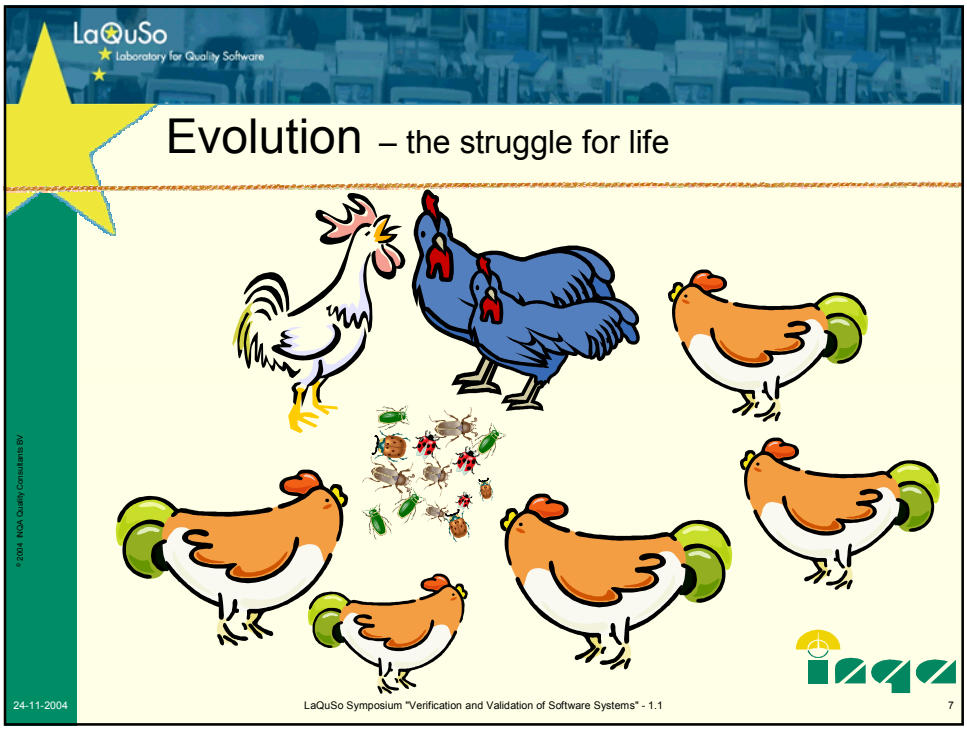

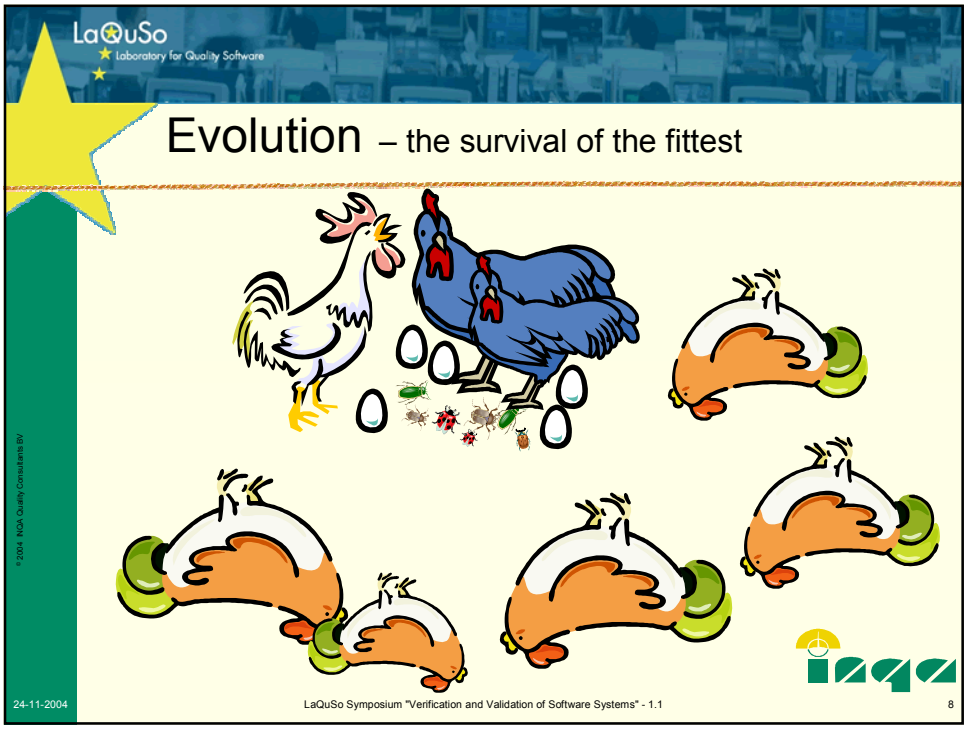

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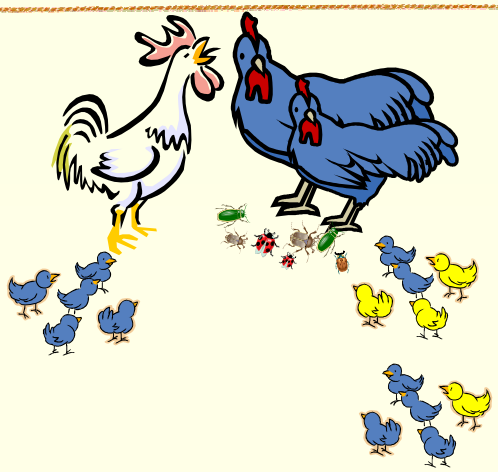
Evolution – inheritance



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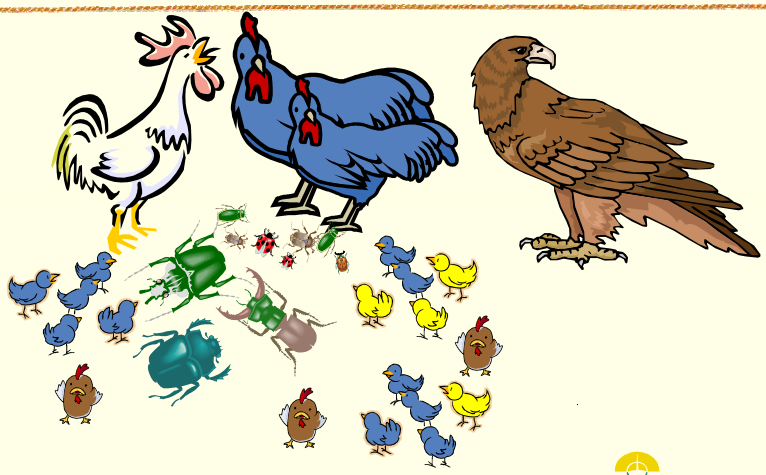
Evolution – changing environments



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Evolution: change over generations

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The past – era's

- Ancient times
- The Middle Ages
- Renaissance
- Y2K/Euro

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The past – ’60 .. ’70

- Simple stand-alone batch systems
- Few errors
- Programmers to find & solve

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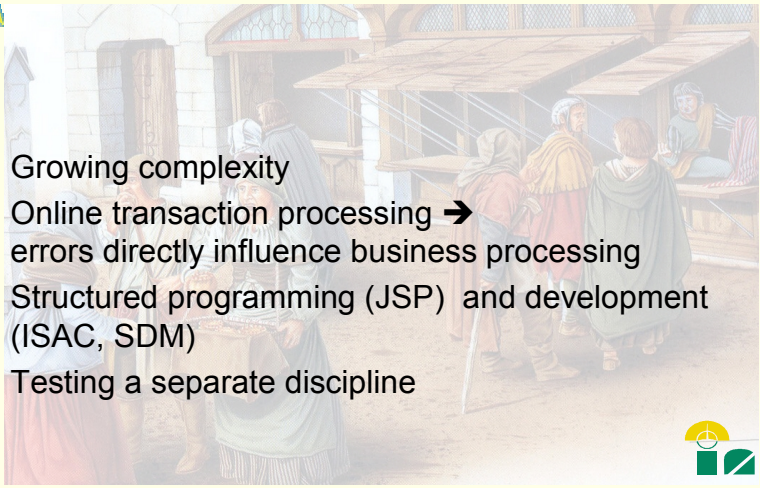
The past – ’80



- Growing complexity
- Online transaction processing ➔ errors directly influence business processing
- Structured programming (JSP) and development (ISAC, SDM)
- Testing a separate discipline

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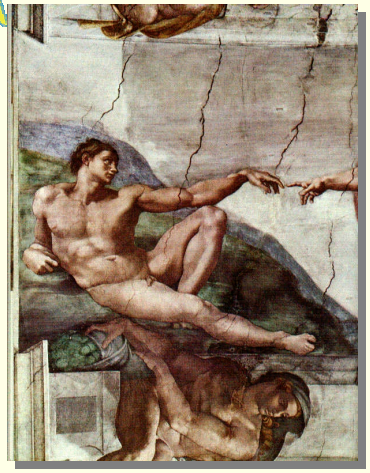
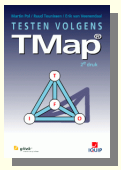
The past – '90



- The PC arrives
- ICT invades society
- Integration of systems
- Continued growth of complexity
- Bugs cause real damage
- Structured testing



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The past – '00

- Y2K & Euro: enormous testing efforts
- For the first time, testing was a serious issue for management
- Structured testing matured
- Automated testing emerged

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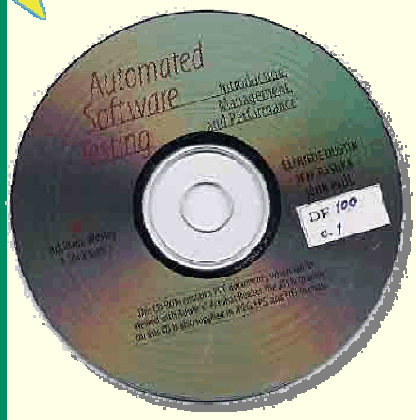
The present



- Structured testing common practice
- Automated testing spreading
- Requirements & risk based testing emerging
- Software quality is still a problem

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The present – problems

Testing:

- Starts too late
- Costs too much money
- Takes too much time
- Not enough management attention

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The present – changing landscape

- Software too complex
- Less development, more implementation
- ASP
- Outsourcing
- Offshoring

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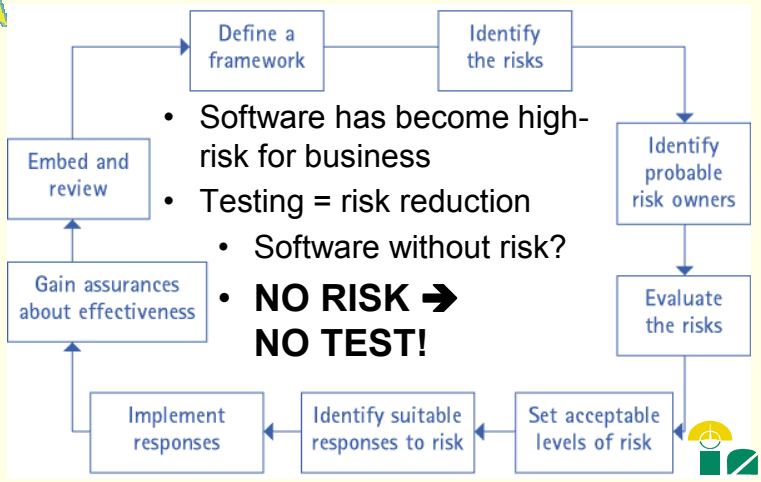
The present – risk management



- Software has become high-risk for business
- Testing = risk reduction
  - Software without risk?
  - **NO RISK ➔ NO TEST!**

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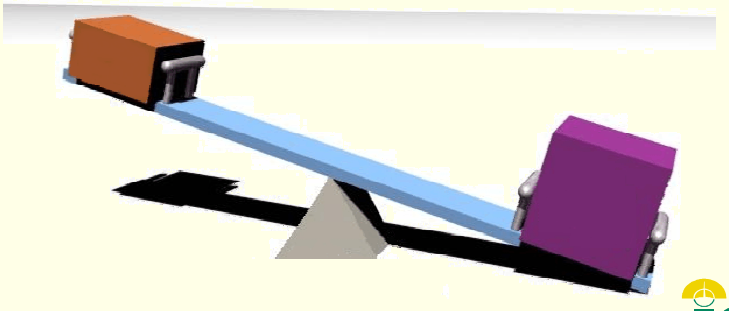
The future

What if we could get better software?

- We would do less testing
- We would do other testing



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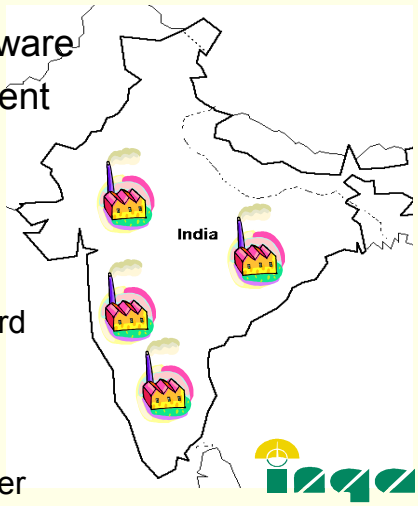
The future – less testing

Why develop your own software at home, if you can buy or rent good software elsewhere?

- Own software development is becoming too difficult and too expensive
- Organisations will use standard software solutions offered by industrial software providers
- Large scale testing will only been done by the manufacturer



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The future – other testing

- Most & worst bugs come from wrong requirements ➔ testing part of analysis & design (inspections, prototyping, MBT)

- From specifications onwards, testing can and will be automated
- Acceptance testing will precede selection in stead of finalise implementation

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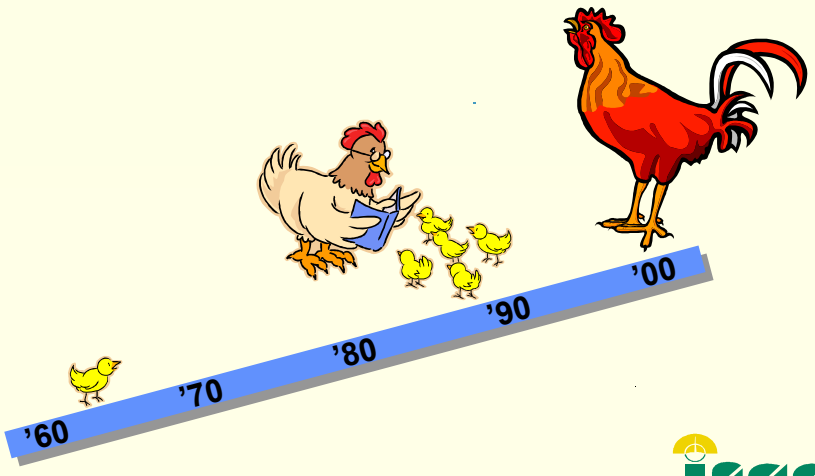
Conclusion – software testing evolution exists



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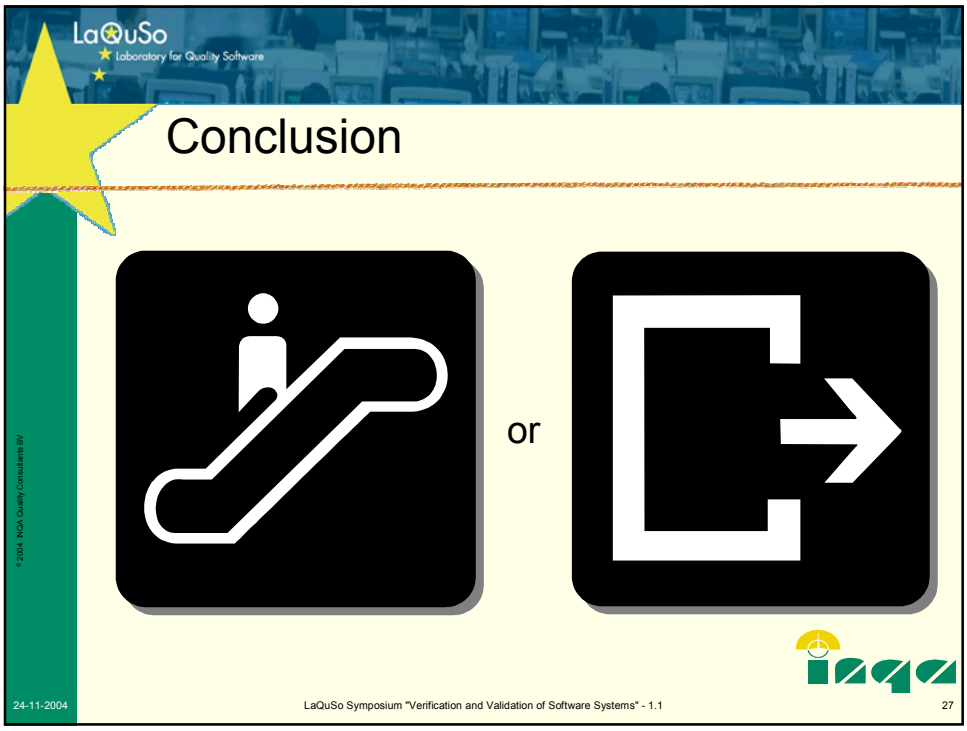
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27