Software Trends and Technology Needs Panel

March 10, 1998
Steven Hawking on Future of Science (March 6, 1998, White House):

- ...a complete unified theory [of the universe] is still about 20 years away
- The depiction of science in Star Trek is too static
- No limit to complexity in the future
- Basic science becomes part of general awareness, and paradoxes of quantum
  theory will seem common sense to our children's children

*Will these apply to software???
**Business dynamics:**
- Technology is for sale
- Customer’s cost needs to be reduced
- Solutions must be cash flow break-even annually within 5 years
- “The information age is technology driven”

**Semiconductor industry:**
- Moore’s law still rules: chips’ power increases, DRAM prices decrease, but ... silicon CMOS will reach its limits

**What industry’s business drivers are these?**
- globalization
- speed and flexibility
- lean enterprise
- people
- IT
  *(will be applicable to all...)*

**What industry sectors will represent the biggest pull?**
- Medical
- Networking
  *(Biggest fund holdings in my favorite Technology Value Fund’s portfolio)*
Xerox-specific business drivers

Dr. Peter Hantos

DOCUMENT:
Today is paper, future: multi-media and more paper...

⇒ document creation:
• scanning, OCR, color, dealing with different sources of text and graphics

⇒ document processing:
• complex, high quality, document-instead of page-oriented printing
• moving away from light-lens copying
• unseat offset printing

⇒ document delivery:
• networked

⇒ document management:
• distributed
• ubiquitous
• all the known dbms issues, such as storage, retrieval, etc.

SOFTWARE:
No specific, new software methods are needed for our business, but...
since Quality, Cost, Performance and Delivery are still high priority items, we will take anything and everything which is considered proven AND state-of-the-art.
Software trends and needs

1. Web-related
Trend = haphazard, Need = controlled, Future = most likely haphazard

2. HW/SW interplay
Trend = HW driven, Need = sys. eng. with proper SW emphasis, Future = N

3. Will software turn into art, science or engineering?
Trend = engineering, Need = healthy balance, Future = N

4. UML and OOT
Trend = attempting unification, Need = Method Engineering, Future = N

5. Process and Process Maturity
Trend = getting complex, Need = getting simple, Future = will get more complex

6. Reuse
Trend = growing, focus on technical issues, Need = focus on non-technical issues, Future = N
7. Tools
Trend = full lifecycle support, Need = T AND modular, Future = T

8. AI
Trend = stagnation, Need = new parallel and associative fundations, Future = (N-)

but ...

“If you really wish to know what will happen in the next century, talk with a historian. Better yet, talk to a schoolteacher*”

*Quoted from Cliff Stoll, astronomer and MSNBC commentator