Distributed & Interactive Systems

Dick C.A. Bulterman
SEN5 Research Focus

Experimental computer sciences systems research

Three thrusts:

• Interactive systems
• Distributed systems
• Web technologies

Representative output

• Scientific publications & dissertations
• Open source software
• Standards, both in the small and the large
SEN5 research landscape

Unifying theme: Understanding Temporal Constraints
Interactive Systems

Topics:

- Algorithms for adaptive on-demand presentations
- Supporting virtual synchronous experiences in asynchronous use
- (Protected) Content personalization
- DSL’s for synchronized multimedia
- Social impact research
Distributed Systems

Topics:

• Algorithms for time-bounded media delivery

• Architectures for distributed media synchronization

• Algorithms for user mobility

• Low-level non-monolithic rendering algorithms

• Predictive block-level media prefetching
Group history and senior staff

Profiles:
- Distributed multimedia systems (focus since 2004)
- Standards and knowledge transfer (added 2009)

Research staff:

Total group staffing:

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Centrum Wiskunde & Informatica

Distributed & Interactive Systems
Research activity (1)

Research output:

- Open SW/Standards
- Keynotes
- PhD in Progress
- Books+Chapters
- Ref. Conferences
- Journals

Years: 2005 to 2010
Research activity (2)

Research funding:

- Contract Research
- EU Projects
- NWO BSIK
Partnerships

**CWI internal:**
- INS2
- SEN1+SEN3
- PNA2

**EU projects**

**Conferences organized:**
- EuroITV
- ACM DocEng
- ACM MM
- IEEE ISM
- ACM NOSSDAV
Societal relevance

High-impact standardization:

- W3C World Wide Web Consortium

Dedicated public-interest partnerships

- DAISY Consortium
- Tsunami Evacuation Route

Open-source software
Highlights 2005-2010

Personnel development:

- Bulterman: VU Professorship, ACM SIGweb Vice-Chair
- Pemberton: ACM-CHI Lifetime Achievement Award
- Cesar: Tenure at CWI
- Vaishnavi: Finished his PhD work

Best papers/best projects

- Three BP’s at ACM Conferences/SIGMM
- ITEA Gold Medal (Paris, 2006)
SWOT Analysis SEN5

Strengths

• Reputation, partnerships, people, funding

Weaknesses

• Lots of semi-research staff, W3C future…

Opportunities

• Increased awareness for media, social networks

Threats

• Increased commercialization of research agenda
Strategic Directions 2011-2016

Invest in external partnerships
  • Key world-wide research, plus key EU funding

Develop dedicated research lines
  • Focus on Interactive & Distributed aspects

Acquire new staff
  • PostDoc in Distributed Systems, OIOs in both

Consolidate future activity
  • Plan for post-2016
(Our) Future = Networks + Media + Users + Time

Jamie Black/Kevin Burg, 2010