Microsoft® Research
Faculty Summit

10 YEAR ANNIVERSARY
Research in the 21st Century

Rick Rashid
Senior Vice President
Microsoft Research
Microsoft Research

- Redmond, Washington (Sep, 1991)
- San Francisco, California (Jun, 1995)
- Cambridge, United Kingdom (July, 1997)
- Beijing, China (Nov, 1998)
- Silicon Valley, California (July, 2001)
- Bangalore, India (Jan, 2005)
- Cambridge, Massachusetts (July, 2008)
Microsoft Research Mission Statement

- Expand the state of the art in each of the areas in which we do research
- Rapidly transfer innovative technologies into Microsoft products
- Ensure that Microsoft products have a future
Value of Microsoft Research to Microsoft

• Source of IP and new product technologies
  • Microsoft Research generates roughly 20% of the Company’s patents and generally Microsoft Research patents are more “fundamental”

• Problem solving
  • Ability to bring smart people to bear rapidly on hard problems confronting products, product groups or the company

• Early warning system
  • Ears to the ground in new areas across a broad range of technologies
Basic research group allows a company like Microsoft to respond more rapidly to change.

Research provides a reservoir of technology, expertise and people that can be quickly brought to bear:
- New technologies
- New competitors
- New business models

You invest in basic research and long-term research precisely because you don’t know what the future will hold. You don’t know whether there will be a war, a disease outbreak, a famine, a new competitor, or an economic dislocation of some kind.

Vannevar Bush
Describing what would eventually become the National Science Foundation and the U.S. federal research infrastructure.
Interactive Visual Media
- Graphics and Multimedia
- Digital Photography and Video

Platform Elements
- Networking, Distributed systems, Operating systems
- Cellphone and other Devices
- Sensor networks
- Security, Protection against Malware

Reinventing Software Development
- Languages, tools, compilers

Data and Documents
- Data Solutions for a Terabyte World
- Search
- Fighting SPAM

UI and Collaboration
- New UI – Speech, Ink, Gesture, Natural Language
- Meetings and Collaboration
- Modeling of People and Groups

Science
- AIDS Vaccine, Quantum Computing, Astronomy
- Algorithms, Cryptography
Working with the Worldwide Academic Community

- Participate in Research Community
  - Extensive publication and conference participation
  - Professional service – DARPA, NSF, NRC

- Strong ties with universities
  - Joint research projects

- Extensive visitor and speaker program
  - Students, faculty, research scientists
  - Post-docs, sabbatical
  - Largest PhD internship program in the Industry
Worldwide Talent Support

80 students from around the world selected in 2008 for Ph.D. fellowships and scholarships

100 top Ph.D. research students from leading European academic institutions currently supported by Microsoft Research fellowships

25 Microsoft Research Faculty Fellowships awarded since 2005 in the U.S. and Canada

25,000 scientists, academic researchers, faculty and students have attended Microsoft Research-sponsored summits, conferences and workshops since 2005

MORE THAN 25,000

10 computer science students selected each year under the
GRADUATE WOMEN'S SCHOLARSHIP PROGRAM

400 TOP STUDENTS from dozens of universities participate each year in Microsoft Research Asia's Stars of Tomorrow internship program

MORE THAN 400

1,500 attendees at Microsoft Research India's TechVista 2008 research symposium in Chennai

100 students and young faculty attend the annual MICROSOFT RESEARCH INDIA SUMMER SCHOOL PROGRAM

250 RESEARCHERS FROM 50 UNIVERSITIES IN 16 COUNTRIES have joined with Microsoft Research in the Latin American and Caribbean Collaborative ICT Research Federation (LACICR)

250 Ph.D. fellowships granted to students from 50 universities in the Asia-Pacific region since 1998

3,000 students, faculty and research scientists attended Microsoft Research Asia's Computing in the 21st Century conferences in Beijing and Singapore

MORE THAN 30 collaborative institutes and technology learning labs supported worldwide in research areas such as parallel computing, games for learning, artificial intelligence, computational and systems biology, and computational thinking

MORE THAN 30

NEARLY 1,000 students selected annually for internships at Microsoft Research Labs in the U.S., China, India and the UK

MORE THAN 1,000
announcing

Extending a collaborative relationship with:

National Center for Women & Information Technology (NCWIT)
NCWIT and Microsoft

NCWIT is a national coalition of over 170 prominent corporations, academic institutions, government agencies, and nonprofits.

Working to achieve and maintain U.S. global competitiveness in information technology through the encouragement and recruitment of women.

Efforts to increase women's participation in IT along the entire pipeline, from K-12 and higher education through industry, academic, and entrepreneurial careers.

www.ncwit.org

Second partnership with NCWIT

Microsoft and NCWIT are collaborating to raise awareness of today’s changing workforce and the positive impact that women in IT have on the industry.

Microsoft provides $1M support over four years.

Continues relationship previously announced in 2006.

Underscores Microsoft's continued commitment to addressing critical shortages of women in the computer science talent pipeline.
announcing

Microsoft Research New Faculty Fellowships
2009
2009 Microsoft Research New Faculty Fellows

Rafael Pass  
Cornell University  
Cryptography

Svetlana Lazebnik  
University of North Carolina, Chapel Hill  
Computer Vision, Graphics, Visualization

Luis Ceze  
University of Washington  
Systems Architecture

Nicole Immorlica  
Northwestern University  
Theory, Economics, Social Computing

Gill Bejerano  
Stanford University  
Bioinformatics, Genomics

Tuesday, July 14  
11:45 AM -1:00 PM  
Cascade  
Five Years of Faculty Fellowships: A Retrospective
New name: Microsoft Research Faculty Fellowships

- Broadening the program beyond North America
  - Europe, Middle East, Africa (EMEA)
  - Latin America (LATAM)

2010 Fellowship Selection Process

- Sep–Oct 2009: each institution submits one nominee
- Applications vetted through 3 rounds of reviews
- Winners announced in April 2010

Program information is at:
Tuesday, July 14
Kodiak
1:00 – 3:45

Top undergraduate & graduate design institutions showcase their projects on the topic “New Ways of Working”

- Carnegie Mellon, Department of Design
- Central Academy of Fine Arts, Media Lab, Beijing, China
- Art Center College of Design, Pasadena, California
- Universidad Iberoamericana, México City
- Dundee University, Scotland, UK
- New York University, Interactive Telecommunications Program
- University of Washington, Interaction Design Division
Understanding Change on the Web

Susan Dumais
Principal Researcher
Microsoft Research
MSR Homepage

1996

2009
Content Changes

User Visitation/ReVisitation

Today’s Browse and Search Experiences

But, ignores …
What We Are Doing

Analyzing:
- Content change patterns
- User re-visitation patterns
- Relations between change and re-visitation

Developing:
- Retrieval models that incorporate time
- **Diff-IE** browser plug-in
  - Highlights what’s new since you last visited
  - Changes how people view change
Web information is highly dynamic
- Yet, most tools work with a single snapshot of the information
Understand content change, user re-visitation patterns, and their relationship

- Develop support in
  ♦ Browsers (e.g., DiffIE viewing change, notification, presentation)
  ♦ Search engines (e.g., crawl policy, indexing and ranking algorithms)

- More information
  ♦ Demo #24
  ♦ http://research.microsoft.com/~sdumais
Ease of Sharing & Socializing on the web...

- URLs
- Rich previews
- Social context (comments, ratings, etc.)
- Public sharing
Summary

- Make sharing easy
- Unify the desktop & web
- Apply the ideas to work as well as home

Next steps
- Deploy to see how it’s used in different settings
- More on http://research.microsoft.com/socialdesktop
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Questions and Discussion