Accelerating Change

Physical Space, Virtual Space, and Interface

Stanford University
Palo Alto, California
November 5 - 7

2004 Conference

- Accelerating interconnectivity of the physical world
- Increasing accuracy of the simulated world
- Growing intelligence of the human-machine interface
Dear Change-Aware Professional:

Accelerating Change 2004, the only gathering of its type in the world, offers a unique opportunity to learn from leading thinkers in the science, technology, business, and humanism areas of accelerating change.

AC2004 delivers three main benefits: a community of thoughtful attendees, foresight into coming events, and strategies for navigating the future. The conference provides guidance for understanding and using the unprecedented changes now occurring and soon to occur in computation-driven technologies, and for choosing intelligent paths through the thicket of information, options, and technological innovation.

Today, every technology-dependent executive and organizational leader is a de facto futurist. Certain types of change are so rapid and disruptive that only the most foresighted are ready for what comes. At the same time, many new technologies are overhyped, overinvested, and underdesigned. Efficiently driving change today requires a pragmatic innovator’s attitude, a philosophy of lifelong learning, and a desire to network with a multidisciplinary community of insightful renaissance thinkers.

Intelligent strategic thinking begins with a commitment to support communities like AC2004. I cordially invite you to join us at Stanford this November.

Respectfully,

John Smart
President, ISAC

The Institute

The Institute for the Study of Accelerating Change (ISAC) is a 501(c)(3) nonprofit corporation. ISAC exists to further research, education, consulting, and selective advocacy of communities and technologies of accelerating change. We explore accelerating developments in special domains of science and technology, and their potential impact on business and society. We recognize that humanity’s central choice in technology development is not a blind advocacy of acceleration, but a selective catalysis. Discovering which technologies have the greatest potential benefit in each environmental context, and selectively advancing those in a culturally sensitive manner, while regulating and delaying detrimental technologies, is the essence of modern individual and social choice.

The Conference

There should be a periodic conference of different types of people to think about … some means by which we can make the best of both worlds. The best of the purely human world, and the best of this extraordinary, wonderful, and terrifying world of [technological] technique.

Aldous Huxley (1959)
Innovation occurs for many reasons including greed, ambition, conviction, happenstance, acts of nature, mistakes, and desperation. But one force above all seems to facilitate the process. The easier it is to communicate, the faster change happens.

James Burke
Our distinguished AC2004 speakers are chosen to emphasize a balanced mix of data-guided Analysis, informed Forecasting, and Action plans and examples, emphasizing multidisciplinary inquiry and a broad synthesis of Scientific, Technological, Business, and Humanist dialogues.

This year’s theme, Physical Space, Virtual Space, and Interface, analyzes the intersection of three monumental trends:

- Accelerating interconnectivity of the physical world
- Increasing accuracy of the simulated world
- Growing intelligence of the human-machine interface.

Each of these alone is powerfully impacting society today. Together, they paint a truly transformative picture of the future. Subjects to be discussed may include:

### Physical Space (tangible things and networks)

- Connectivity/Internet/Network Immunity/Security
- GPS/Location-Based Services/Radio/RFID/Sensing/Telematics
- Handhelds/Wearable and Portable Computing/Transparency
- IT Outsourcing/Offshoring/Globalization
- Robotics/AI/Automation/Instant Manufacturing
- VOIP/Bandwidth/Streaming
- Wireless/Cellular/Software Defined Radio

### Virtual Space (simulations and virtual life)

- Avatars/Artificial Life
- CGI/Visual FX
- Gaming/MMORPGs/Virtual Training/Entertainment
- GIS/World Mapping/Augmented Reality
- Persistent Worlds/Virtual Economies
- Web Services/User-Created Content

### Interface (data mgmt systems and convergence)

- Databases/Data Mining/Storage/Knowledge Management
- Email/eBooks/Blogs/Lifelogging
- Enterprise Software/CRM/Digital Nervous Systems
- Micropayments/DRM/Video On Demand
- Search/NLP/LUI/Semantic Web
- Social Software/Groupware
- Persuasive Computing/User Modeling/Prosody/Personality Capture
- Investing for Accelerating Change/Social Challenges

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### How Does Computation Affect Our Environment?

**Moore’s Law**

In 1964, Gordon Moore of Intel noted that CMOS transistor density doubles reliably every 18-24 months. In 1999, Ray Kurzweil noted this doubling trend for at least 110 years. What will this enable in 2015? 2025?

![Transistor Density Growth](image1)

**Dickerson’s Law**

In 1977, Richard Dickerson, a professor of physical chemistry at Cal Tech, noted that solved protein crystal structures had risen from one in 1961 to 23. He published a simple exponential formula which predicted that by March 2001, scientists would have solved 3-D structures for more than 12,000 proteins. He was only 57 short of the actual number. What other non-obvious physical processes are Moore’s law dependent?

**Smith’s Law**

Alvy Ray Smith, Microsoft graphics guru and co-founder of Pixar has said, “Reality begins at 80 million polygons per second.” Joi Ito notes *Toy Story* had 5-6 million polygons per frame. *Toy Story* 2 had twice that. Our best digital faces today have 100 motion control points. The actual Reality Transition may be 800 million polygons per frame and thousands of control points. We are rapidly approaching this threshold. What then?

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### Attendee Benefits

- 36 leading thinkers on the topic of accelerating change
- 350 change-aware attendees, many selectively invited (see accelerating.org/changeleaders.html)
- Two days and nights of networking with some of the top minds in the world.
- Six keynotes, three themes, three debates, and numerous breakout and Q&A sessions
- Conference Handbook and Proceedings
- DVD conference record at production cost
- Networking events, including the CI Dinner and Futuristically Incorrect
- Exhibits including Virtual Worlds demo and Tech Night
- Presenters’ and Conference Bookstore

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Two billion years ago our ancestors were microbes; a half-billion years ago, fish; a hundred million years ago, something like mice; ten million years ago, arboreal apes; and a million years ago, proto-humans puzzling out the taming of fire. Our evolutionary lineage is marked by mastery of change. In our time, the pace is quickening.

**Carl Sagan**

When the rate of change on the outside exceeds the rate of change on the inside, the end of a business is near.

**Jack Welch**
### Friday November 5  SAP Labs, Palo Alto

**Evening Reception and Tech Night Demos**  
**No-Host Dinners in Palo Alto**  

### Saturday November 6  Tresidder Union, Stanford

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<td>Helen Greiner, Co-Founder and Chairman, iRobot - <em>Mobile Robots - Saving Time, Money, and Lives</em></td>
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<td>Shai Agassi, Executive Board, SAP - <em>Accelerating your Business Vision: Acquisitions, Partnerships, and Enterprise Portals</em></td>
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<td>Dana Blankenhorn - <em>Making Moore’s Law Work For You</em></td>
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<td>Andreas Olligschläger - <em>Advanced IT &amp; Security Systems</em></td>
<td>Gary Hamel (tentative) - <em>Innovation and Resiliency</em></td>
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<td>Robert Gehorsam - <em>Earth: A Persistent World Simulation</em></td>
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<td>Bruce Francis - <em>Distance Learning: The Future of Education</em></td>
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<td>Jaron Lanier (tentative) - <em>McLuhan’s Ramp</em></td>
<td>Brock Pierce - <em>Virtual Currency Markets</em></td>
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<td>Jerry Paffendorf and John Smart - <em>Simulation, Agents, and Accelerating Change: Personality Capture and the Linguistic User Interface</em></td>
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### Sunday November 7

| **Keynote 2 - Virtual Space** | Will Wright, Co-Founder, Maxis; Creator, The Sims - *Games as Prosthetics for the Imagination* |
| **Debate - Virtual Space** |  |
| Brock Pierce and Jack Emmert - *Real Money in Virtual Economies: The Future of User-Created Content* |  |
| **Keynote 1 - Interface** | Doug Engelbart, Digital Interface Legend; Founder, Bootstrap Institute - *Global Collective IQ: Envisioning the Coming Interface* |
| **Keynote 2 - Interface** | Richard Marks, Special Projects Manager, R&D, Sony Computer Entertainment America - *You are Player One: Reinventing User Interfaces* |
| **Breakouts - Interface** |  |
| Peter Thiel - *Virtual Money, Privacy, and Democracy* | John Mauldin - *Bull's Eye Investing: Thriving in a Secular Bear Market* |
| Peter Norvig - *Web Search as a Force For Good* | BJ Fogg - *Persuasive Technology: Computers, Thought, and Behavior* |
| **Breakout Panels - Interface** |  |
| Tim Sibley - *Advanced Computational Linguistics: State of the Art* | Lada Adamic - *Structure and Dynamics of Blogspace* |
| Włodzimierz Zadrozny - *NLP and Intangible Asset Valuation* | Ross Mayfield - *Enterprising Social Software: Wikis and Weblogs* |
| Speaker 3, TBD | Speaker 3, TBD |
| **Debate - Interface** |  |
| (Panel TBD), *Finding Humanity in Machine Interfaces: Capability Atrophy or Augmentation?* |  |
| **Closing Remarks** |  |
**Payment**
Registration may be done by check, PayPal, or credit card. Please make checks payable to ISAC, enclose the registration form, and send to the following address:

<table>
<thead>
<tr>
<th>Mail: ISAC</th>
<th>Phone: (310) 831-4191</th>
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<tbody>
<tr>
<td>2227 Amirante</td>
<td>Fax: (310) 732-2285</td>
</tr>
<tr>
<td>San Pedro, CA 90732-4104</td>
<td>Email: <a href="mailto:mail@accelerating.org">mail@accelerating.org</a></td>
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PayPal payment requires creating a PayPal account, a simple, quick, and secure process. To pay by PayPal, please access [accelerating.org/ac2004/registration.html](http://accelerating.org/ac2004/registration.html).

**Confirmation and Cancellation**
All registrants will receive an email acknowledging enrollment. Approximately one month prior to AC2004, attendees will receive a confirmation letter with further details regarding conference program and directions. Registration refunds can only be made upon receipt of a written request, dated no later than October 8, 2004. Refunds will be subject to a $75 admin fee.

**Name (Mr./Ms./Dr.)**

**Email Address**

**Website**

**Address**

**City, State, ZIP**

**Phone**

**Organizational Affiliation (for your badge)**

**Position/Title**

☐ **Please charge my credit card**  VISA, MASTER CARD, AMERICAN EXPRESS

**Cardholder’s Name**

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**Authorized Signature**

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**Registration Rates:** (check one)

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<tr>
<td>Early Bird Rate (deadline September 30, 2004)</td>
<td>$350.00</td>
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<tr>
<td>Regular Rate</td>
<td>$450.00</td>
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<tr>
<td>Regular Student Rate*</td>
<td>$150.00</td>
</tr>
<tr>
<td>Door Rate</td>
<td>$550.00</td>
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<tr>
<td>Virtual Attendance Rate**</td>
<td>$150.00</td>
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* To receive the student rate, please fax a copy of your current university student ID with your conference registration form to (310) 732-2285, or the regular conference rate will apply. Only 40 student spaces available.

** Virtual Attendance Rate includes conference DVDs, text proceedings, and Web content, excluding some demo and networking sessions.

Do you wish to be listed or anonymous in the AC2004 Attendee Roster?  ☐ Listed ☐ Anonymous

Would you like a free subscription to our newsletter, Accelerating Times?  ☐ Yes ☐ No

**Accelerating Change 2004**

**November 5 - 7 (Friday - Sunday)**

**Tresidder Union at Stanford University**

**Institute for the Study of Accelerating Change**

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San Pedro, CA 90732-4104