

Events and Sightings

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WiWiW Project Internet Pioneers Meeting

On 31 March 2010, I traveled to Washington D.C. to meet with other Internet pioneers in a event organized by Andreu Veà as part of the Who Is Who in the Internet World (WiWiW) project (WiWiW.org). The project goal is to leave a “structured, digitally recorded register” of the ideas that led the Internet pioneers to create the network as we know it today based on primary-source histories from the founders and deployers who spread the Internet throughout the world.

The project began as a hobby of Veà’s while he was working on his doctoral thesis.¹ Veà explained,

After more than ten years of interviewing Internet Pioneers, and impelled by Dr. Vint Cerf’s interest in the project, I quit my job and accepted an invitation by Stanford University to be Internet Research Scholar. I have been there since early 2003. The WiWiW project is privately funded, and I am aided by a continuously growing, international research group (wiwiw.org/credits.htm).

To date, Veà has interviewed and processed the interviews of more than 250 Internet pioneers. The project website illustrates his methodology at wiwiw.org/method.gif.

For the March meeting, Internet pioneers trickled into the Washington D.C. meeting place throughout the morning and afternoon, with 10 of them scheduled to be individually interviewed by Veà. As these interviews were happening, the other pioneers spent enjoyable hours catching on their personal lives and reminiscing about their involvement in the early days of the Internet.

The full group meeting began officially at 5:30 p.m. with a group photo (see Figure 1), a buffet dinner, and then a planned roundtable discussion (which was chaired by Internet historian Janet Abbate).² The roundtable discussion, which Veà called a “collective memory experiment,” was to start with each pioneer saying, in turn, a few words about his involvement in Internet history. However, with so many strong personalities in the room, the “in-turn” format failed, and Abbate wisely let the discussion follow its own fascinating course.

Craig Partridge did say a few words before turning the floor over to the person at his right, Steve Wolf, who was head of the US National Science Foundation from 1986 to 1994 and from this position was instrumental in the privatization of the Internet. Wolff’s remarks had barely begun before another pioneer

chimed in with a story about his involvement in another aspect of Internet privatization. Another pioneer jumped in with his privatization memories, followed by another, and so on. For at least half an hour this topic was discussed with many surprises (“I didn’t know you were doing that over there while I was doing this at my institution”). Clearly, big changes such as Internet privatization didn’t come from the work of just a few planners. There might have been a plan, but in the end, it was an organic process with many people in many places playing more or less significant roles.

Two or three other topics were also discussed in the same unstructured, yet fascinating and broad reaching way, including the evolution within the US DoD and among its contractors from the planned Autodin II network to the Defense Data Network, and the spread of the TCP Internet protocol. Obviously, Veà’s idea of interviewing and bringing together a range of first-hand participants, including many whose contributions are lesser known, for the collective memory experiment is a powerful approach to gathering and sorting out the real facts of the creation of the Internet. This was especially true having all the participants in the same room, where differing memories were immediately challenged and frequently reconciled.

BBN Technologies (bbn.com) provided hospitality for the meeting throughout the day, including the meeting space in its Rosslyn, Virginia, office. The buffet dinner and a National Geographic photographer Becky Hale (halephotography.com) were funded by the Internet Society (isoc.org) by arrangement with president and CEO Lynn St. Amour. Gene Gaines provided logistics support and support throughout the day and during the three-month effort of organizing the meeting. He also arranged for Thomas Jefferson High School for Science students Thomas Georgiou and Daniel Johnson to videotape the evening roundtable. Joan Batet (from Tarragona, Spain) assisted Veà throughout the day, doing still photography and welcoming guests while the personal interviews were conducted.

References and notes

1. A. Veà, “History, Society, Technology and Network Development: An Exposé of the Most Unknown Face of the Internet,” doctoral dissertation, La Salle Univ. School of Eng., Barcelona, 2002, (in Spanish); <http://www.veabaro.info/tesi>.
2. Dan Morrow, who was executive director of the Computer-world Smithsonian Awards Program and has been involved

in the Smithsonian Institution Oral and Video History Program, also attended the meeting.

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ELIS Revival Festival

The ELIS Revival Festival was held at the Japan Advanced Institute of Science and Technology (JAIST) in Nomi, Ishikawa, Japan from 7 to 9 August 2010. The Electrical Communication Laboratories LIST Processor (ELIS) is a Lisp machine developed by Nippon Telegraph and Telephone Corporation (NTT) around 1985 that supports the multiple programming paradigm language TAO. At the festival, the ELIS machine was turned on after laying dormant for more than 20 years and it ran beautifully. Approximately 80 people joined this festival and congratulated the revival of ELIS.

Yasushi Hibino, vice president of JAIST, started the research and development of ELIS in 1978 when he was with the Human Interface Laboratories of NTT. He designed VLSI-oriented architecture for ELIS using a repetitive structure. He completed the ELIS prototype Hydrogen in 1984. He and his colleagues implemented a single VLSI chip with two micron CMOS cell technology to realize all the processor functions of ELIS. It was a 15-mm-square chip with about 8,000 transistors and was fabricated successfully by OKI Electric Industry. The results were reported at the IEEE International Solid-State Circuits Conference in February 1987.

ELIS was put on the market as the AI workstation ELIS-8100 by NTT-IT in 1987. Two years later, the ELIS-8200 series was developed, which included both stand-alone and desktop models. In total, about 500 of ELIS workstations were shipped. ELIS achieved a performance of about one million Lisp operations per second in the interpreter mode, which was much higher than commercial Lisp workstations already in the market.

The ELIS Revival Festival in August was organized as part of the JAIST 20th anniversary events. Hibino exhibited several models of ELIS workstations (see Table 1). At the ceremony, Ikuo Takeuchi, who was responsible for the TAO development, turned on the ELIS-8100's power, confirming the operation of both ELIS-8100 and 8200.

A three-day symposium on ELIS and Lisp was also held during the festival. The sessions included the origin and history of ELIS and



Figure 1. Arpanet (and Internet) pioneers. Left to right: Barry Wessler (front), Craig Partridge (back), Charlie Herzfeld, Bernie Cosell, Larry Landweber (back), Al Blue (front), Les Earnest, Heidi Heiden, Steve Wolff, Peter Sevcik, Bob Kahn, Steve Lukasik, Noel Chiappa (far back), Dave Walden, Vint Cerf, Doug Gale, Alex McKenzie, and Carl Sunshine. Steve Crocker arrived after the photo was taken. (Photo courtesy of Becky Hale.)



Figure 2. Roundtable discussion at the Who Is Who in the Internet World (WiWiW) project meeting. A high school student (on the left) digitally recorded the collective memory experiment. Andreu Veà is sitting on the table outside the group. The box of Internet history books and papers in the foreground was used throughout the day to check points of memory. Steve Crocker, who absent for the group photo, is sitting with his back to the whiteboard, between Bernie Cosell and Bob Kahn.

TAO, ELIS commercial products, ELIS successors, and present and future of Lisp. On the last day, Hiroyuki Matsumoto, the chief designer of the Ruby programming language, delivered an invited talk, "Lisp to Ruby, Ruby to Lisp," which was followed by a panel discussion on the future of Lisp.

The ELIS Revival Festival was sponsored by JAIST and supported by the Information Processing Society of Japan's Special Committee for the History of Computing. It was also held in cooperation with NTT-IT, Oki Electric Industry, and NTT Cyber Communications Laboratories Group.

Table 1. List of exhibits of the ELIS Revival Festival.		
Name	Number	Remarks
Hydrogen	1	First prototype
VX-2000	1	Second prototype
ELIS-8100	2	First commercial product
ELIS-8200	2	Stand-alone and desktop models
ELIS/VME	1 set	Boards product
ELIS/PC board and front end	1 set	A front end PC/LT
TAO/SILENT	1	
ELIS VLSI chip wafer	1	
ELIS VLSI chip	1	
ELIS manuals and catalogs		
Materials about ELIS and TAO		



Figure 3. ELIS Revival Festival at Japan Advanced Institute of Science and Technology.

To date, historical computer revivals and restorations have seldom been tried in Japan. The success of the ELIS revival could encourage realizing dynamic preservation in Japan.

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New Historical Sources at the Computer History Museum

The Computer History Museum’s popular lecture series continued this spring and summer with the following talks:

- Genevieve Bell (Intel), “Not Your Father’s Internet,” on 19 August

- Mark Zuckerberg (CEO, Facebook), The Facebook Effect, on 21 July
- Ross Bassett (North Carolina State University), “Before Bangalore and Silicon Valley: How Indian MIT and IIT Graduates Have Shaped Computing History,” on 15 July
- Ross Bassett, “The Foundation of Today’s Digital World: The Triumph of the MOS Transistor,” on 13 July
- PLATO@50: Seeing the Future Through the Past (two-day conference, seven lectures), on 2–3 June
- Robert W. Taylor in conversation with NPR’s Guy Raz, on 13 May
- Kurt W. Beyer, author of *Grace Hopper and the Invention of the Information Age*, on 4 March
- IBM ACS System: A Pioneering Supercomputer Project of the 1960s, on 18 February

We have also posted four historical films on YouTube that should be of interest:

- “The Atanasoff-Berry Computer In Operation.” This film shows the 1997 ABC reconstruction in operation. Professor John Gustafson of Iowa State University narrates.
- “The Electronic Coach.” This is a one-minute film by IBM showing Case Institute junior Donald Knuth using an IBM 650 to improve his basketball team’s performance.
- “1963 Timesharing: A Solution to Computer Bottlenecks.” Featuring Fernando Corbato, this film gives a detailed look at computer timesharing at the Massachusetts Institute of Technology in the early 1960s.
- “Silicon Engine: A CHM-original production.” This nine-minute film tells the history of the invention of the integrated circuit.

For more information on the video recordings of all these events and films, please see <http://www.youtube.com/user/ComputerHistory>. The Computer History Museum has also uploaded recent event videos at <http://www.computerhistory.org/events/index.php?view=previous§ion=calendar>.

As a result of seven years of planning, the Museum is to open a new major exhibition, R|Evolution in January 2011 (see Figure 4). The exhibition is currently under

construction, and we will report on it in the near future.

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Obituary of Herb Grosch

Herb Grosch, Canadian-born American computer scientist, passed away on 25 January 2010. Grosch's ACM Fellows Award Citation reads: "A computer pioneer who managed important space and technology projects, Grosch is respected for discovering and describing the relationship between speed and cost of computers;" he is best known for Grosch's law. Between 1945 and 1950, he was at Columbia University as an IBM Watson Lab scientist and Columbia faculty member, working with Wallace Eckert. A well-compiled website on Grosch's career is maintained by Frank da Cruz at Columbia University (see <http://www.columbia.edu/acis/history/grosch.html>). da Cruz wrote that

Herb was a human encyclopedia; not only had he been everywhere and done everything, he remembered every detail: people, machines, events, organizations, programming techniques from the dark ages, every IBM machine and model over a span of half a century. He was generous and candid with his knowledge, which he passed on with a self-effacing sense of humor, and, it must be said, he was a deep and sincere appreciator of women, a rare quality even to this day in persons of his gender. As can be seen from his autobiography, he led an extraordinarily



Figure 4. View of R|Evolution exhibit under construction from visitor's viewing deck



Figure 5. Herb and Nancy Grosch. (Photo courtesy of Frank da Cruz, <http://kermit.columbia.edu>)

full life, and was remarkably open about his failings.



Selected CS articles and columns are also available for free at <http://ComputingNow.computer.org>.

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