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Working with Jon
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Status of this Memo

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Tribute

In 1973, after doing interactive flight simulation over the ARPAnet, I joined ISI and applied that experience to interactive speech over the ARPAnet.

The communication requirements for realtime speech were unique (more like UDP than like TCP). This got me involved in the Network Working Group, and I started another project at ISI called "Internet Concepts".

In 1977 Steve Crocker, who was then at ISI, told me that Jon was willing to join us, and that Jon will be a great addition to my Internet Concepts project. Steve was right on both accounts.

Jon and I worked together from 1977 until 1993 when I left ISI. According to ISI's management Jon worked for me for several years, and I worked for him for several years. In reality we never worked for each other (nor for ISI), we always worked together, to advance the technology that we believed in. Over most of those 16 years we had our offices together, and always worked with each other, even when we worked on totally different projects.

Jon was always most pleasant to work with. He was most caring both about the project, and about the individuals on the team. He was always full of great intentions and humor. Jon was always ready for mischiefs, one way or another. He was always game to hack something.

When I worked on the MOSIS project, in 1980, users submitted their VLSI designs to us by e-mail. For several defense contractors, getting access to the ARPAnet was too complex. We suggested that they would use a commercial e-mail service, like TELEmail, instead.

Then we had the problem of getting all the e-mail systems to interoperate, since none of them was willing to interoperate with the others. Jon and I solved this problem during one long night of hacking. This hack later became the mail-tunnel that provided the service known as "InterMail", for passing e-mail between various non-cooperating systems, including systems like MCIEmail and IEEE's COMPmail.

I'm sure that Jon was so enthusiastic to work with me on it for two reasons:

- * Such interoperability among heterogeneous e-mail systems was our religion, with no tolerance for separatism;
- * We definitely were not supposed to do it.

Jon hated bureaucracy and silly rules, as Cary Thomas so well described. Too bad that we lived in an environment with so many rules.

We started Los-Nettos without lawyers and without formal contracts. Handshakes were good enough. At that time several other regional networks started around the country. Most of them were interested in expansion, in glory, and in fortune. Jon was interested only in getting the problem solved.

This was Jon's priority, both at work, and in his life.

I find it funny to read in the papers that Jon was the director of IANA. Jon was IANA. Much more important, Jon was the corporate memory of the Internet, and also the corporate style and the technical taste of the Internet.

Jon was an authority without bureaucracy. No silly rules! Jon's authority was not derived from any management structure. It was due to his personality, his dedication, deep understanding, and demanding technical taste and style.

Jon set the standards for both the Internet standards and for the Internet standardization process. Jon turned the RFCs into a central piece of the standardization process.

One can also read that Jon was the editor of the RFC, and may think that Jon checked only the grammar or the format of the RFCs. Nothing could be further from the truth, not that he did not check it, but in addition, being the corporate memory, Jon had indicated many times to authors that earlier work had treated the same subject, and that their work would be improved by learning about that earlier work.

For the benefits of those in the audience who are either too young or too old to remember let me recall some recent history:

The Internet protocols (mainly IP, TCP, UDP, FTP, Telnet, FTP, and even SNMP) were defined and documented in their RFCs. DoD adopted them and announced a date by which all of DoD units would have to use TCP/IP. They even translated RFC791 from Jon's English to proper Militarese.

However, all the other countries (i.e., their governments and PTTs) in the world joined the ISO wagon, the X.25 based suite of OSI protocols. The US government joined them and defined GOSIP. All the large computer companies (from IBM and DEC down) announced their future plans to join the GOSIP bandwagon. DoD totally capitulated and denounced the "DoD unique protocols" and was seeking ways to forget all about them, spending million of dollars on GOSIP and X.500.

Against them, on the Internet side, there was a very small group of young Davids. The OSI camp had its prestige, but we had working systems, a large community of devotees, and properly documented protocols that allowed integration of the TCP/IP suite into every UNIX system, such as in every SUN workstation.

Against the strict laws in Europe, their universities developed an underground of Internet connections. One could get from California to the university in Rome, for example, for example, by going first over the Internet across the US to the east coast, then to the UK, then using some private lines to France, then to CERN in Switzerland, and from there to Rome - while breaking the laws of all those countries with every packet.

Meanwhile, in the states, Academia, and the research communities, never knew about GOSIP.

The Internet, against all the conventional wisdom, grew without anyone being in charge, without central control, and without any central planning.

The war between the ISO and the TCP/IP camps never took place. One camp turned out to be a no show.

What made it all possible was the wise selection of what to standardize and what not to, and the high quality of the standards in a series of living documents.

Our foundation and infrastructure of standards was the secret weapon that won the war. Jon created it, using the RFC mechanism initiated by Steve Crocker. It was Jon who immediately realized their importance, and the need for someone to act as the curator, and volunteered.

The lightning speed with which Microsoft joined the Internet was not possible without the quality of the existing standards that were so well documented.

During the transition from ARPA, through the NSF, to the commercial world there was a point in which the trivial funding required for the smooth operation of editing and distributing the RFCs was in doubt. At that time the prospect of not having funds to run this operation was very real. Finally the problem was solved and the process suffered no interruption.

What most of the involved agencies and managers did not know is that there was never a danger of any interruption. Jon would have done it even with no external funding. If they did not pay him to do it, he would have paid them to let him do it. For him it was not a job, it was labor of love.

Jon never joined the PowerPoint generation. Jon always believed that the content was the only thing that matters. Hand written slides were good enough. Color and logos were distractions, a necessary evil in certain occasions, not the style of choice.

Jon defined quality by counting interesting ideas, not points per inch.

When fancy formatting crept into the Internet community, Jon resisted the temptation to allow fancy formats for RFCs. Instead, he insisted on them being in ASCII, easy to e-mail, guaranteed to be readable anywhere in the world. The instant availability and usability of RFCs was much more important to him than how fancy they looked.

The Internet was not just a job for Jon. It was his hobby and his mission in life.

We will miss Jon, who was for the Internet its corporate memory, its corporate style, and its corporate taste.

I will miss him even more as a colleague and a friend.

In Summary:

- * Jon was pleasant, fun/funny, and unselfish.
He was full of mischief, adventure, humor, and caring.
He was devoted to his work, to the Internet, and to the people who worked with him.
- * It was great working together and having neighboring offices for 16 years.
- * Jon set the standards for the Internet standards.
- * Jon was the Internet's corporate memory, the corporate taste, and the corporate style.
- * Jon was an authority without bureaucracy.
- * Jon was an Internet Missionary.
- * Jon was a great friend that I will miss for ever.

Security Considerations

Security issues are not relevant to this Tribute.

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