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## Ethernet celebrates 40 years

May 22, 1973, Bob Metcalfe drew a diagram and sent a memo outlining the concept for the first time Ethernet. The transmission of the celebration event begins at 8:30 pm PST (16:30 hrs GMT).

IT Journal 22/05/13 15:30:17

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Live Streaming of the Global NetEvents Summit 2013

Ethernet  
innovation  
summit  
"Inspired by 40 years of Ethernet Innovation"

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8.30am (PDT)

22nd & 23rd May 2013

in association with

parc  Computer History Museum

MEF





Panelists: Faraj Aalaei, President & CEO, Aquantia; Shezhad Merchant, Chief Strategy Officer, Gigamon, Stu Bailey, CTO, Infoblox, Glenn Edens, PARC Program Manager, Content Centric Networking, Bruce Davie, CTO of VMware networking business. Moderator: David Newman, President, Network Test (Photo: IT Journal)

**15:00 hrs :** The panelists discuss the future of networking, addressing issues such as scientific research into commercial realities, standards and creative freedom, government and industry. Sometimes there are conflicting interests, but generally there are ways to get them involved in joint projects. The panelists also gave a look to the future by contrasting two opposing perspectives: the technologist and entrepreneur.

The main conclusion seems to be that research is essential, but equally important is to sell the product or service developed, ie bring to market the product of scientific research.



Panelists: Howard Charney, Senior Vice President, Office of the President, Cisco, Said Ouissal, Vice President, Juniper, Mark Durrett, Director, Marketing, Overture, James Walker, Vice President, Managed Network Services, TATA Communications, Ms Z Liu Yali, Director Executive, Product Technology, Verizon. Moderator: Tam Dell'Oro, founder and president, Dell'Oro Group (Photo: IT Journal)

**14:30 hrs :** The panelists, all executives at service providers and carrier solutions, discuss the relatively recent role has been to link Ethernet LAN and WAN. Thus, to the extent that Ethernet approaches the predicted universal language Nan Chen, increasingly away from the concept of network technology. In degree proportional Ethernet approaches the concept of a service offer - with major implications for the carrier market.



Panelists: Arpit Joshipura, Vice President of Product Marketing, Dell, Mike Banic, Vice President of Marketing, HP Networking, Steve Collen, vice president of enterprise marketing Juniper (photo: IT Journal)

**14:00 hrs :** Panelists dialogue on the status of Ethernet today. They quote Nan Chen, MEF president, who said: "In the future there will only be a universal language - not the English or Mandarin, but Ethernet."

Mike Banic, HP, refers to all the advances that have been structured taking Ethernet based. Virtualization is one of the most important developments made around networks. It has motivated additional connectivity to servers. You do not need to change hardware to the same extent as before, but rather configuring software.

Steve Collen, Juniper, considered important to "make the network invisible" to enhance virtualization. That is, it is necessary to give visibility to the network, but also make it invisible.

Arpit Joshipura, Dell: The requirements posed to the network has been increased, in terms of bandwidth, and so on. The demand for bandwidth is growing at an exponential rate. It is necessary to further automate the management of workloads, among other things.

Panelists will address the issues of *network as a service* and *infrastructure as a service*.

Mike Banic: Network as a Service: You need to automate and facilitate network scalability, reducing the human intermediation.

Ethernet has evolved into a general concept that encompasses the idea of networking. Ethernet joke that, in the hands of an expert in marketing, it could have become a concept as "Ethernet inside".



Panelists: John D'Ambrosia, chair, Ethernet Alliance, Geoff Thompson, an independent analyst and emeritus member of the executive committee of the IEEE 802, Nan Chen, President, MEF, My Le, Professor, Stanford University (Photo: IT Journal)

**12:00 hrs** : Ethernet is a standard, but around it has evolved a business model characterized by stiff competition, interoperability and accelerated evolution, tied to backward compatibility. The panel discussed whether this situation is an ideal balance between the needs of the market for global standards and aspirations of creative freedom.

Recess





Panelists: Gordon Bell, director of scientific research at Microsoft, Glenn Ricart, founder and director of finance, U.S. Ignite, Radia Perlman, Executive Vice President, Platform Systems Division, Intel (Photo: IT Journal)

**11:35 hrs** : Ethernet was the answer to a vision - a vision of distributed computing architecture with a PC on every desk, connected to printers and servers, all sharing. Now, all that is taken for granted, but in the era of mainframes was a revolutionary idea that, as would be shown, change the way of doing business. The panelists explored the implications of long-range Ethernet.



Second session: Panelists Judy Estrin, CEO, JLABS; Yogan Dalal, partner Emeritus, Mayfield Fund, Paul Grams, Exploration Technology Directorate, NASA, Bill Inglés, Inventor, Bill Spencer, former director of Xerox PARC Research &. Moderator: Steve Hoover, CEO, PARC.

**11:10 hrs** : Opening of the second session, whose panelists discussed "the fruitful partnership between governments, academia, industry and finance." In a context of free market economy is easy to forget the important role that governments can have - not only to support basic scientific research, but also supporting standards and dissolving anti-competitive monopolies. Judy Estrin, CEO of JLABS: Apple is a company that, despite its high level of investment in own projects, not interested invest or participate in the academic ecosystem. In other words, is not interested in investing in basic research or innovation.



Second group of panelists: Bob Belleville, Dan Pitt, John Shoch and Pat Thaler. Moderator: Paul Saffo. (Photo: IT Journal)

**10:00 hrs.** The second group of panelists discussed the topic: "Ethernet or Ethernet?". Dan Pitt (Software Defined Networks): "It was not our intention to give Bob 10 years of nightmares". Explain the reasons for IBM, noting that his clients were banks. For reliability, from a technical perspective, the company defended Token Ring. It was a highly relevant discussion topics, and I must admit that there were also elements of personal animosity. "But the things we discussed at the time stopped long ago to be relevant".

John Shoch: "Nonsense! It is hard to imagine an insurance company to discuss the conflict of packet collision data on a network. " Laughter in the audience.

Pat Thaler explains the Ethernet has applications in all areas of human activity. The levels of integration and derivatives Ethernet connection even have affected the ability to save lives.

Question for Dan Pitt, Executive Director of SDN: Do you feel optimistic or pessimistic? Respond networks are increasingly software-based protocols. The picture is, indeed, bright. **10:40 hrs:** Break.



The panelists Norm Abramson, Dave Boggs, Bill Hawe and Radia Perlman. Moderator: Paul Saffo. (Photo: Hector Pizarro, IT Journal)

**9:30 :** The panelists Norm Abramson, Dave Boggs, Bill Hawe and Radia Perlman are the brains behind one of the greatest revolutions in the field of human communication. They explain how the world was before the invention of personal computers, and how they emerged from Arpanet and Ethernet Aloha. Was there a need?



Bob Metcalfe responds to questions from the audience



**9:16 pm:** Question and answer session.

P: When did you understand that what began 40 years ago would reach the relevance now?

A: Ethernet was optional for a while. We asked employees if they wanted them or not instaláramos Ethernet. One day, there was a momentary interruption. Immediately 10 heads peered in cubicles, looking question mark.

Q: In 1988 you afraid to Token Ring?

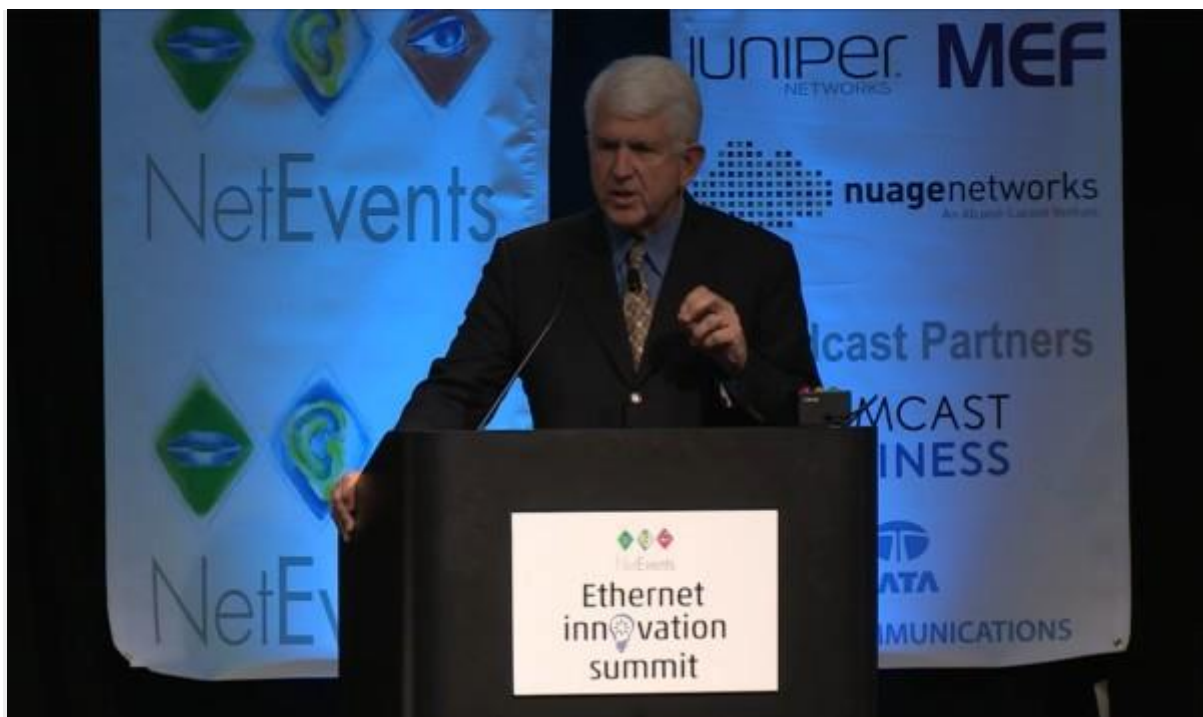
A: Imagine if for 10 years, his wife, colleagues, everyone will say "No result".Laughter in the audience. Imagine, 10 years. And then triumphed over Token Ring Ethernet. We intimidating power of IBM. IBM at that time was not interested in open standards. The IBM of the time IBM was not now.

Q: He feared then to AT & T? They had ISDN.

A: But we are talking about 56 Kbps .... I refuse to comment. Laughter in the audience.

Q: We always think success in undertaking a project. You've experienced failure, and success. What comments on that?

A: One does not fail on purpose. The error is a consequence of trying to succeed. As you begin to do something, you have an eye to future success. It is natural to make mistakes, but without losing sight of the ultimate goal.



Bob Metcalfe

**09:00 hrs :** Metcalfe makes a review of the ideas that gave rise to Ethernet. Arpanet and Alohanet was relevant. The world's first Ethernet was installed at PARC (Palo Alto Research Center) of Xerox. "Back then, we

considered innovative to have a PC on every desk" jokes Metcalfe. Lecture time on the technical procedure, protocol and codes that resulted in the world's first Ethernet network installed at PARC.

Ethernet The first consisted of a single node. It was a transmitting node to itself for testing and debugging. Then we had two nodes, called Michelson and Morley, in honor of the two physicists who disproved the existence of ether. laughs from the audience when Metcalfe says Ethernet meant to Token Ring. Ethernet is "pipe" of Internet, which faces three traffic dilemmas: Video, Mobile and embedded systems.

**8:50 pm** : Bob Metcalfe, Ethernet co-founder, began his lecture explaining his invention, Ethernet, and remembering those who participated in the idea and its implementation. "David Boggs and I were the main inventors of Ethernet, but we had a lot of help": Butler Lampson and Chuck Thacker, Tat Lam, a contractor at Xerox PARC who helped develop the transceiver. Then there was David Liddle and the list goes on, tells Metcalfe.



Paul Saffo

**8:40 pm** : Begin the conference. Paul Saffo, futurist: "The events that took place 40 years ago are highly relevant today. Innovation changes the world. Consider this day not only to celebrate the revolutionary achievement of the past but to put the look in the future more and more innovative."

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## 40 years of innovation

The emergence of Ethernet - and thus of modern networks - goes back to Xerox PARC and the day May 22, 1973, when Bob Metcalfe drew a diagram and sent a memo outlining the concept for the first time Ethernet. As Bob explains: "David

Boggs and I were the main inventors of Ethernet, but we had a lot of help." They were also mentioned in the patent Butler Lampson and Chuck Thacker, for their considerable contribution. Tat Lam, a contractor at Xerox PARC, helped develop the transceiver. Then there was David Liddle and the list goes on, tells Metcalfe.

Silicon Valley in the 1970s, and innovation in the air. Despite its relevance, call the Golden Age of Innovation lose sight of the essential. Indeed, the global expansion of Ethernet has created an even more fertile culture of innovation, since Bob assures us: "We did not have Google, we had no Internet. The innovators of today can be found in the blink of an eye, almost all previous work, and the people who work in your field. They can begin to collaborate remotely. So now we have what I call collective intelligence that has been created through the Internet connectivity and is actually accelerating innovation. "

So Ethernet, an innovation of 40 years ago, is paving the way for an even greater future. How can we make this happen? What is the best way to make the most of this opportunity?

Bob Metcalfe himself and the technology community meets on 22 and 23 May in Silicon Valley to discuss the issue.

NetEvents begin [transmitting live webcast](#) at 8:30 pm PST (16:30 hrs GMT).

IT Journal will be present and reporting live.