

The Internet Governance Network Transcript of Interview with Tim Berners-Lee

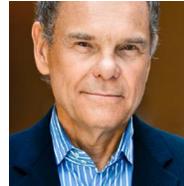
Guest:

Sir Tim Berners-Lee, a graduate of Oxford University who invented the World Wide Web while at [CERN](#), the European Particle Physics Laboratory, in 1989. He is the Director of the World Wide Web Consortium ([W3C](#)), a Web standards organization. He is also the 3Com Founders Professor of Engineering with a joint appointment in the Department of Electrical Engineering and Computer Science at the MIT where he also heads the [Decentralized Information Group \(DIG\)](#). And he is a Professor in the Electronics and Computer Science Department at the University of Southampton, UK.



Interviewer:

Don Tapscott, Executive Director of Global Solution Networks and one of the world's leading authorities on innovation, media and the economic and social impact of technology. He is CEO of the think tank *The Tapscott Group* and has authored 14 widely read books. In 2013, the Thinkers50 organization named him the 4th most important living business thinker.



The Interview:

Tapscott: From your perspective what's the difference between the ecosystem that governs the Internet and traditional state-based models of governing a global resource?

Berners-Lee: Rather than top down and hierarchical, the new models tend to be meritocratic, where meritocracy is in the eyes of one's peers. In the Internet's early days the number of users was relatively small and the collaborative spirit dominated. People were benevolent and prepared to chip in for the sake of the larger world.

But the Internet's governance system had to become more sophisticated to buffer it from for attacks from malevolent or greedy systems. And so, it's evolved. In the early days everybody trusted Jon Postel – and nobody would dream of taking more names than they needed.

Going forward it should be a multi-stakeholder multi-dimensional interconnected system. Different organizations will refine their own processes internally but liaise with one another. This allows a shorter path from problem to solution than a hierarchical model.

Traditional models are geography-based and hierarchical. You have to go and talk to the king about how he's going to mount the expedition to go to another country because that's a big deal. Whereas with a multi-stakeholder structure you can establish liaisons where you need them, working groups will float around in the sea of interested people reading blogs, keeping track of the technology they're interested in, keeping aware of the issues that they're interested in. When you need somebody to connect somebody who's got, for example, a technical solution to a social problem, it's going to be fewer clicks. The diameter of the system is smaller because the degrees of separation are smaller.

In such a system there are fewer links that you have to follow. It has structure, but the structure arises to solve problems, and it arises to follow trends. For example, people will self-organize to create a new working group to liaise between two other working groups or maybe create maybe a common task force. Then it may begin to call itself a working group or it may be big enough to call itself an organization. All this continuous morphing allows one to relax tensions in a collaborative manner.

Whereas if you've got an organization which is hierarchically based the tensions tend to be released by a battle between two departments. For example, who's got the best design or which design should we use? Instead of the engineers getting together to work out a compromise or take the best of each design, you end up having the managers duking it out over which system should be adopted at the highest level, and then the whole branch of the tree sort of dies, because all the people who were involved in the solution which is not adopted get depressed and go away and their knowledge is lost. Whereas in a multi-stakeholder system, they can migrate across and you can very easily form an organization to take all the best bits out of each plan, in principle.

Tapscott: Is it resilience or adaptiveness or dynamism? How would you characterize this?

Berners-Lee: Yes, adaptation, I suppose, the ability to morph, the ability to incrementally change one's organizational structure. This avoids major disruptions where everyone has to abandon what they were working on and go with a specific system.

Sometimes I liken the perfect organizational map is something like the thing you pull out when your sink has been blocked for a long time. Eventually you pull out the blockage, and it turns out to be a lot of hair all connected together with a lot of food and things of all different sizes. It may not look nice but it is efficient at blocking your sink. The virtue of tangled mass is that you can get from one part of it to another quite quickly.

So the new model should be tangled in a nice way. The new model has a greater variety of connections. In a hierarchical model, you've only got one route between any two people. You

go up the tree until you get to a common ancestor and then you come down the tree to the other person. With a multi-stakeholder model there are many paths from one place to another. And the shortest path will be smaller.

Tapscott: Now, let's talk about decision making. There is the famous quote from David Clark in 1992 that says "We reject: kings, presidents and voting. We believe in: rough consensus and running code." Is that the way the World Wide Web Consortium [W3C] operates?

Berners-Lee: Well it depends. To us the way consensus works is that we seek unanimity, but people are encouraged to note their exceptions. The ideal is unanimity. Looking for unanimity can be a powerful force because members strive to understand where the person who was going to vote the other way comes from.

Sometimes though, you'll get people who disagree. A lot of the times in design, when you're designing standards, we're fairly arbitrary. Should we paint it blue, should we paint it green -- they've both got advantages, we ended up deciding to vote blue, we understand why the green people like green, but we're going to go with blue. It's okay to adopt a majority opinion.

There are times when, actually most want to make it blue but someone has a problem with this. So, one of the things we do have is we have this minority report system where at any level somebody can say, I'm going to make a minority objection, I'm going to log a minority objection, and our minority objection is, sort of, stapled onto the case, and goes with it. And then it goes up to a much higher level, and people that review the thing later will be aware of the fact that somebody at one point said that they were not happy with this.

And it gets reviewed by, nominally, the director of which group of people in the staff, and it consists of the advisory committee and so on. So, there's this way of escalating, you have a way of escalating somebody when they want to counter the problem when the majority is wrong or missed something.

So the Area Directors now, the Internet Engineers Steering Group [IESG], and their steering group, which is formed by the Area Directors, they have a sort of management role. They have a hierarchical role and they have the right to intercede.

Tapscott: So the David Clark statement in 1992 is no longer appropriate?

Berners-Lee: Well the Internet Engineering Task Force [IETF] has matured since then and the process has got a bit more formal. It tries to preserve the same characteristics that people who've got an idea that can, you know, who have got an idea that it can work, they've got a protocol, they want to code it up, they want to make it work. Those people should have a place where they can do that relatively quickly. W3C has the same goal there.

Tapscott: So the process has become more formal, there's more of an effort to achieve unanimity, maybe since then, but there are more systems to then deal with the lack of unanimity.

Tapscott: Okay. Let's talk about legitimacy. You can say what you like about the ITU, but it has a process to be legitimate. It's based in the United Nations and we are all citizens of our respective nations, and we vote for our governments, and so on. So, how does legitimacy get achieved for a ragtag multi-stakeholder eco system that's running the Internet? We were talking with Vint Cerf recently he says that the main thing is just that it works, that it's efficient. But lots of things that work aren't viewed as being legitimate. What's your thinking on this?

Berners-Lee: The World Wide Web Consortium is an international community where member organizations, a full-time staff, and the public work together to develop Web standards. There were a number of reasons for starting W3C, but one of them was that I wanted to try to standardize HTML, which is a mark-up language, and I went to the Internet Engineering Task Force, but people at the IETF actually they didn't know what HTML was. So we had to make a new HTML working group. And IETF didn't have the right people viewing it and people were frustrated. You know, they didn't have the web architecture experience and that was a problem. With the ITU, the ITU it comes out of telephony so the expertise there is about telephony. Dealing out the national country codes is a very nation-oriented thing.

But the expertise about the public telephone network is very different from the expertise about how to run the internet. How to assign IP addresses is completely different. And the ITU was a bit hierarchical. It's nice to have a mandate from the United Nations, but people in the UN were not the first to understand and get onto the Internet, they're not the people who understand the Internet technology.

Tapscott: So talking about legitimacy and efficacy. Is that one reason why the multi-stakeholder model is more effective? Because of the expertise and the capability that gets brought to bear on problems?

Berners-Lee: Yes, and because it's multi-connected. People are members of working groups in the IETF and the W3C and we have co-ordination groups and the sharing of work between the two organizations is a function of really who's got the people, who's got the expertise.

Tapscott: And the stakeholders recognize that, so that makes their views probably as legitimate. Is that it?

Berners-Lee: Yes. I think, yes, when the manufactures (of web equipment) come to W3C and they say: Yes, we're going to develop an HTML here, then that means they make a commitment. It's not written but nevertheless it's a commitment. Most developers expect of them that when they build an HTML they'll implement it. For all the people who joined them in trying to make the best version of HTML5, they're rewarded by being talked to by the people who actually are building the browsers and software.

There was a point where the W3C lost legitimacy because it didn't move fast enough to HTML5, and lost part of the working group. People thought it lost it because it's got too stuffy. It wasn't what the browser manufacturers wanted to do and so they started a competing consortium, called the Web Hypertext Application Technology (WHAT) working group. It didn't have the same structure and doesn't have the same intellectual property rights protections that W3C had.

Tapscott: Does WHAT still exist?

Berners-Lee: It does and it's all officially within the W3C, but there's always the threat that people will go to the wrong working group. So, some of the manufacturers really don't want to work with one group because W3C has had the work and they've had protections. We also have a patent and we have a policy and years of trust for finding consensus, whereas the WHAT working group really didn't have any processes and is run by one person.

Tapscott: So you lost your legitimacy for a while to the WHAT working group.

Berners-Lee: Yes, in just the HTML area.

One of the things that W3C have done which is relatively new is the creation community groups. These are to answer the need for people who just want to get together and build quickly. Anybody can start a community group with three people or more and function for a year, at which point they decide whether they want to become a working group.

Tapscott: Is your personal credibility part of the reason why W3C is viewed as being legitimate? Does legitimacy flow from your reputation?

Berners-Lee: I think so, especially among the geeks initially. When engineers look at the way the web's designed they really appreciate it's decentralized. It doesn't have a center, it doesn't have a single point of control, it doesn't have a single point of failure. So they look at W3C as a place where those properties are defended, and when they join they'll find themselves in meetings with people who also appreciate those properties, without which it would not have been able to scale.

Tapscott: There are many issues facing the whole ecosystem. What does net neutrality mean to you?

Berners-Lee: You find some people deliberately try to confuse the issue. Simply put, if I take the money to be kept in our internet, for giving quality service and you pay some money to get the web with the same quality of service, then you and I can communicate irrespective of discrimination.

You and I can communicate over the internet, no matter who you are. So, if I pay for a certain bandwidth, for example, certain reliability from, say, a cable company in the US, then, and you're an independent film producer and you put up a movie. If your internet gets bogged down, the company is allowed to drop packets when it just can't deliver them. It's also allowed to say, okay, video is very wasteful of packets so we're going to drop the video packets first but we want to preserve the audio, or preserve people's telephone calls. This is just network management, because that's what customers want. So, the internet should work as the customer's agent, if you like, doing what you or I would want.

So that is network management, and that's fine. What violates network neutrality is when I'm downloading a movie from you and my cable company says, hold on, we're a cable company, we sell videos too, and you should be getting your movies from us. We have our preferred suppliers of movies with whom we have deals and so we, officially or unofficially, just quietly drop packets going to the competition. That's a violation of neutrality. It would also be a violation of that neutrality if the cable company refused to deliver a packet going to or from a website which talks about evolution, for example, or refused to deliver, or slowed down packets going to a particular political party.

This is important. Network neutrality is about the web being an open market, so anybody can participate, anybody can sell content, or anybody's blog will be accessible. Obviously people like Netflix pay for a massive amount of bandwidth because they've got a huge amount of downloads going from their place. They put a lot of money into the system. But if you've paid for bandwidth to allow me to view a video from your little movie site, then you should find it just as easy. There should be nothing impeding it, there should be no commercial or political bias in the delivery of the packets. That's what neutrality is about.

Tapscott: How is this ecosystem going to deal with this issue? How do you see the neutrality issue unfolding?

Berners-Lee: The web will be 25 years old in March 2014, and as part of the anniversary, we'll try to raise the awareness of the need for net neutrality as a fundamental basis for democracy and a market-based economy. We need to reach people who just haven't really thought about it before so that they understand the importance. We want to raise awareness so that countries start doing what Brazil is trying to do, putting in a charter for an open internet. I met the government minister in Brazil who was trying to push the charter through. He feels it's very important for Brazil in order to have a functional economy and culture. Some public officials are trying to push back on it because they'd much prefer to be able to block access to sites they don't like, and monitor which sites individuals use.

Tapscott: So when it comes to net neutrality, there is a multi-stakeholder model intersecting now with states. Do you want to influence states to adopt your position? States have certain powers such as the monopoly over a military force or the right to tax.

Berners-Lee: Yes, so they have the ability to give, for example, a telco, a monopoly. When they do that, they have the right to demand features such as universal access, so that it costs the same to get a telephone installed anywhere in the country.

Tapscott: When you think about technical standards for the net and the web, overall this ecosystem has been effective. But when you get into the policy and political domain, it's a lot less effective. There's little or no agreement on all kinds of these issues. Could you comment on the technical issues versus the broader policy issues?

Berners-Lee: Well, I suppose, the technical issues have been developed in international multi-stakeholder environment. But laws are traditionally done in a hierarchical national environment. There hasn't been a lot of international collaboration about putting together charters such as Brazil's. If you want to put together a charter for your country then you have to take into account that countries are very different. In the US you would have to talk about "the rights of every American." This view would have little traction in Mexico. And in Britain they don't even have a constitution.

So policy work ends up having to be tailored to individual countries. To get the idea of Internet rights accepted, we need to build international awareness of these issues. Obviously the NSA revelations by Snowden have helped. Government attempts in the Middle East to control the Internet are also raising awareness.

You've read about the master switch. People who are wondering who's got their master switch and when would it be used. So we have to have an international exposure to raise awareness but action at the national level to encode it.

People have always enjoyed the net being a fairly regulation-free place because the early ISPs got it. I was talking to an Australian ISP that completely embraced the notion of neutrality. They said that all they wanted to do was deliver bits. In effect they said 'I act as ISP we deliver bits for you where you want them delivered fast and where I'll be able to serve you. We don't want to discriminate, we're not going to try and force you to pick websites. That's not our business and it's not appropriate. What we want to do is just be the best provider. And we don't want to act on the government's behalf blocking websites. That takes equipment and employee time.'

Tapscott: Okay. So, these technical issues are technical issues and it's a lot easier to achieve an agreement internationally, but also, you don't need countries to adopt a lot of this technical stuff.

Berners-Lee: Yes. You need the companies, and a lot of them are pretty international, though I've stopped using the word international for this discussion. I call W3C non-national. Nations don't really come in to it. It's not a function of the nation, it's not based on a nation, and it's not part of a nation's system. So, the developments have been non-national whereas international suggests communication between nations. International efforts tend to be top down and bureaucratic because they're hierarchical and therefore old school.

Tapscott: Tim, many thanks for your time.

Berners-Lee: All right, cheers.

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