01-02 Generalities Standards

(0:02) Well, let's look at generalities, and let's see a little bit about standards. So, (0:06) the first important thing with standards is to understand how networks work, how (0:13) they function. We need to have some agreements on how things are done.

Just like in (0:19) everyday life, in general, everything has standards. We have standards for, for example, (0:25) document sizes, credit cards, ID cards, IDs, (0:30) everything has the same size. And the reason for this is to make life easier for us, and, (0:36) for example, wallets know what size the slots should be so that the cards fit.

(0:42) So, in all areas, we have standards, and networks are no different from this. (0:48) Standards allow us to have diverse providers at a given time. If we didn't have (0:53) standards and bought a computer with a proprietary type of plug, then when (1:00) we want to connect it to any outlet anywhere, we wouldn't be able to connect it.

(1:05) So there are standards even for those things that sometimes we might think are very simple, (1:13) very small, or very obvious. So, for everything, we have standards, and there are two types of (1:18) standards in networks. These apply in other areas as well.

These standards are (1:23) de JURE standards and de FACTO standards. De JURE standards are standards that have been (1:31) promoted by a standards organization. Standards organizations like, for example, (1:37) ISO, EIA, well here in Colombia, IPONTEC, but just as we have this, there can (1:54) be many other organizations that promote standards.

These de JURE standards are standards (2:00) that have gone through a review process. Usually, there are committees, so, for example, (2:07) the particular organization, the standards organization, or something like that, and then (2:13) they have committees of various types, and so in one of those committees, a technology is evaluated, (2:19) in the case of networks, a technology is evaluated, and based on what that committee says about this (2:25) technology, a document is generated that is the standard. That document then goes through another (2:31) plenary, so to speak, and when the entire standards organization approves (2:37) that document that was created, then the standard is published. So, it completes the standards (2:44) organization's circuit, and it's ready for everyone to follow the standard. So (2:50) examples of standards that might be very well-known worldwide, like ISO 9001, which (2:58) are quality standards. Just as there are those, in networks, we also have standards, and (3:03) we have a lot of standards that we will be discussing throughout the course (3:08) and will see some of them.

In the case of de facto standards, de facto standards are also a document (3:14) created for people to use a technology in the (3:24) case of networks, a technology in the same way, but the process to become a standard is (3:31) different. A de facto standard is not officially a standard; a de facto standard is one that has been (3:36) promoted by a company or a group of organizations not of (3:42) standards but of something else, and little by little, people have considered it a good practice (3:51) and as they consider it a good practice, they start to follow it, and when it gets promoted and (3:58) many people know about it and find it useful, then everyone accepts it (4:03) as a standard, but there is no worldwide organization defining it as such. (4:10) So these standards are documents that people or organizations that are not necessarily (4:17) standards organizations have proposed for something, and people start using it until (4:29) it becomes popular to do it that way, and others start to use it too.

(4:37) For example, one might think of things like Tomcat. You know that Tomcat is a (4:49) dynamic web server that serves to run Java applications, and it runs on port (4:54)

8080. So there is no worldwide standard that says that port 8080 is for Tomcat, but it became (5:02) popular everywhere that this port was for Tomcat, and now everyone assumes (5:09) that the Tomcat port is that one.
It is not put in an official standards document like the (5:16) de JURE standards, but it is something that becomes useful, and most people use it in that (5:25) way. Just as there is that, there are many other examples that could illustrate situations (5:34) like this, and some of these de facto standards that I mention can become de JURE standards. An example of this is how a network works for companies that we will (5:46) discuss later, say, a network for home, for example, for home or business.
That network (5:55) started as a de facto standard, and then a group of technology companies proposed (6:01) a way of doing things, and people began to think it was a good way, a good (6:05) way of doing it until it became so popular that a standards organization considered it (6:12) a good practice and turned it into a de JURE standard, going through, of course, the whole process I described here. So that's the difference between the two. There is an organization, let's say the way (6:26) the internet works a little bit.
On the internet, what is sought is a kind of, like a sort of, in some (6:33) way, an intermediary between these two. They don't want something that becomes popular and that people (6:42) can decide whether to use or not, but they also don't want a rigid de JURE standard that (6:48) has to go through a big process. And in the case of the internet, the one that generates standards is (6:54) called IETF, which stands for Internet Engineering Task Force, and what they (7:03) did was create documents called RFCs, which are Request for Comments, that (7:10) aim to propose as a standard that everyone uses that method for whatever is being (7:18) promoted here so that everyone uses it in that way on the internet, and if they believe there could (7:24) be recommendations for improvement, they let the IETF know so that they can improve it.
So it's (7:29) kind of an intermediary between de JURE standards. Alright. We'll talk about it in class.