En: Hello

Es: Hola

En: My name is Steve Bratt.

Es: Me llamo Steve Bratt.

En: Thank you very much for inviting me to participate in this conference.

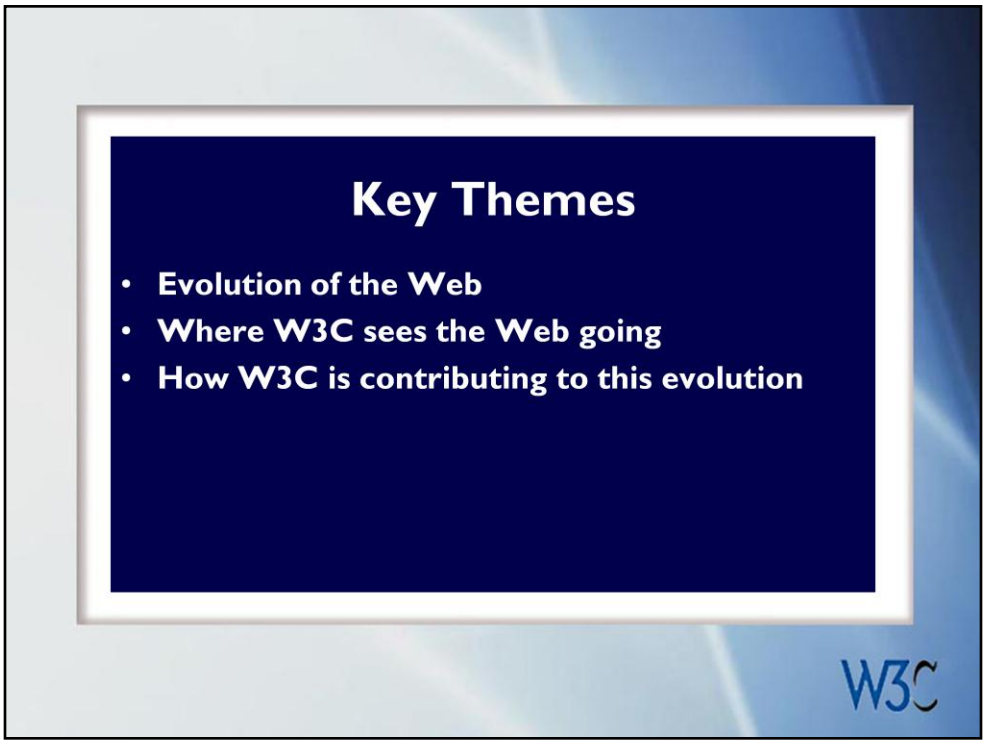
Es: Muchas gracias por invitarme a participar en este congreso.

En: I would like to present in Spanish, but I don't want to annoy your ears.

Es: Me gustaria continuar mi presentacion en espanol, pero no quiero dañar sus oidos.

En: So I'm just going into English now.

Es: Asi que continuare en ingles.



As you listen to my talk today, I hope you will take away three key themes:

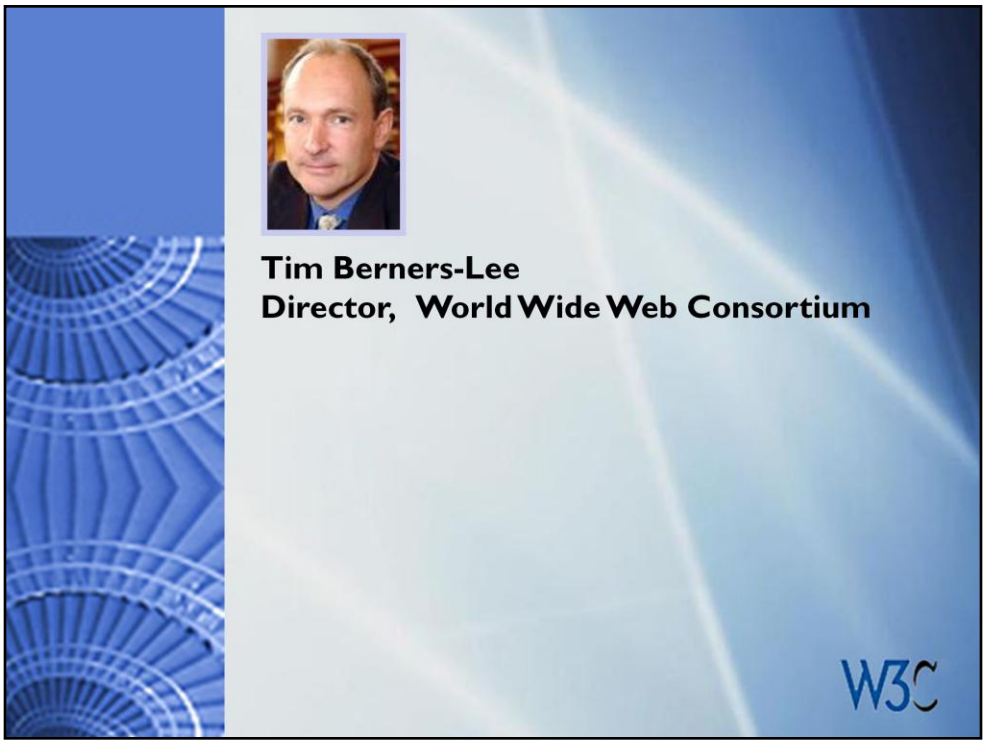
First, is that the Web is not done yet by any means. It is, and continues to be, in a state of constant evolution.

Second, I would like to share with you some of the exciting directions for the Web. And talk about some of the emerging technologies that will make a difference in the world in the future.

Third, it is my hope that you will better understand the important work that many dedicated people at the World Wide Web Consortium, or W3C, are doing to continuously improve what is arguably the most powerful communications tool the world has ever known.

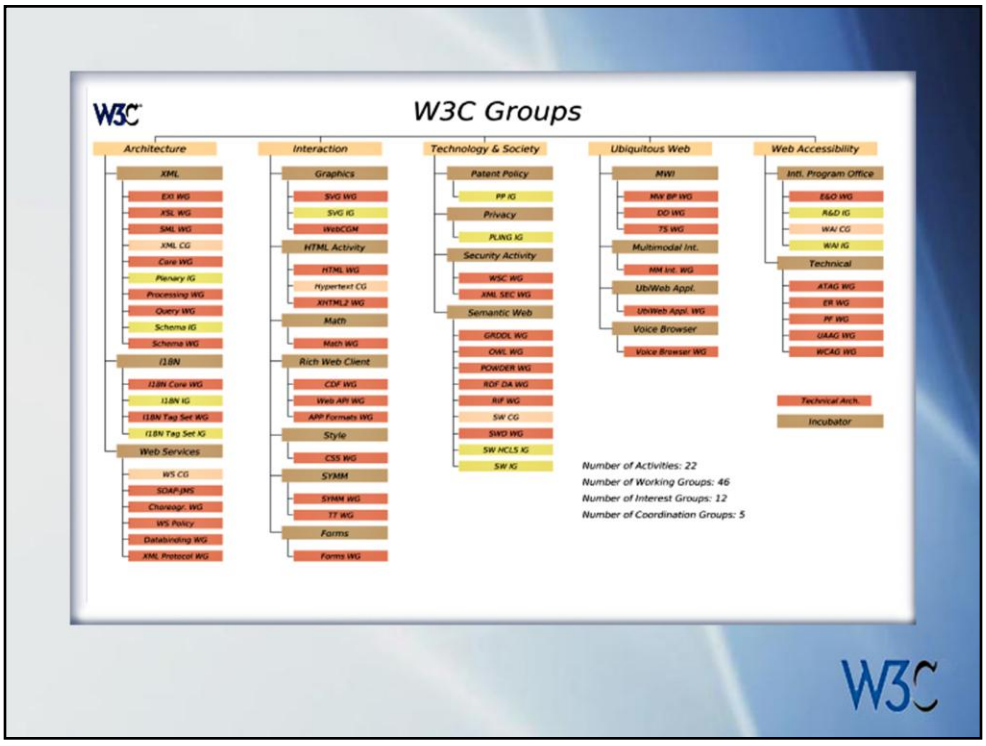

W3C Mission
"Leading the Web to its full potential."
W3C is a collaborative community where experts develop the standards that make the Web work, and that make the Web accessible and useful to people around the world.
W3C

Read slide



One of the many things I enjoy about my work at the World Wide Web Consortium is the opportunity to discuss and drive the future of the Web with many visionary technologists in our community … in particular, with W3C's Director Tim Berners-Lee, who invented the Web in 1989.

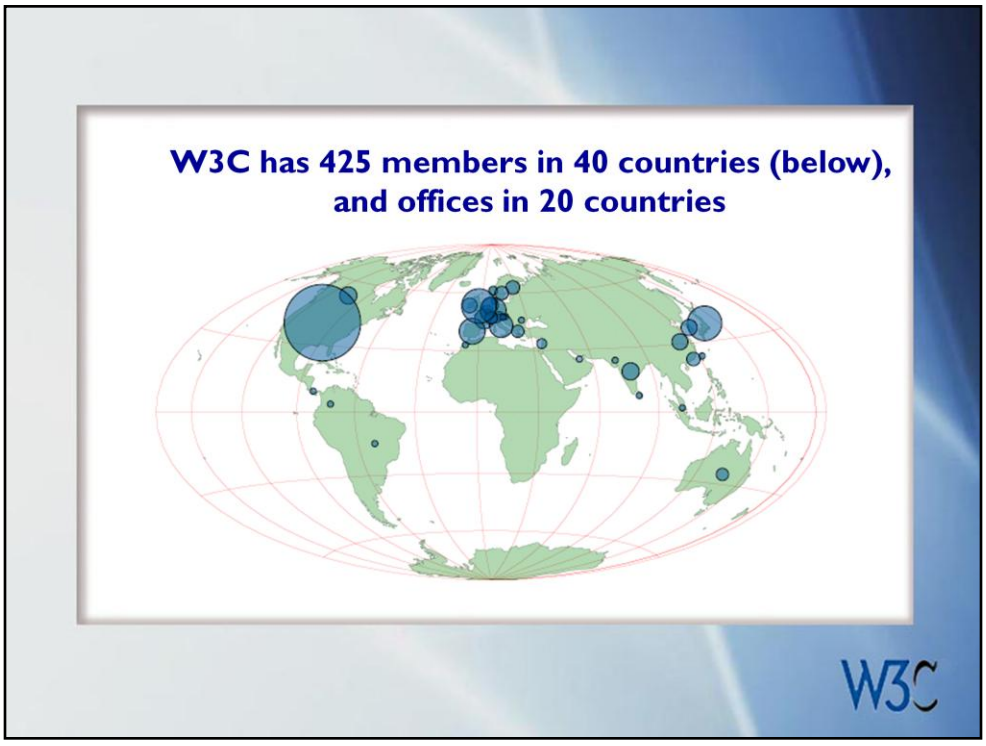
At W3C, our staff, member organizations, academic researchers, and many others in the Web community, not only think about what's possible today, but work hard to achieve these possibilities.



More than 1,500 technologists are working within 60 W3C groups to develop Web standards aimed to lead the Web to its full potential.

This is no small task given the many competing interests within the Consortium, coupled with the fast pace of change driven by continuous innovation around the world.

It is through conversations with these many diverse audiences that we all learn to listen to different ideas, and come to consensus about how to make the Web more useful and more interesting.



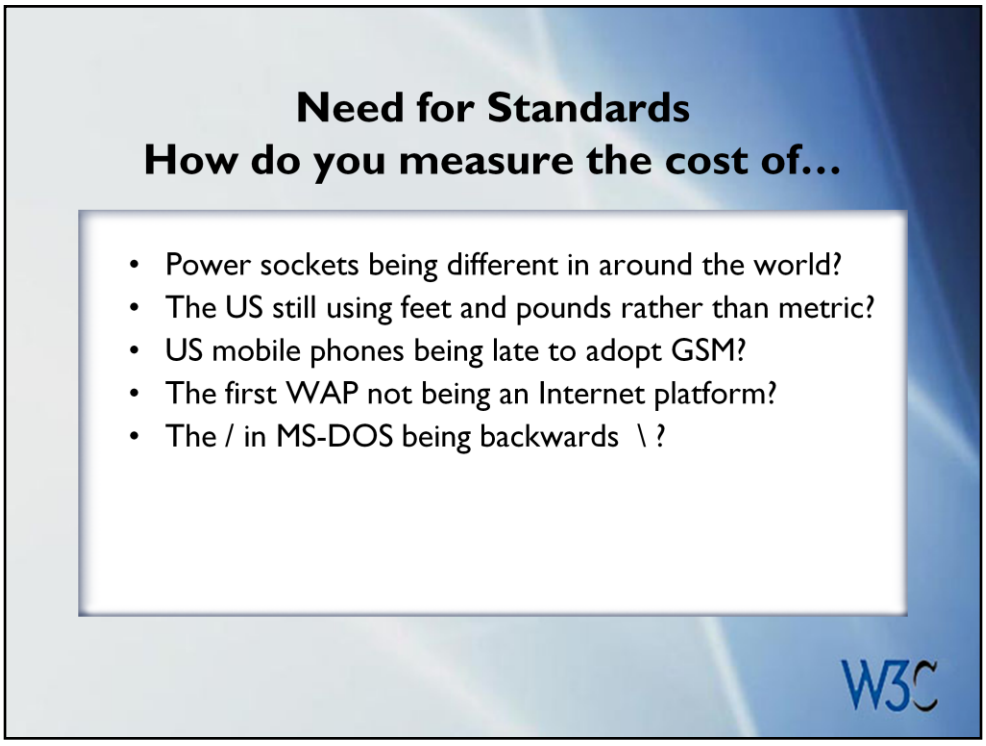
There about 425 Member organizations that drive W3C. The circles on this map give an idea of the number of Members in the more than 40 countries in which they are they are headquartered.

W3C also has 20 offices around the world. I am based at the Massachusetts Institute of Technology in Cambridge, Massachusetts. Consistent with the direction of world developments, the last four offices that we have opened were in India, China, South Africa and Brazil. More coming soon.

W3C's 425 Member organizations represent a wide range of businesses and industries, academic institutions and governments. This is obviously, just a small sampling.

W3C is pleased to have a number of Spanish Members in the Consortium. Companies, such as Telefonica and Telecable, as well as fine institutions such as Fundacion CTIC, which hosts the W3C Office in Spain, are contributing to the work we do.

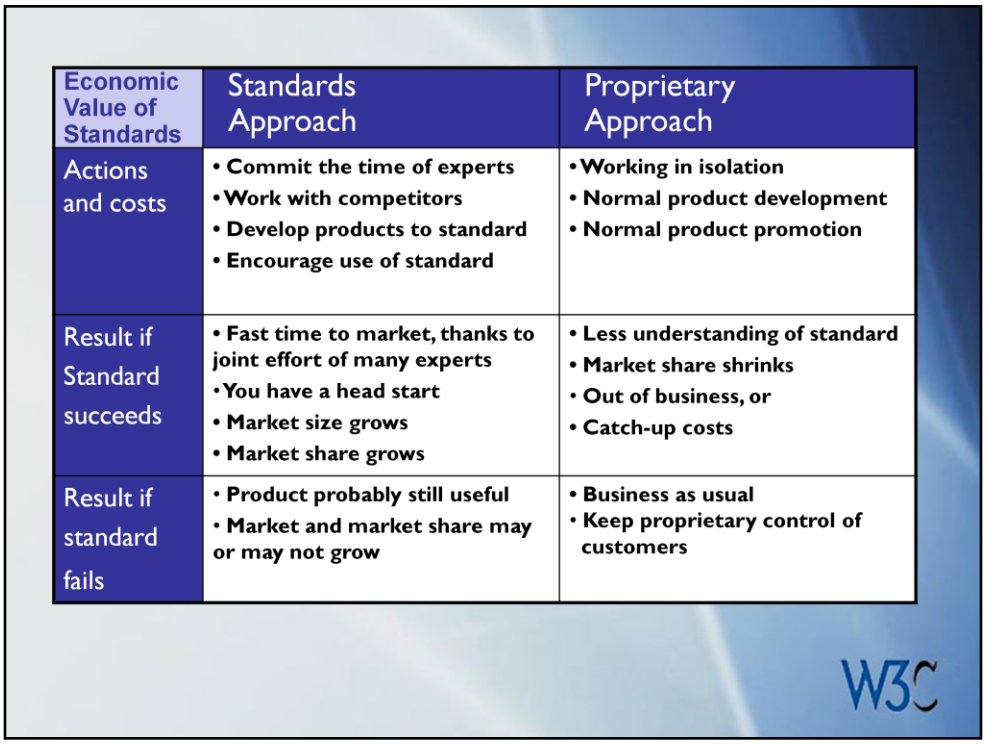
The manager of our Spanish office is Encarnacion Quesada. Encarna or I would be very happy to talk with you if you'd like to learn more about working with the W3C community.



We see that there is a high need and interest in Web standards, rather than going down proprietary paths.

For example, how do you measure the cost of…

[Read above]

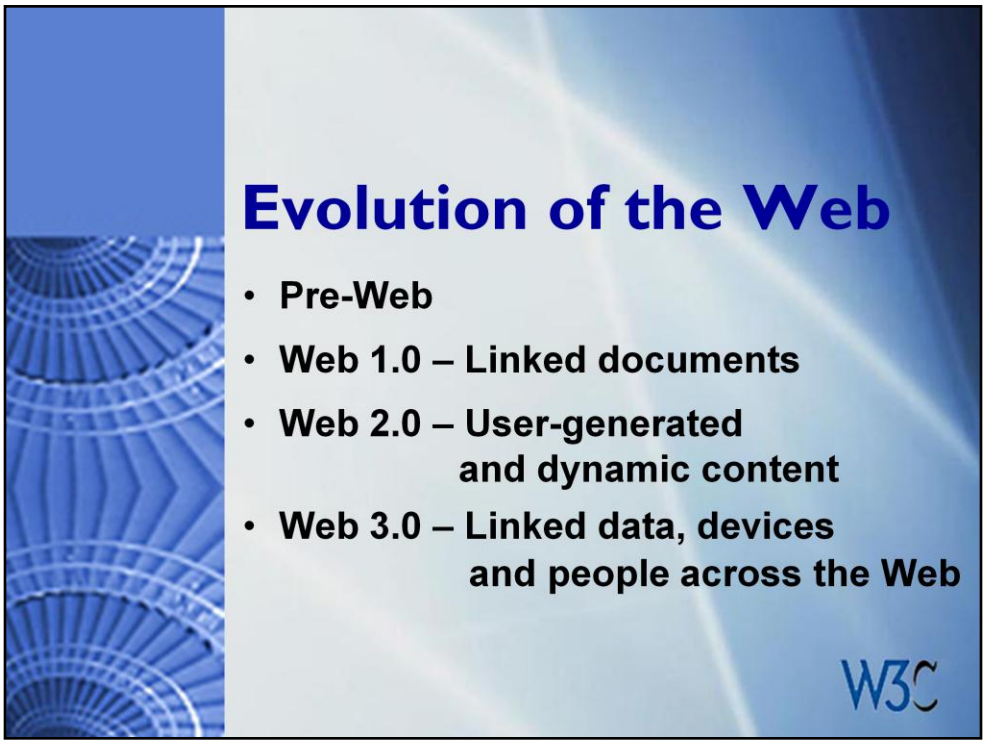


Economic Value of Standards	Standards Approach	Proprietary Approach
Actions and costs	• Commit the time of experts • Work with competitors • Develop products to standard • Encourage use of standard	• Working in isolation • Normal product development • Normal product promotion
Result if Standard succeeds	• Fast time to market, thanks to joint effort of many experts • You have a head start • Market size grows • Market share grows	• Less understanding of standard • Market share shrinks • Out of business, or • Catch-up costs
Result if standard fails	• Product probably still useful • Market and market share may or may not grow	• Business as usual • Keep proprietary control of customers

Explain table.

Clearly, standards help to create markets. And standards help companies increase and sustain market share because they can compete on better applications and services that will be widely adopted because they interoperate with other technologies.

Unfortunately, the same challenges of what we call “walled gardens,” lack of interoperability and lack of openness still exist today, especially in areas such as social Web sites, video on the Web and mobile applications. We’ll return to these topics in a few moments.



So, what does the Web look like today, how did it get there, and where is it going?

To simplify things, we'll use the typical software versioning nomenclature system

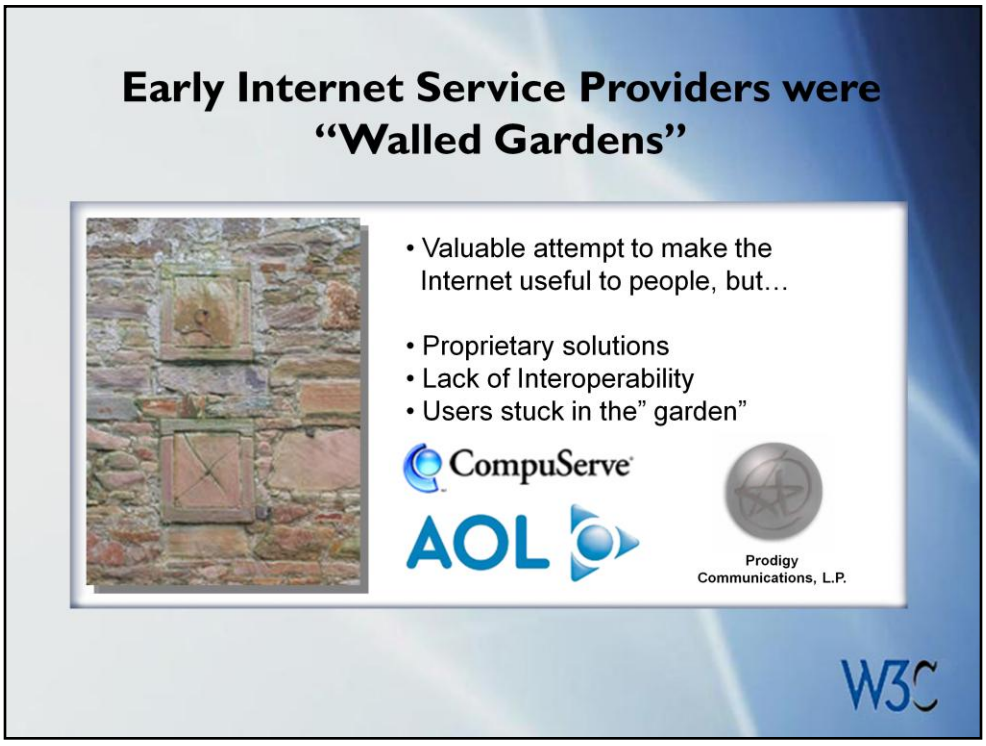
Web 1.0

Web 2.0

Web 3.0

.. Plus, we'll look at life before the Web (was there ever such a time?).


Pre-Web
W3C

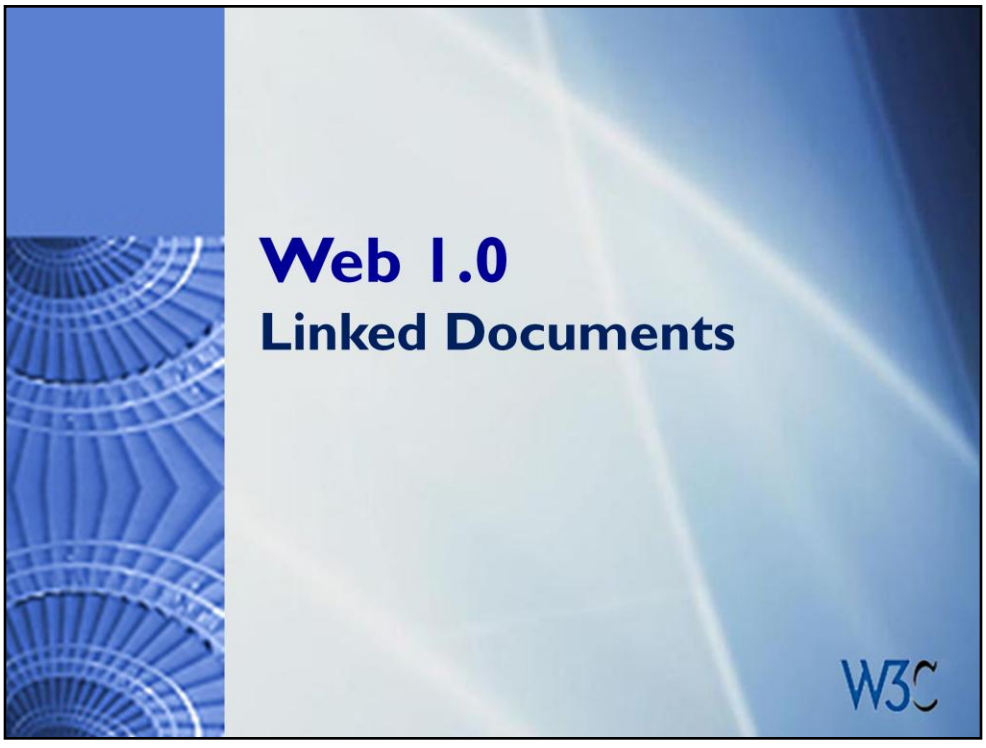


To fully appreciate why open standards are so important to the Web, let's think back to the mid-1980's to early 1990's, when there were Internet service providers such as AOL, CompuServe, and Prodigy providing the first interfaces to the Internet to the general, non-geek population.

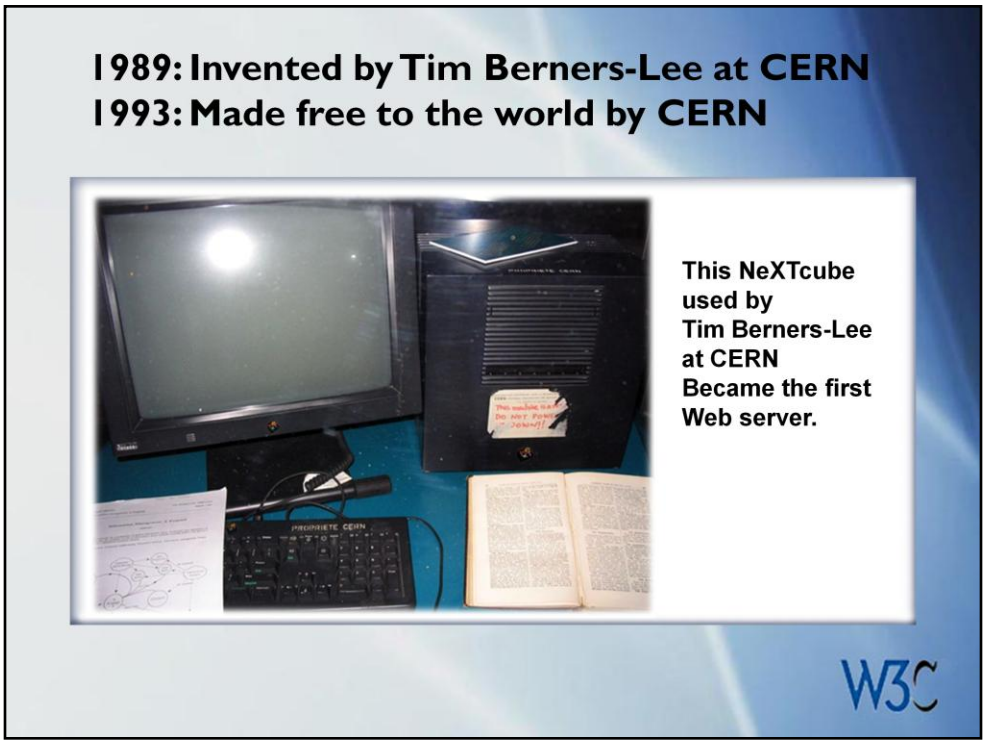
In those days, content was strongly controlled by the providers. So was user behavior. For example, Prodigy customers could only easily connect with other Prodigy customers.

We refer to this concept of lack of interoperability and freedom as a "walled garden."

While there were short-term advantages to these "walled garden" approaches, there were, and still are, also some longer-term risks and costs to not adopting a more open platform.



Next, let's take a quick look back to the early days of the Web – Web 1.0 if you will -- which was about generally static documents, linked together in simple ways.



Tim invented the Web in 1989, when he submitted the first proposal and design to colleagues at CERN, the high-energy, particle physics lab in on the French-Swiss border.

Like most ground-breaking inventions, the Web was defined by 3 simple, yet elegant, technologies:

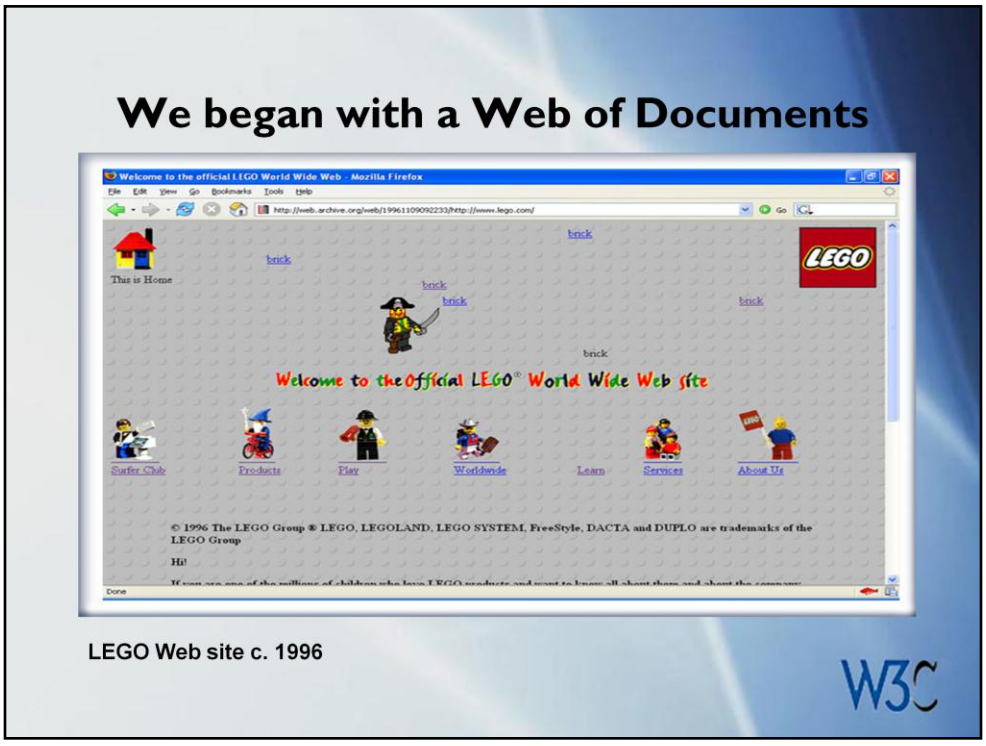
• Uniform Resource Locator or Identifier (URL or URI) to uniquely identify resources (e.g., documents, data) on the Web, and know where to find those resources.

•Hypertext Markup Language (HTML) to represent content in terms of Web pages, and to express links

• Hypertext Transfer Protocol (HTTP) to move Web data across the Internet

It became clear to Tim early on that there was a fourth fundamental element required for the Web to succeed. – openness. Just a few weeks ago, on 30 April, we marked the 15 year anniversary of Tim Berners-Lee's invention being made freely available to the world by CERN.

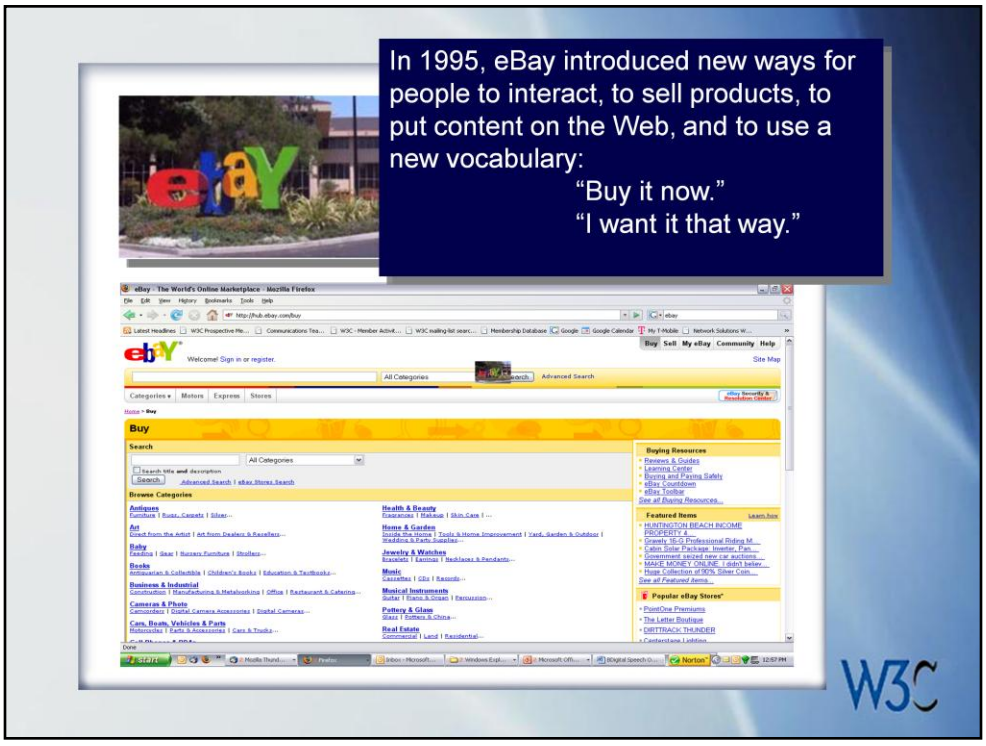
This momentous decision helped pave the way for the Web as we know it today – a global, open, interoperable, medium for communication, education, commerce, entertainment, and improved well being.



Here is what the toy manufacturer LEGO's Web site looked like 12 years ago, in 1996.

It's very static "brochure ware."

Here is the LEGO site today. It's highly interactive and engaging. There is video, and a full e-commerce platform as well as information sharing among the company, its partners, and customers.



Then came eBay in 1995. The company established new normative patterns for how people behave online, and how they can come to trust each other (or not). Consumers developed an expectation that they should be able to buy and sell anything on the Web in a trusted way.

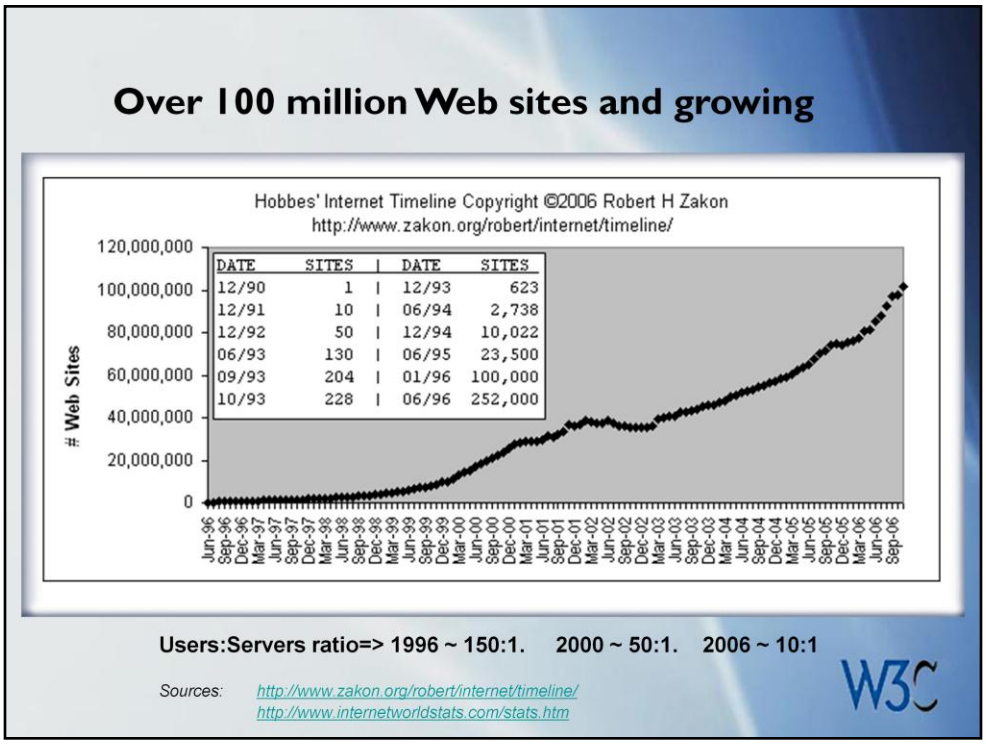
eBay even created its own vocabulary with terms like, “Buy it now; I want it that way.”

And of course in 1998 Google's innovations with algorithms offered a significant improvement in both simplicity and performance for search on Web. Though I oversimplify by saying this … Google's famous "Page rank" approach in based on the power of standard HTML links across the Web, and adding additional semantics to say that a link is a vote popularity.

Google search raised expectations further for how consumers wanted to use the Web to find information, products, and services, and people.

Google also raised the stakes for companies to adopt more sophisticated online business strategies and marketing programs to help their products and services get the highest Google rankings.

This in turn created revolutionary new online business and advertising revenue models, as well as new markets.



So we can see that with the advent of Web e-commerce platforms and Web services, things really took off for business and a whole new global market opened up.

The Web made also it possible for small businesses to compete online with large companies.

The Web grew big, and it grew fast, with over 100 million active Web sites in the world, and growing. There are also now over 1 billion people using the Web. There is still at lot of growth possible, given that the Earth's population is now 6.7 billion and growing.

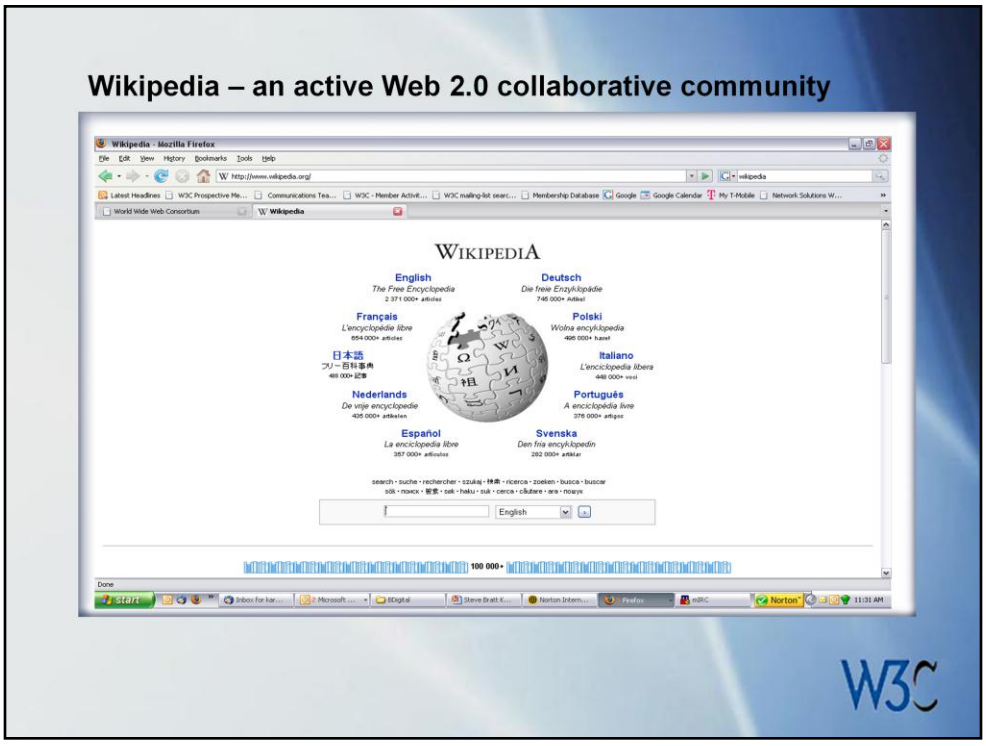
Which brings us to Web 2.0.

While businesses were migrating to a Web platform and integrating their legacy data systems online, a whole new generation of Web users and Web developers began to actively collaborate.

In 2004, Tim O'Reilly put forward a definition of Web 2.0 as a ".. business revolution in the computer industry caused by the move to the Internet as platform .."

I like to think of Web 2.0 as a Web where users are content providers, as well as consumers; and where the content is more dynamic than it was in Web 1.0.

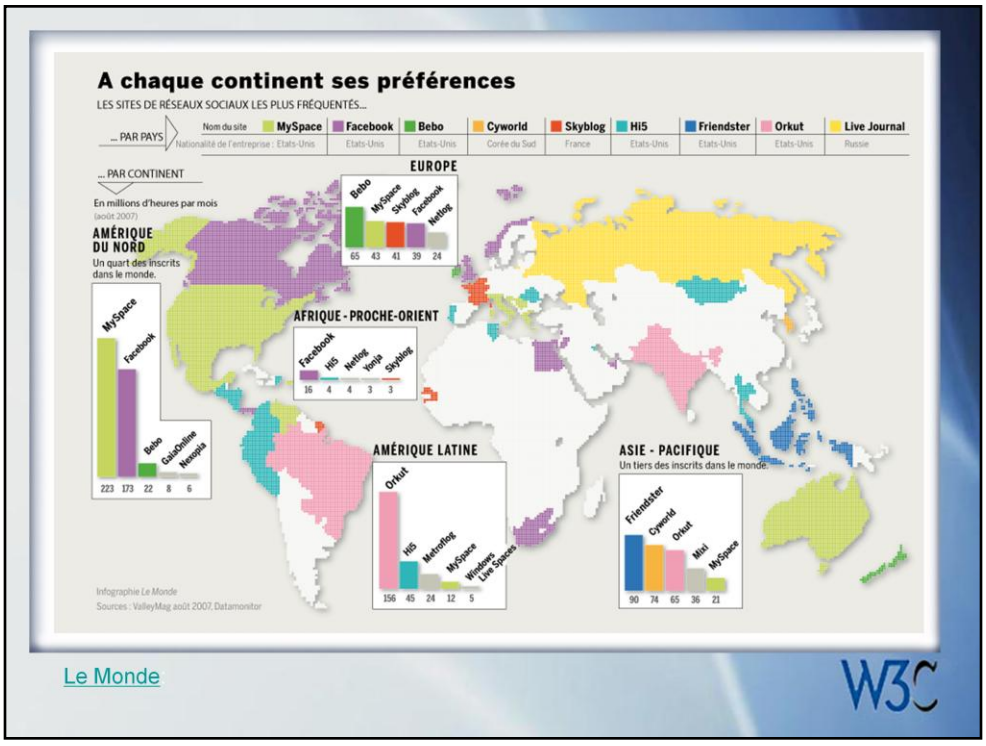
Furthermore, the technologies that make Web 2.0 work, with the exception of javascript, have been or are being standardized at W3C.



Wikipedia community epitomizes the Web 2.0 concept of collaborations and collective intelligence of communities of people.

Wikipedia, of course, has a definition for Web 2.0 as, "a term describing the trend in the use of World Wide Web technology and web design that aims to enhance creativity, information sharing, and, most notably, collaboration among users."

This definition is closer to the original vision that Tim Berners-Lee had for the Web as a truly collaborative, and interactive medium of global communication and information sharing.



Le Monde

Social networking sites such as FaceBook, LinkedIn, Passado, Bebo, Orkut and MySpace have revolutionized the way people interact through the Web.

Businesses are looking at the social networking and collaborative aspects of Web, and are looking at ways to make these really useful for their companies and customers.

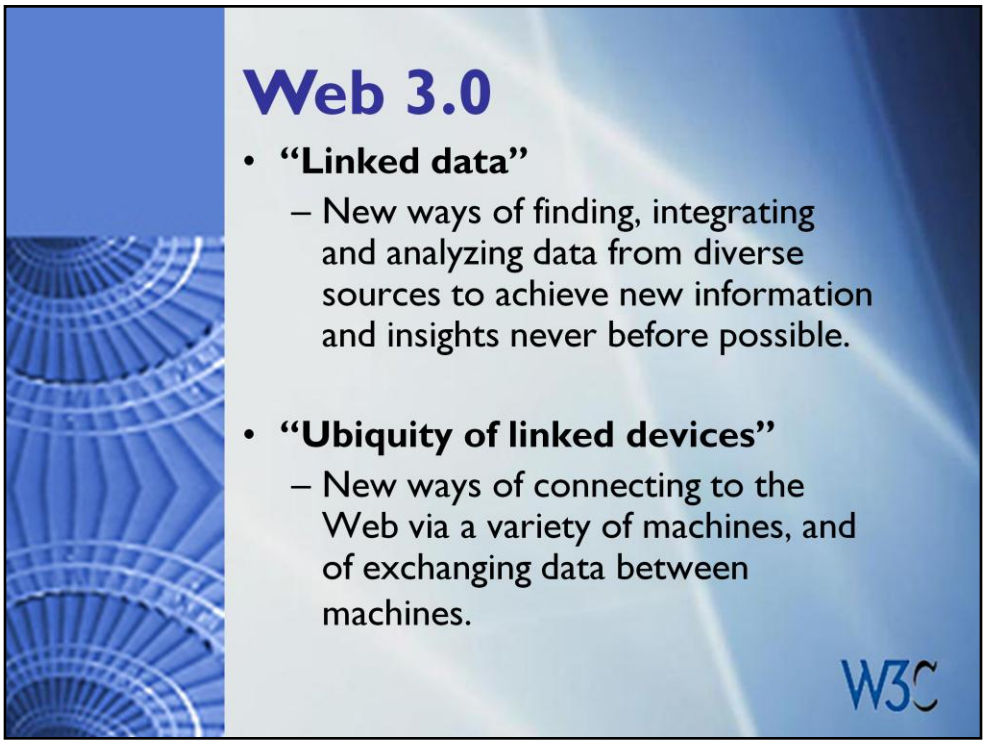
Companies must make decisions about whether or not to blog, whether they wish to have people make comments about their products that can be viewed by others. Companies are seeking ways to make the voice of the customer more useful to their businesses, and to better meet customer needs and expectations for how they want to do business with their companies.

YouTube has certainly helped to define Web 2.0 collaborative communications.

As of April 2008, a YouTube search returned about 80 million videos and about 4 million user channels.

According to IDC, user-generated video uploads per day on all video sites will increase from five hundred thousand in 2007 to nearly five million over the next four years.

Fantastic things are happening on the Web. However, in many cases, Web 2.0 sites are “walled gardens” again, in that they often do not make it easy to link in (to keep their customers), out and between different sites, and sometimes employ proprietary solutions and extensions which further inhibit interoperability.



To borrow a phrase from video world, let's "fast forward" to see what the world of Web 3.0 may look like.

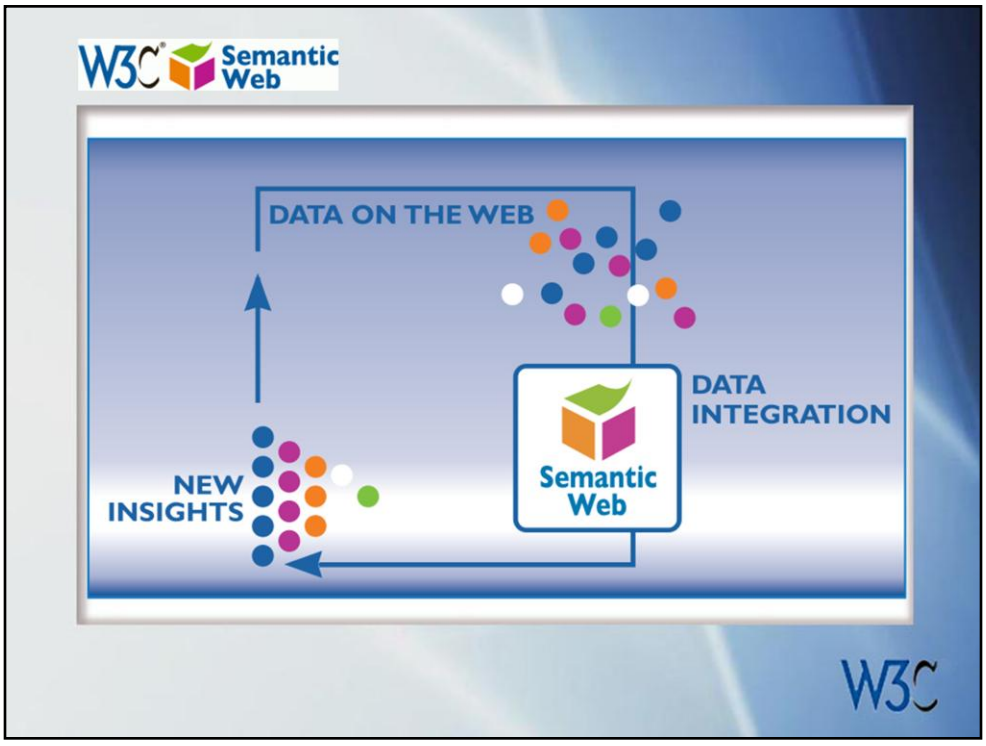
The next evolution, if not revolution, in the Web will be about linked data and linked devices.

New ways of integrating and combing data to achieve information and insights never before possible.

And new ways of connecting to the Web via a variety of machines capable of finding, combining and analyzing data.

At the W3C, we are standardizing the emerging technologies that will enable Web 3.0 to become a reality.

These include: Semantic Web, Video on the Web, Mobile Web and Ubiquitous Web.



First, is the Semantic Web.

The Semantic Web provides a common framework, based on URIs, that allows data to be linked, shared and reused across applications, enterprises, and community boundaries.

Using W3C Semantic Web technologies, a person or a machine can start off with one set of data, and link to what will become an unending set of open databases around the world. These database will not be linked by wires, but by the fact that data in different places are referring to common things: a person, place, idea, concept, etc.

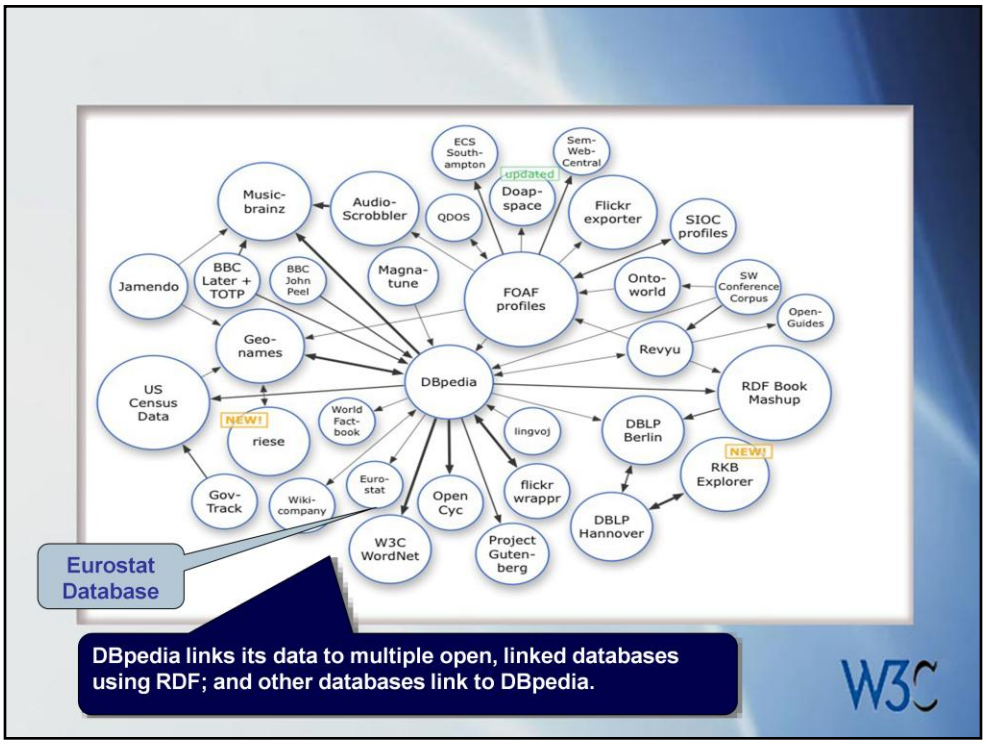
Let's look at some applications of Semantic Web technologies that promise exciting new possibilities for the business community.

First, there is a large and growing “linking open data” community that is doing some marvelous things.

One of their projects includes, DBpedia -- a community effort to extract structured information from Wikipedia and to make this information available on and linked across the Web using Semantic Web technologies.

DBpedia allows you to ask sophisticated queries against Wikipedia and to link other datasets on the Web to Wikipedia data.

So how does this technology work?

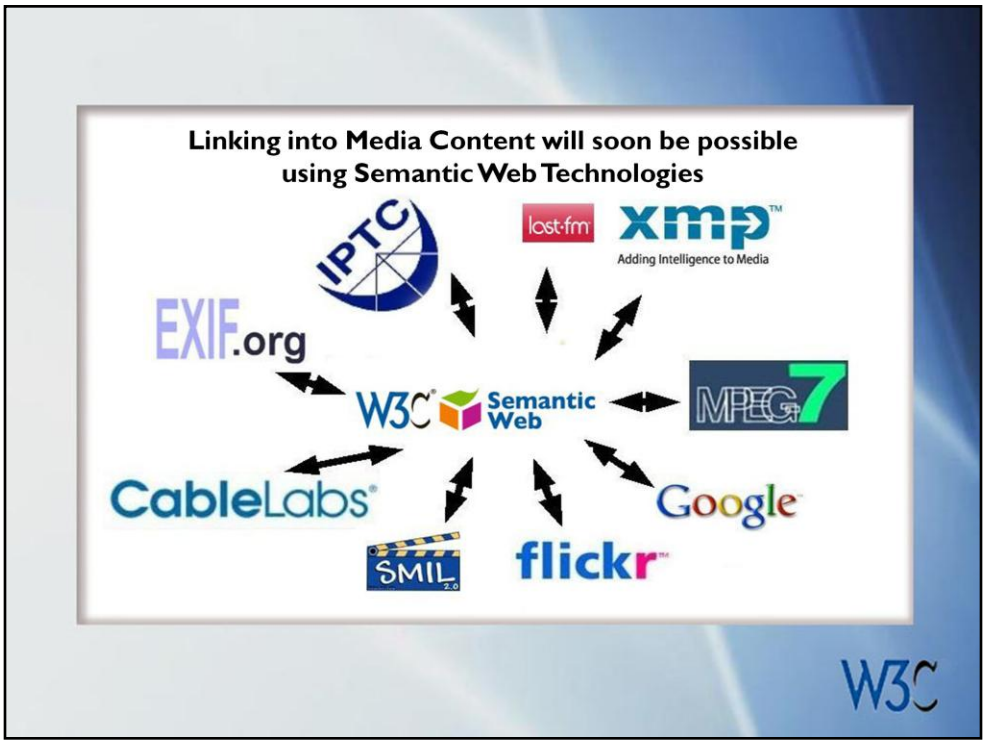


DBpedia links its data to multiple open, linked databases using RDF, a Semantic Web technology. Other databases in turn link to DBpedia.

In the previous slide we saw a Wikipedia entry on Spain. Eurostat also has an entry on Spain. The arrows show that the DBpedial entry has a link to the Eurostat entry. Given this, the computer can easily link one to the other to extract all kinds of other new information.

It is important to note that with Semantic Web technologies, the original data can stay in its original form such as XML, relational database formats, Excel, etc. RDF provides an abstract layer, independent of the underlying data format, which can then be queried with another Semantic Web technology called SPARQL. … Kind of like SQL for the Web.

There is a very active community that continues to work behind the scenes on Dbpedia and the linking open data project., making the open databases around the globe available via RDF, and interlinking them. DBpedia is a community project started less than two years ago, that should soon, I believe, lead to new applications that can be used commercially.



Let's look at another area where Semantic Web technologies are starting to be applied, and how this will lead to exciting new possibilities for the business community.

The area of which I speak is the work to make video a real, first-class linked citizen of the Web.

W3C will soon launch an exciting, new Video on the Web initiative. There are three specific areas that we will be addressing:

First, we will develop standards to identify and link to and from portions of video clips, or media fragments as the technologists call them. Again, what will make this possible will be the use of fundamental Web architectural principles, regardless of the underlying audio or video codec in use.

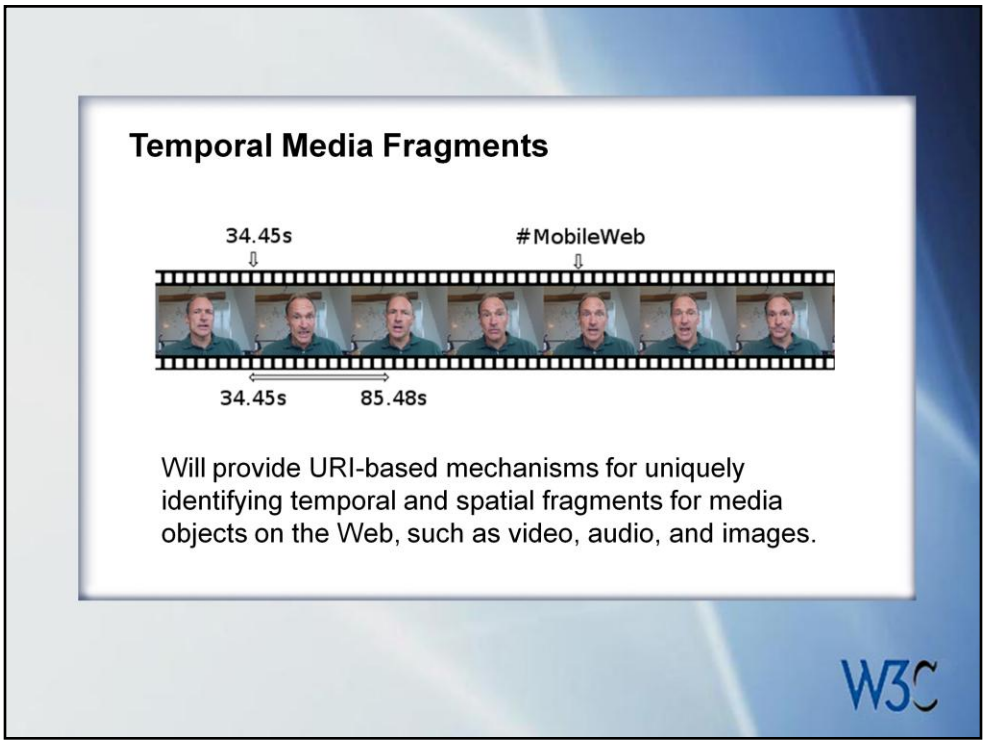
Second, we will develop standards to support description, annotation and search of video content. This will not only enhance user experiences and improve accessibility, but will also provide new advertising revenue models.

And third, we will collaborate with users and creators of video content to establish best practices for authoring and using video on the Web.

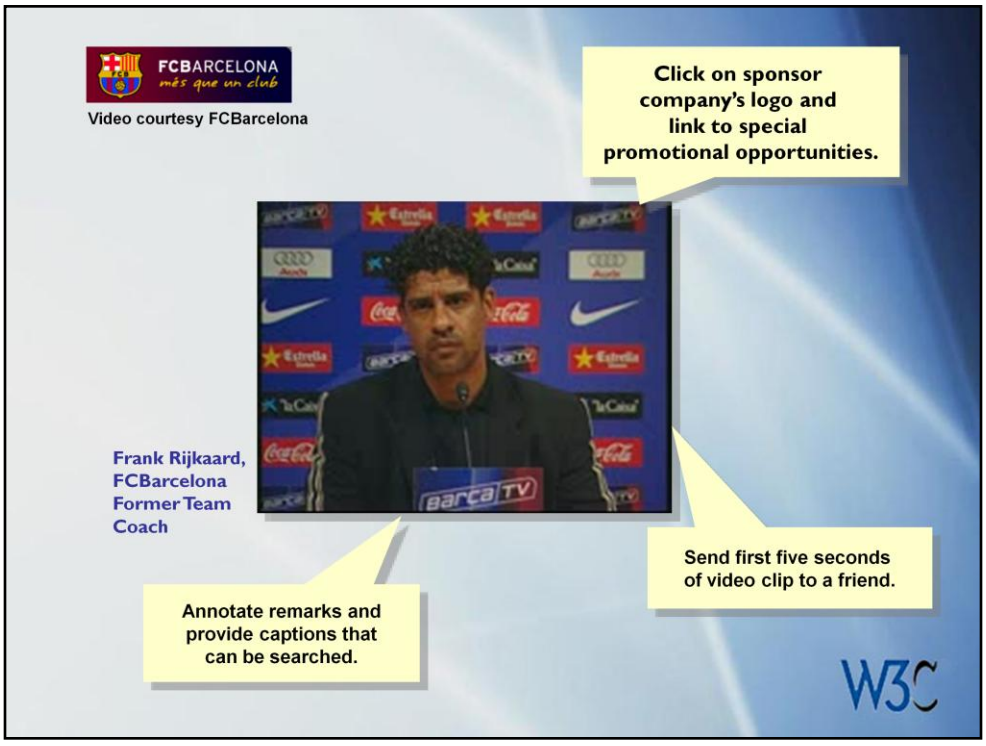
Let's take a look at some examples of what be coming soon.

Identified areas within a video are called “spacial fragments”. Standardizing the way to do this will prove useful for many applications, including education, science, business, security, advertising, social networking, etc.

Think of the possibilities when we can link directly from other Web resources into particular parts of a video picture, or click on a part of a video to link to other Web resources.



The ability to click and search just a particular time period of an entire video clip will be enabled by standardizing the syntax for “temporal media fragments”. Again, these will use Semantic Web technologies based on URIs.



I found this video clip before Frank Rijkaard made his farewell appearance as coach of FC Barcelona last week.

Nevertheless, the point is that soon you will be able to annotate and search remarks, or send portions of his comments to a friend.

For sponsors, in the future, you will be able to click on the company's logo and link to special promotional opportunities.

And Web architecture principles and Semantic Web technologies will make all of this possible, interoperable, and ubiquitous.

Improving the quality of healthcare is another wonderful application area for Semantic Web technologies.

For the past two years, W3C has an active interest group in the health care and life sciences. Member companies from health care providers, pharmaceutical companies, academic researchers, and solutions providers have come together to develop use cases and to apply Semantic Web to solve real problems in their fields.

One area being worked on is better information sharing in the health care community.

Let's take a look at one of many possible scenarios where Semantic Web technologies could improve the quality of life for families and individuals in the health care setting.

Suppose…

Your **child** is in the hospital after surgery for tonsillitis.

Her doctor prescribes an antibiotic, but your child has an **adverse reaction** to this drug.

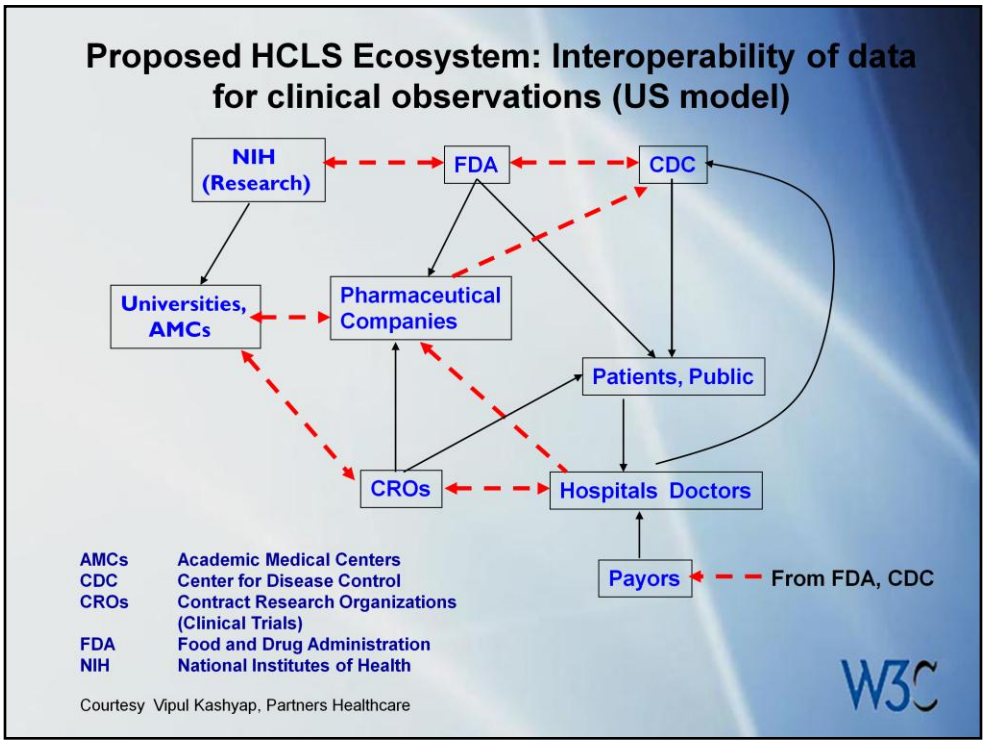
The doctor enters this information into the hospital's database, and follows patient privacy protocols.

The doctor asks a question that will query Semantic Web-enabled databases in a **healthcare ecosystem.**

The query results suggest that your daughter is allergic to this drug.

The doctor's alert triggers further drug research.

Now let's take a look at the technology behind the scenes that makes this scenario possible.



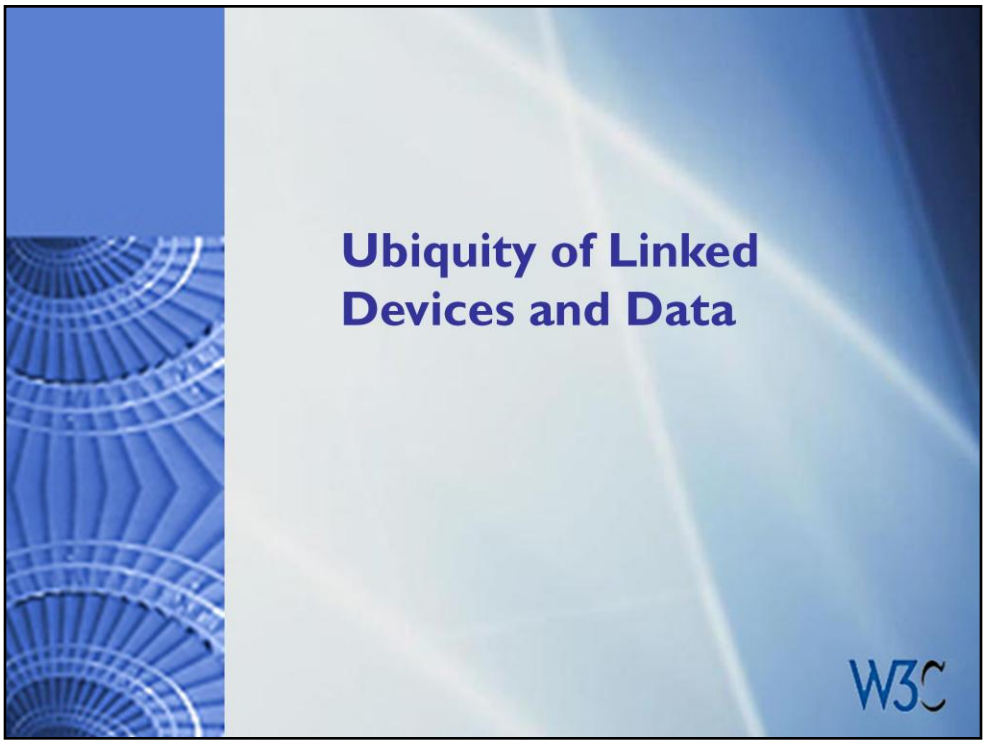
As we saw with the DBpedia example, the goal with HCLS is to be able to access the relevant data which is spread over a number of different databases.

The various queries have to integrate this data. They can do this using Semantic Web technologies.

Looking at this example, the patient data would be in the hospital's database. The information about the drug and the possible allergic reactions would be in the pharmaceutical database and perhaps in one of the university databases.

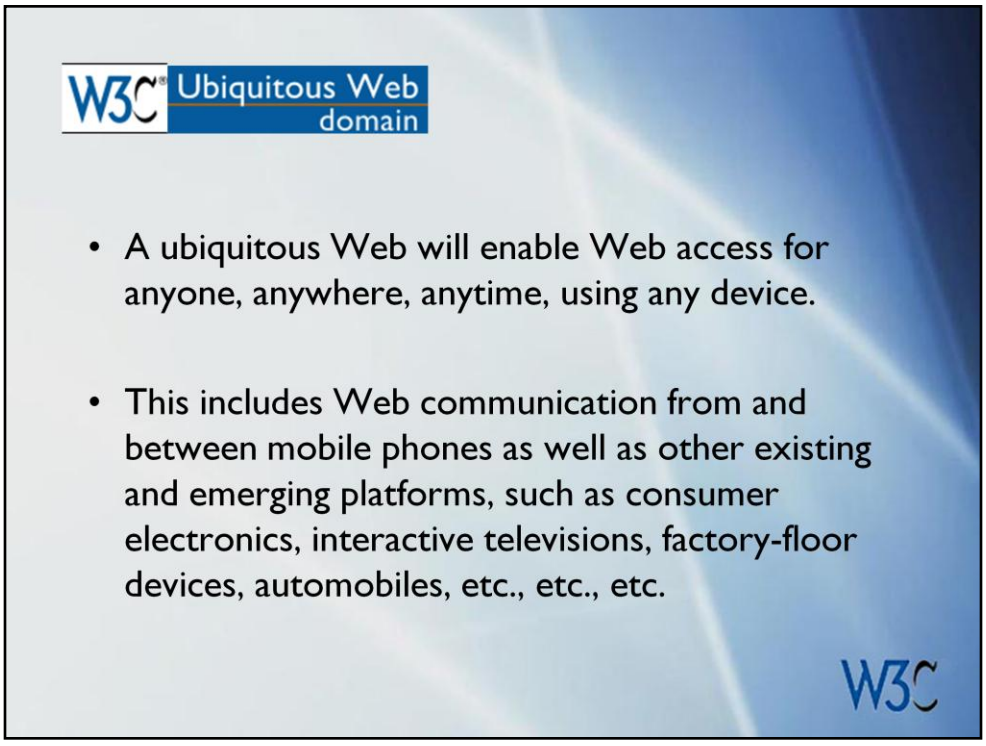
For this issue, all of these databases could be queried to find the information that the doctor is seeking. The query could be in the form of a precise question that involves the integration of data coming from several databases.

In the near future, this ability to query more precisely will help to improve the discovery of new medicines and the delivery of better healthcare services.



We have talked about Web 3.0 being about new ways to integrate data using Semantic Web technologies.

Data will also be available across many different devices that will access the Web. W3C is working to ensure that the devices, as well as the data will interoperate smoothly.

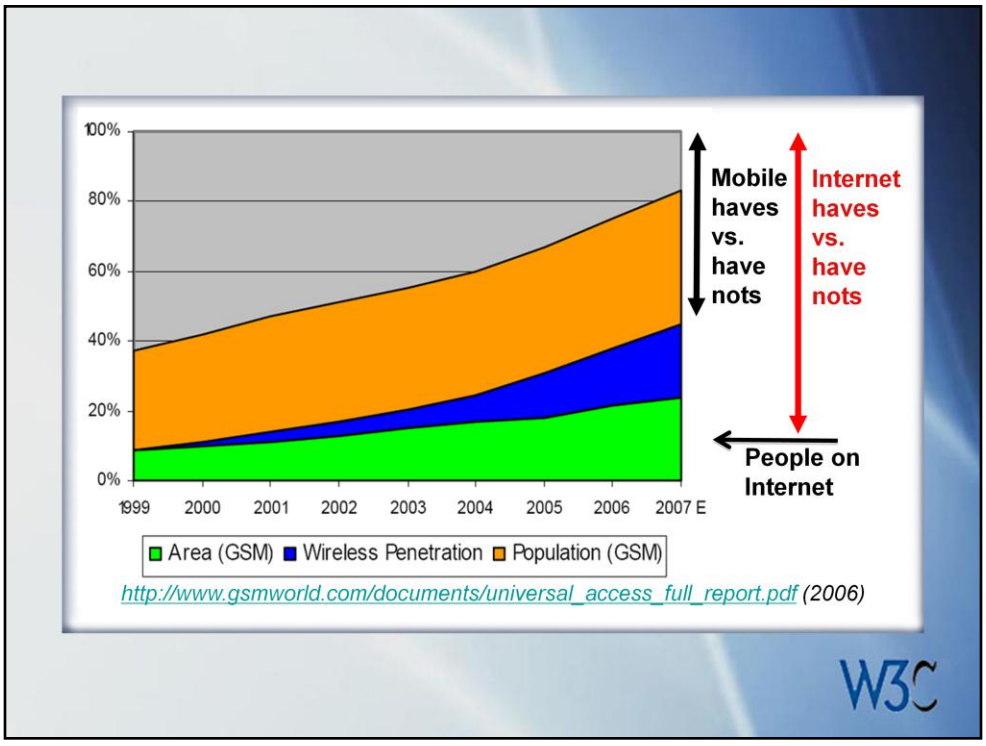


W3C has technologists working in several different Working Groups to enable a Web of linked devices to access the growing Web of linked data.

Our vision is …

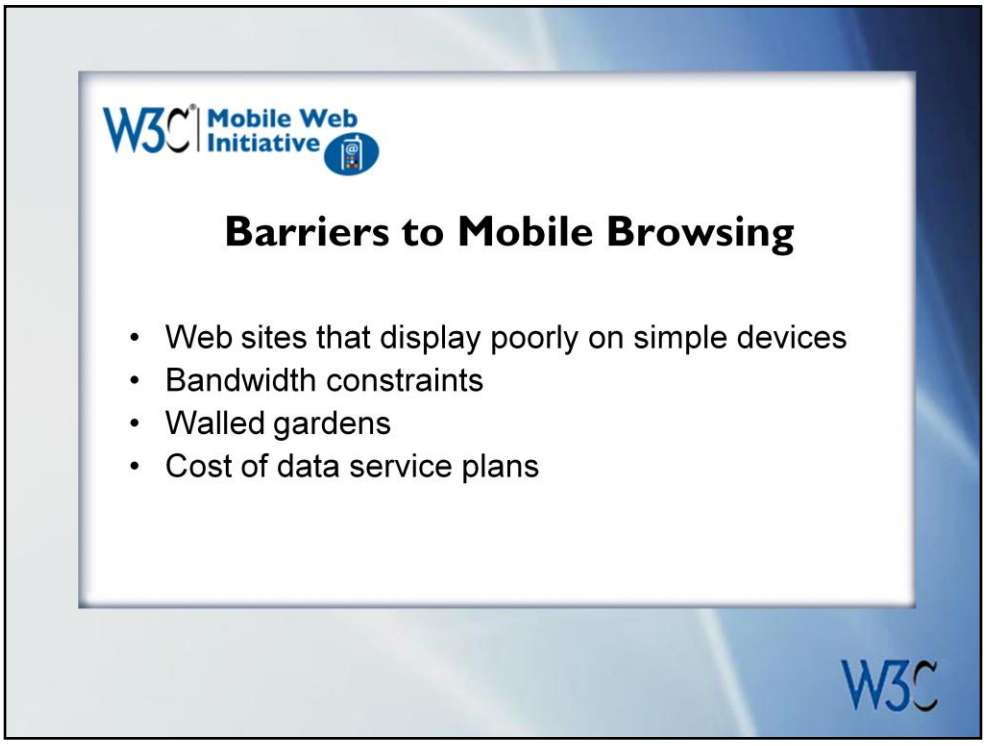
[Read the slide]

Author content once, and ensure that the content is adaptable and useful on the widest possible range of devices.

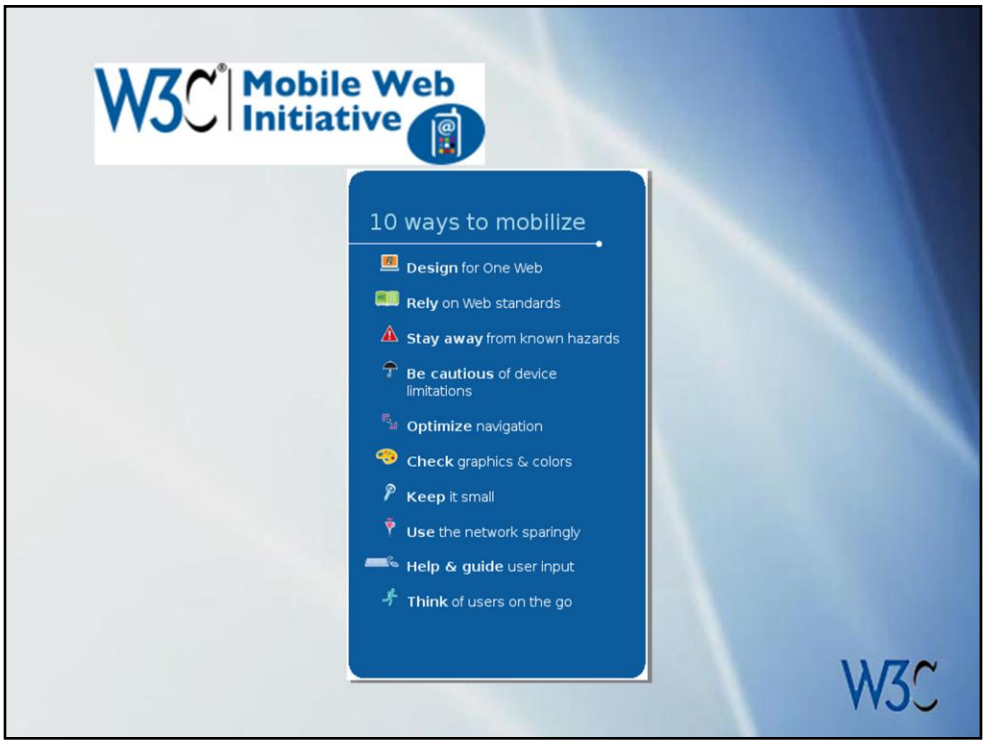


As this chart shows, there are many people who have mobile phones with the potential to access the Web. But many of them are not able to access the Web. But I am very excited about the potential that this chart shows.

[describe the chart]

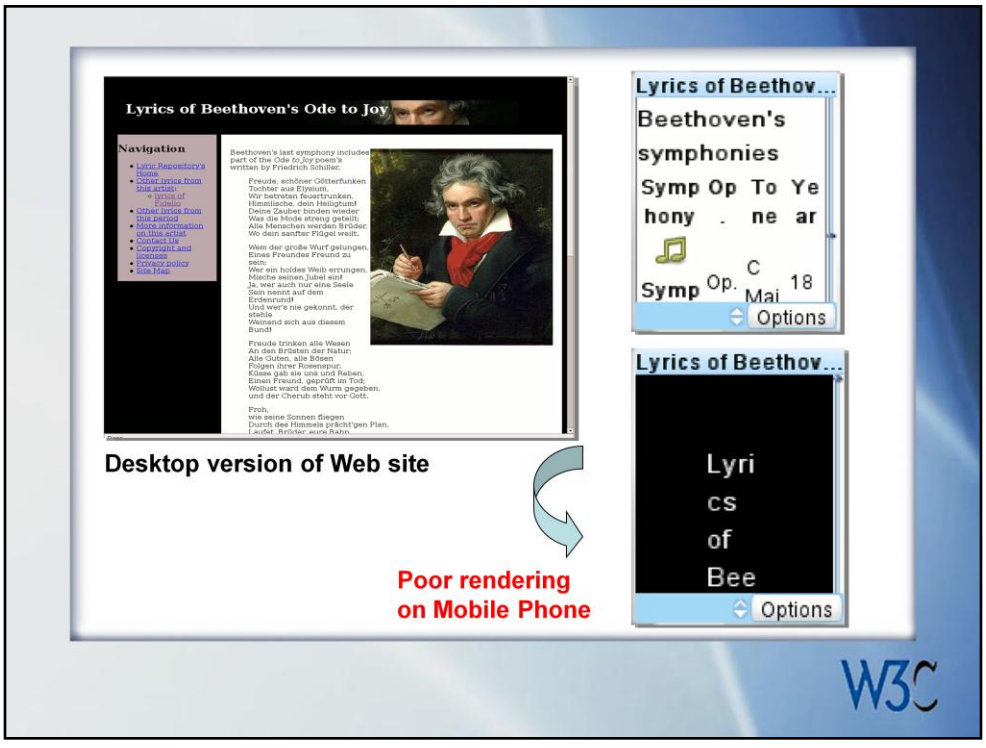


Some of the barriers to browsing the Web on mobile phones include inconsistent experiences, the cost of data, and poor display of content.



The W3C's Mobile Web Initiative has the goal to make access from a mobile device as simple, easy and convenient as Web access from a desktop device.

We have developed best practice guidelines for authoring content for mobile phones.



WRONG:

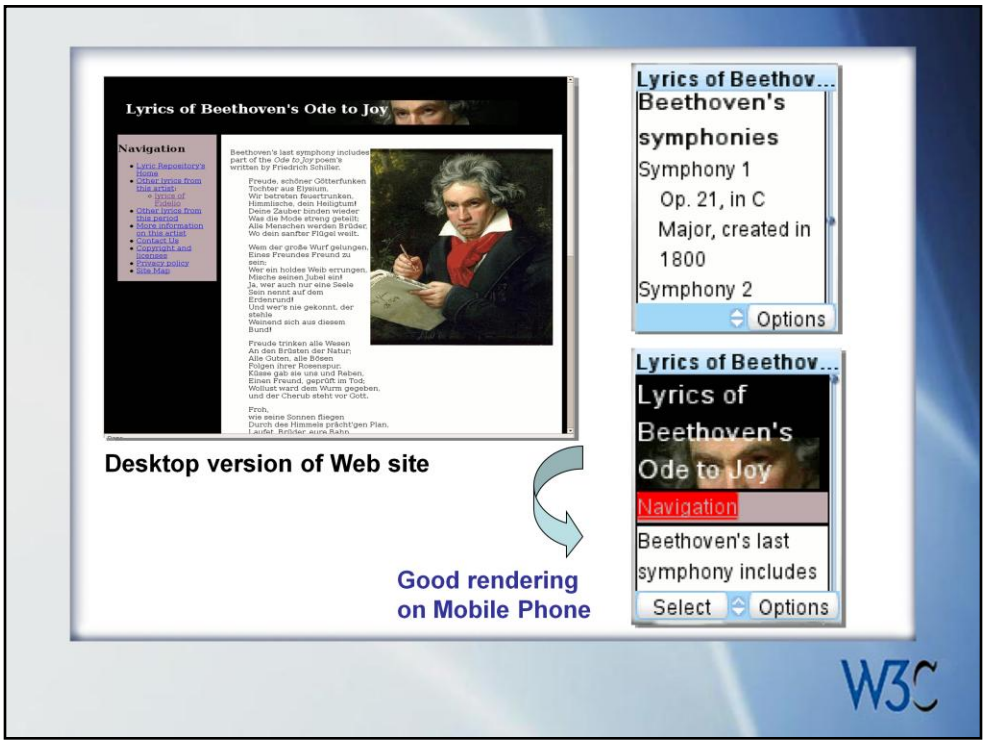
Use of Table Layouts, Images for Spacing

Page size is about 100kb

-1 minute to render page

-1$ to view page

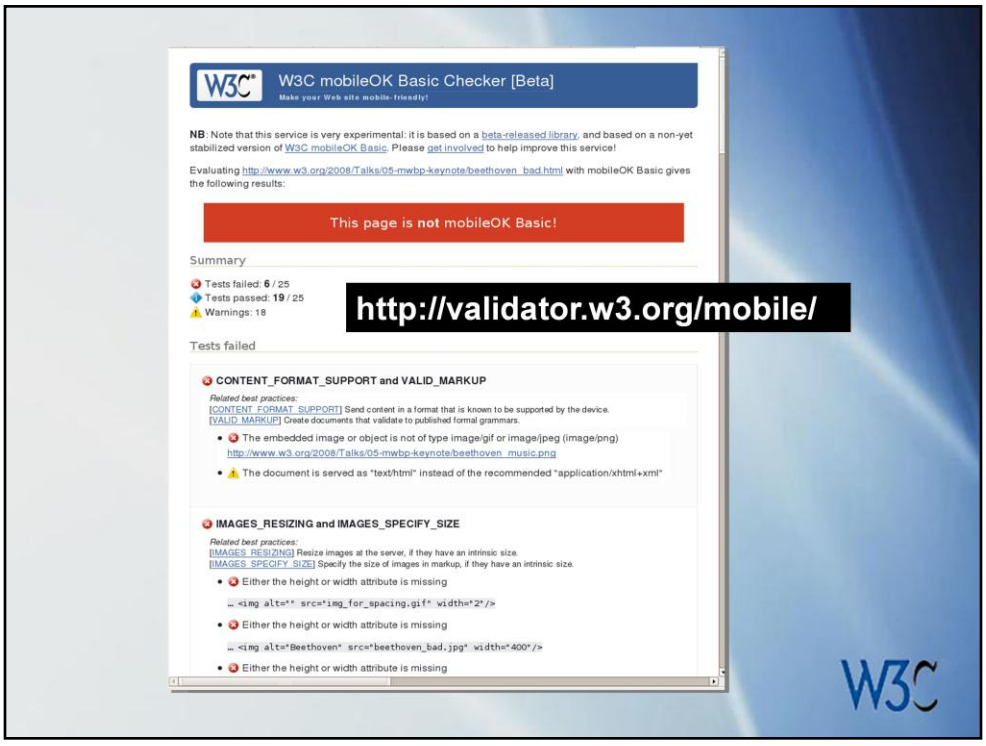
Navigation is not convenient



RIGHT: Following W3C's Mobile Web Best Practices Guidelines

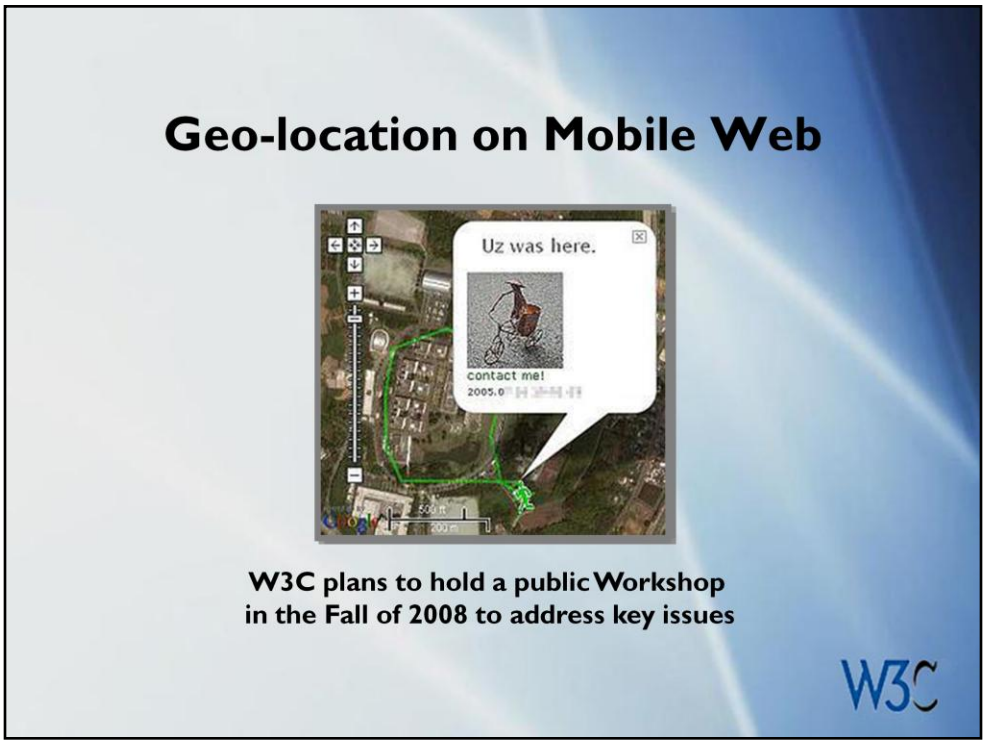
Use of W3C's Cascading Style Sheet Layout (CSS) Standards
-Define background images in CSS
-Separate style sheets for desktop vs. handheld devices, to support content adaptation
-Use smaller images

Page size should not exceed 20kb
Content first: focus on central meaning



There is a new tool for you to check whether or not a Web site has been designed to present well on a mobile phone. It's called the mobileok checker.

It is currently in use and is a helpful tool for Web developers to use.



Another technical area that is part of the Web 3.0 vision is the ability for mobile devices to identify their geo-location.

There are many complicated aspects to this question, including agreeing on one standard set the of technologies to be used, and issues regarding privacy and security that need to be addressed.

W3C will hold a public Workshop later this year on geo-location and the Web. We hope those of you who are interested in this subject will attend.

It's cold outside, and you are returning home from the airport.

Driving home, you use your smart phone or car Web browser to access the Web to:

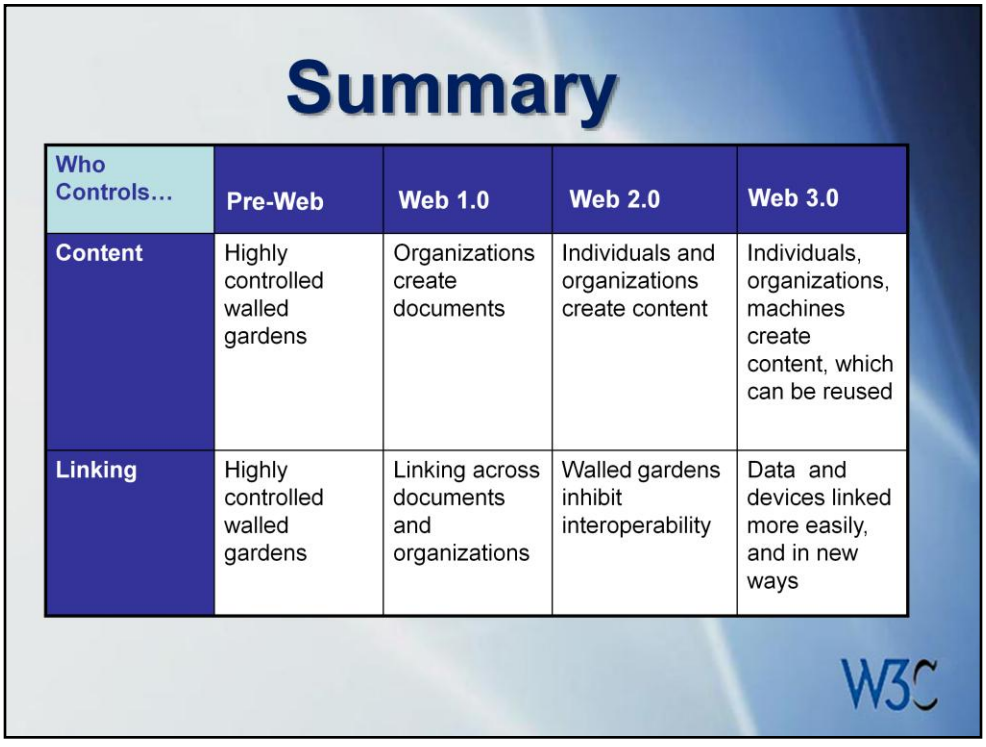
Activate your home heating system;

Open the garage door;

Turn off the security alarm;

Start the oven.

Our vision of Web 3.0 is to link data and devices in new ways to achieve new insights, greater efficiencies, economic benefits, and improved quality of life.



Describe table.

I hope my talk today has given you some context for how the Web has evolved. And I hope it provided a view of what is on the horizon today and tomorrow.

I would like to leave you with some questions to think about, and an invitation.

What are you and your company doing to get ready for Web 3.0?

What investments of time and resources make sense for your company?

Does your organization understand why a commitment to Web standards will help to accelerate the vision of Web 3.0?

Clearly the Web has changed the way we all live, work and play. Web 3.0 will have an even greater impact than what we have seen so far.

On behalf of my friends and colleagues at W3C and the Web community, we invite you to join us on this exciting journey!

Muchas gracias.

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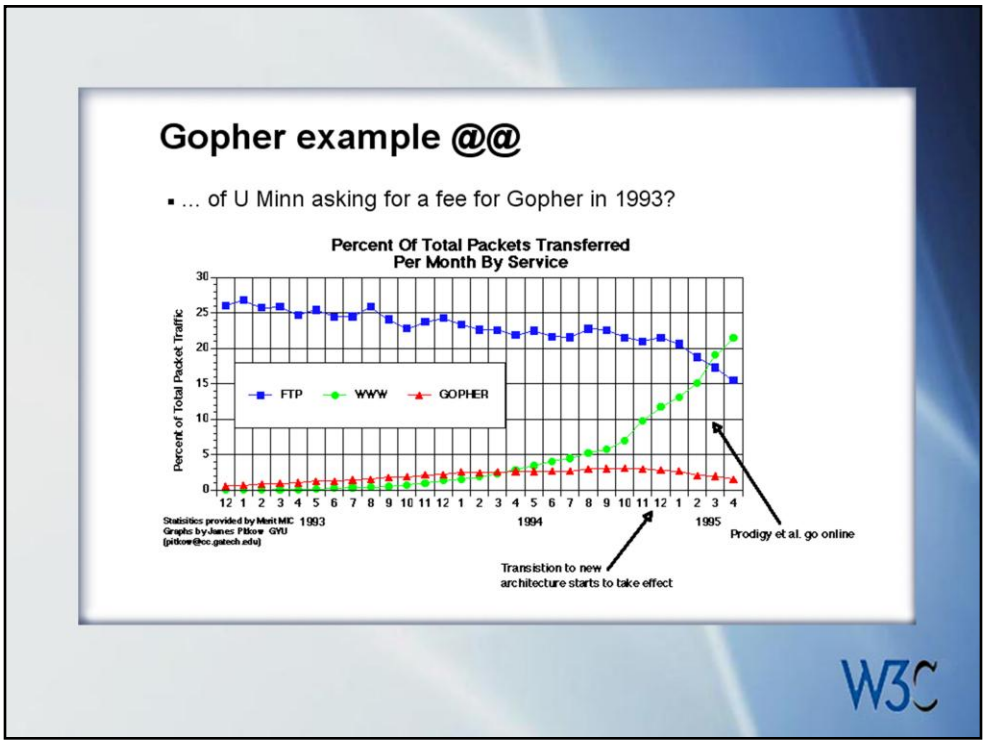
Extra slides



The decision to charge for Gopher was one of the reasons that Tim Berners-Lee urged CERN to make the Web open.

Soon thereafter Tim founded the World Wide Web Consortium to realize the vision of one Web that is open, interoperable and accessible for everyone, anytime and anywhere.