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Good Morning.

119 years ago, George Corliss made the biggest steam engine yet built, 1500 horsepower. It was installed in the vast machinery hall of the 1876 Centennial Exhibition in Philadelphia, the first real world's fair to be located on American soil.

full of an incredible  
variety of machines-

This machinery hall was 13 acres, and the gigantic Corliss steam engine towered over everything.

On opening day, the hall was packed, but it was dead silent. <sup>on Singapore</sup> President Ulysses S. Grant and Emperor Dom Pedro of Brazil each pulled a lever, allowing steam into the cylinders of the Corliss engine.

The big engine made a long, low hiss. Then, the floor started trembling. The huge walking beams -- 2 stories high -- slowly started moving up and down, up and down, and the flywheel started spinning faster and faster, gaining momentum, storing energy.

Then, 5 miles of shafts and pulleys and belts all started moving that energy to the machines in the hall. Three New York newspapers printed their editions in the hall. Logs were sawed for lumber. Wallpaper was printed.

This was where the telephone and the sewing machine met the world. 10 million people came to the Philadelphia Centennial Exposition. In 1876 -- 10 million people.

World's fairs started in 1851 with the Crystal Palace and found a home in Europe with a series of Universal Expositions. In Paris, they left enduring legacies such as the Eiffel Tower from the 1889 World's Fair. The Eiffel Tower still attracts twice as many visitors as the Louvre.

The fair that really captured *my* imagination, though, was the Chicago Columbian Exposition of 1893.

This was where the hamburger was invented and the modern amusement park and the Ferris Wheel. 22 million people came to be entertained, but they also came to learn. To learn about technology -- to learn about electricity.

The show network had 22,000 horsepower of electricity feeding 90,000 lights, and giant motors, and a fair telephone system, and a network of 200 synchronized clocks, and moving walkways, and electric trains.

People came to learn and amuse themselves, but the Chicago Fair (indeed ALL fairs) did more than that. This was where engineers challenged themselves. This was where industry proved it was ready for prime time.

The Chicago fair featured a radical new technology called alternating current -- AC. Thomas Edison had invested time and money in power generation, but had invested his time and money in direct current -- DC. The AC/DC fight was an incredible brawl, with Edison leading the charge for the DC camp. He was wrong, but he had a lot of weight and he told people that DC -- with it's high voltages and shifting phases -- was dangerous and unproven. It wouldn't work. It would pose a threat to the public safety.

A young engineer named George Westinghouse built the AC electrical network for the Chicago Exposition. It was an instant hit, convincing consumers and industry alike. Soon thereafter, Westinghouse won the contract to install his equipment at Niagara Falls and the modern power industry was born.

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World's fairs ushered in our modern era. They introduced millions of consumers to technology that would affect their lives. They challenged engineers to build things never built. They were a showcase for industry.

World's fairs left enduring legacies, from the Eiffel Tower in Paris to Hyde Park in London to the hamburger in the United States. World's fairs were the markers, the tempo, the symbols of the industrial age.

**PAUSE -- COUNT TO 3**

We are -- all of us here today -- trying to usher in a new age, an information age. The Internet is as fundamental an infrastructure as the telephone, as electrical power, as television. The Internet will soon connect every computer in the world to every other computer in the world. What we need to do today with this infrastructure is no different than what our grandfathers and grandmothers had to do 100 years ago.

We must prove that this technology works, we must challenge our engineers to make it better, we must educate our consumers. We are all building a global village and now is when we decide what that global village is going to look like.

**PAUSE**

Last month, a new world's fair was announced, a world's fair for the information age, the Internet 1996 World Exposition. Today, I'd like to tell you a little bit about this World Exposition, how it is organized, and how you can participate.

The fair will last for all of 1996. Our goal is to see pavilions from 100 countries by the time the gates open.



pavilions?

The gates? What does an Internet world's fair look like? Where is it held? It is only fitting that <sup>this</sup> ~~the~~ World Exposition will be a distributed event, taking place all over the world. It will take place on the Internet, but it will also take place in the real world. This is not a virtual world's fair -- this is a real one.

A World Exposition is supposed to be an overwhelming event, to show the diversity of all mankind. That diversity is the attraction, but it makes it hard to put your hands around it. There are four aspects to the fair that help explain what we are doing: the pavilions, the core sponsors and technical participants, the countries in which activities have started, and finally the participating institutions. Let me touch briefly on each of these aspects.

The pavilions are theme areas. There's a Global Schoolhouse Pavilion which will provide a year-long series of activities for children. There's a Future of Media Pavilion, a Small Business Pavilion, and a Reinventing Government Pavilion which looks at how government can use the Internet to meet it's goals. There is an Internet Town Hall where world leaders will discuss public affairs with ~~us~~ citizens from around the globe.

The Internet 1996 World Exposition, in true Internet style, will have a touch of anarchy. Anybody can open a pavilion. You don't need our permission -- you just do it.

So ... is this simply a "think Internet" year? How is this different than the current set of activities on the World Wide Web?

There will be a central core to the fair that will put together some of the central pavilions I touched on. Our corporate sponsors have contributed some impressive resources to build the pavilions. In the United States, for example, Quantum has contributed 1 terrabyte of disk drives -- 1000 gigabytes! Substantial contributions of money and equipment have also come from companies such as MCI, Sun, Newbridge, and many others. The NBC Television Network has joined as our media partner, contributing money, studio space, and other resources. SSDS, a consulting company, has contributed two world-class engineers for the year. The list goes on.

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Today, there are major activities started in 5 countries. In the U.S., organizers include Vint Cerf from MCI, Eric Schmidt from Sun, and Marshall T. Rose. The organizers are not just Internet names, however. <sup>publishes</sup> William Randolph Hearst III is chairing the Silicon Valley effort. Congressman Edward Markey is chairing the Boston Organizing Committee. My group, the non-profit Internet Multicasting Service, is serving as the ~~US~~ secretariat.

In Japan, a truly impressive group has formed in support of the fair. The non-profit WIDE foundation and Keio University are serving as the secretariat and the organizing committee includes the presidents of companies such as Nissan, Softbank, ASCII, and Tokyo <sup>electric</sup> Power, as well as senior management representatives from companies such as Sony and NTT and many others. Substantial activities are also underway in Thailand, the United Kingdom, and the Netherlands, and a dozen other countries are getting started.

What has really made this World's fair take off, however, are the institutions that have agreed to participate. Let me tell you about just a few of these groups that are going to help us fill a terrabyte of disk.

In the U.S., the Kennedy Center for the Performing Arts will produce a weekly Young Artists Showcase for the Global Schoolhouse Pavilion. The National Press Club will host the Internet Town Hall. The Lincoln Center in New York will feature a month-long summer festival on the Internet. In Washington, the Smithsonian Institution will put it's American Folklife Festival on the Internet.

In Japan, the Tokyo Aquarium will feature live video of fish swimming and multimedia exhibits. The Huis Ten Bosch model city in Nagasaki will host an environmental conference. In Thailand, they are putting the sprawling Aw Taw Kaw market on the Internet. In England, Peter Gabriel and Real World Studios will feature World Music, including a live multicast from the WOMAD festival. In the Netherlands, they are putting a dairy farm on-line -- you'll be able to monitor the position of your favorite cows from anywhere in the world using SNMP network management stations. ~~A~~

*These are just a few of the dozens of groups that have signed up.*

We want to do more than just produce data. We want this world's fair to change the very nature of the Internet infrastructure. We want to build a public park for the global village as our enduring legacy of this fair. Let me tell you about the Internet Railroad.

The Internet Railroad is a dedicated infrastructure for moving large data streams around the world. You can think of this as simple mirroring: moving the Kennedy Center data from a web server in Washington to a web server in Tokyo so the data is readily accessible to the Japanese infrastructure. But, data streams can also be multicast traffic, moving live audio and video from an environmental conference in Nagasaki to participants in Europe and the U.S.

The Internet Railroad consists of a series of very large servers connected together with high bandwidth, dedicated to moving public data around the world.



We've begun asking the telecommunications carriers to contribute a T3 line -- 45 million bits per second -- around the world for a year in 1996.

Luckily, it's not just Vint Cerf and I knocking on doors. Vice President Gore has committed the U.S. administration to the project and has said that the government views the World's Fair as being in the national interest. A formal statements of support have been received from President Clinton and the U.S. government is encouraging other countries to view the world's fair within the

context of the recent G-7 <sup>Global Information Infrastructure</sup> summit agreement. The Vice President has

<sup>personally</sup> encouraged American telecommunications to participate.

This is not <sup>just</sup> a U.S. project. Dr. Vichit, the Minister of

Telecommunications for Thailand has also issued a formal statement of support and several other countries are about to do the same.

Why should AT&T or MCI or KDD or <sup>even</sup> Singapore Telecom contribute T3 lines? Why would Sun contribute huge servers? Why would Quantum contribute a terrabyte of disk?

All of us -- all of us in this room, all of us in the industry, we're in the Global Village business. We make disk drives or modems or build web sites or run computing centers. We're asking people to move to the global village.

Well, people don't move to towns without schools and museums. People don't move to towns without public parks. If we want to see a global Internet *business* -- if we want to see every business and home using this infrastructure, if we really want to see an information economy, than we need more than just - on-line shopping malls. The Internet needs a public park if commerce is to thrive.

As we build this Internet infrastructure, we must remember that we are building a global community. People build towns -- people shape their communities. With the Internet 1996 World Exposition, we're trying to shape *our* community.

I think it is highly appropriate that the first public presentation in Asia about this World Exposition should be here at the Singapore World Wide Web conference.

Singapore, of course, has been a prime example of the belief that we can shape our communities. Public and private have joined together here to build an economic miracle, a true community. Singapore's commitment to building an intelligent island is equally impressive and it would be wonderful to see the intelligent island join us in this world exposition.

I would also ask each of you here today to join us. As you build web sites, think about a public park for the global village. Add a public component to your site. If you're an airline company selling jumbo jets on the Internet, add a history of aviation museum. If you're putting a restaurant on-line -- posting daily specials or taking reservations by e-mail -- add a collection of traditional recipes and join our small business pavilion. If you are a computer company, adopt your local school and teach the students how to build their own web site.

If we all work together, we can make a difference in what the world will look like. I'd like to thank you for inviting me here today and for listening and I hope you'll all join this groundswell of engineers, corporations, and public officials who are working together to build a public park for the global village.