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# Pervasive Information: A Revolution of Rising Expectations

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Courseware page:  
IN3.ORG/education/events/031001.htm



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## Pervasive Information

- ♦ Rising Expectations
- ♦ The Digital Landscape
- ♦ Culture & Policy
- ♦ Where We're Headed

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## "a revolution of rising expectations"



Crane Brinton  
(1898-1968)  
The Anatomy of Revolution  
(1938, rev. ed. 1965)

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## Expectations about Information

- ♦ Comprehensive
- ♦ Instantaneous
- ♦ Economical
- ♦ Ubiquitous
- ♦ Processable
- ♦ Essential
- ♦ Empowering



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### The Digital Landscape

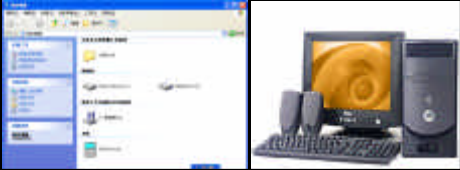
- ♦ Computers Everywhere
- ♦ Internet Everywhere
- ♦ TV Everywhere
- ♦ Smarter Data

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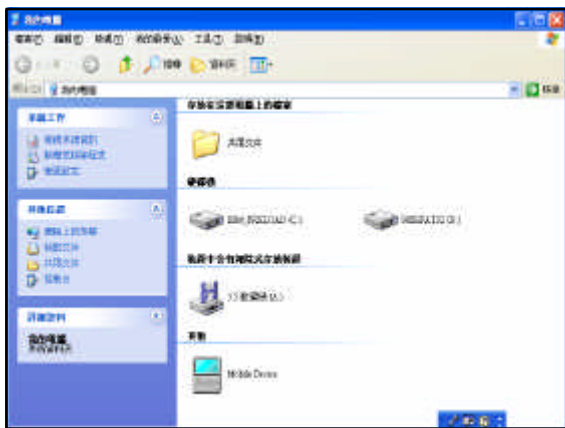
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### Computers Everywhere

- ♦ Hot PCs cost less than \$450 PC  
2.2GHz, 256MB, 80GB, CD-ROM, Ethernet
- ♦ 10 million sold every month (ww)
- ♦ Widespread digital literacy



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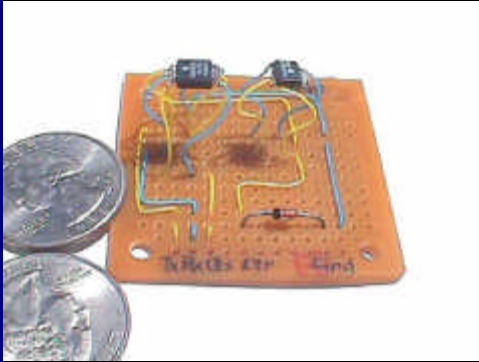
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### Internet Everywhere

- ♦ 413,961,746 users on-line
  - 12 hours per month
  - 42 pages viewed per session
  - 55 domains visited
  - 923 page view per month
- ♦ 15 billion emails per day
- ♦ 30 million weekly streamers (US)
- ♦ 582 million IMs per day
- ♦ 4.2 million porn sites

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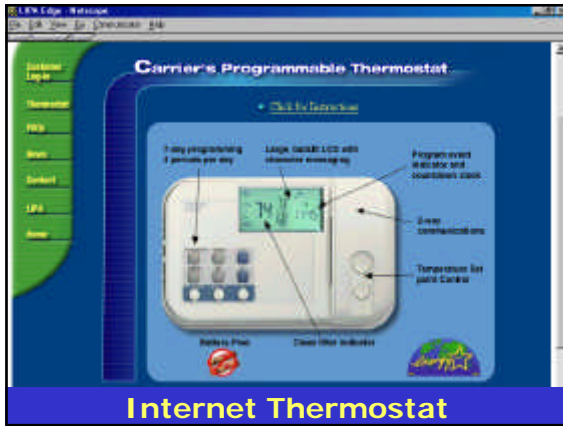
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### Margarita Washing Machine



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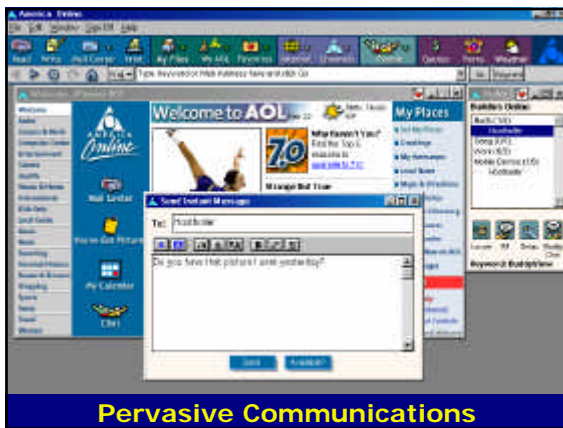


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### Mobile Access

- ◆ Enhanced telephony
- ◆ Fast Internet access
- ◆ Short Messaging Service
- ◆ Multimedia

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### Smart Dust

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### Digital Media

- ♦ 35% of adult Americans stream audio and video
- ♦ 28% of home users have broadband
- ♦ Peer-to-peer file sharing
  - 14 million downloaders
  - CD music sales down 28%

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### TV Everywhere


- ♦ 100+ Channel TV Universe
- ♦ Cable, Satellite, DVD
- ♦ Streaming Media
- ♦ Pervasive Video
  - Phones, PDAs, Cars
  - Stores, Signs, Billboards
  - ATMs, Packaging

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### Flat, Light & Cheap Displays

- ♦ CRT: Cathode Ray Tube
- ♦ LCD: Liquid Crystal Display
- ♦ Plasma Display



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### Flatter, Lighter and Cheaper Displays


- ♦ OLED: Organic Light Emitting Diode



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### Flexible OLED materials



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### Video Walls



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### Virtual Signs

- ♦ Video signs in stores, ATMs, malls

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### Portable & Ubiquitous Devices

- ♦ PDAs, mobile phones, cars

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### Portable & Ubiquitous Devices

- ♦ Watches, pens, eyeglasses

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### Augmented Reality

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### Augmented Reality

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## Artificial Intelligence

- ♦ Systems that Learn, Judge and Act
- ♦ Intelligent Agents
  - “Know” Bots
  - Shopping Bots
  - Personalization Bots

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Google search results for "Jack Powers". The top result is "J.D. Jack Powers Informal Biography" with a URL to a website. Other results include "J.D. Powers: The Journal of the International Information..." and "A Conversation With Jack Powers On The Last Oregon Cycle".

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Vivimo search results for "Jack Powers". The top result is "J.D. JACK POWERS: THE JOURNAL OF THE INTERNATIONAL INFORMATION..." with a URL. Other results include "J. Jack Powers: The Last Oregon Cycle" and "A. J.D. Jack Powers Informal Biography".

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Google News page showing various news articles. The top story is "What African states must do to drive for growth" with a sub-headline "Economic Crisis - 10 more steps". Other stories include "US, Britain set to sign trade pact after 1000 hours" and "Diplomats' Security: India".

Scientific American article titled "The Semantic Web". The article discusses how a new form of Web content that is meaningful to computers will unleash a revolution of new possibilities. It is by Tim Berners-Lee, James Hendler, and Ora Lassila.

A screenshot of a Microsoft Internet Explorer browser window displaying the DCMI website. The page contains metadata for a document titled "Using Dublin Core: The Core Elements - Gantner". The metadata includes fields for title, creator, description, date, format, language, publisher, and description. The description states: "This document is intended as an entry point for users of Dublin Core. For non-specialists, it will assist them in creating simple descriptive records for information resources (for example, electronic documents). Specialists may find the document a useful point of reference to the documentation of Dublin Core, as it changes and grows." The browser's address bar shows the URL: http://www.dublincore.org/elements/L1/L1P/.

**DCMI : Dublin Core Metadata Initiative**

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## Content AI

- Machine Vision

A collage of four images illustrating machine vision and AI. Top left: A woman looking at a computer screen. Top right: A person standing in a library or office with bookshelves. Bottom left: A night-time aerial view of a city with green and yellow lights. Bottom right: A 3D data visualization or network graph with blue and yellow nodes.

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A screenshot of a video management software interface. The top section shows a large video player on the left and a grid of smaller video thumbnails on the right. Below the thumbnails is a list of video files with columns for name, duration, and other metadata. The interface is designed for organizing and viewing digital video content.

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## Managing Expectations

An illustration showing a woman sitting at a desk with a laptop, looking thoughtful. In the background, other people are shown interacting with various digital devices and screens, symbolizing the challenges of managing expectations in a rapidly changing digital landscape.

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## Information Policy

- Limited Copyright
- Digital Rights Management
  - Secret Police in the Machine
- Open Content
  - Free Information in a Free Society

A Creative Commons license logo (CC BY-NC-SA) is shown next to a CD-ROM. The logo includes the text "SOME RIGHTS RESERVED" and "Creative Commons".

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## Where We're Headed

- Cheap, Ubiquitous Technology
  - Immersive, Intelligent
- Culture
  - Faster, Connected, More Visual
- Policy
  - Open, Accessible, Inclusive

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### Managing the Revolution



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