Creating The Library's Future

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Westchester Library System Board
President, Metropolitan New York Library Council
Senior Fellow, Intelligent Community Forum
October 7, 2014

The Relevant Trends

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Technology Trend #1

Digitization Of Written, Oral and Visual Materials

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Digitization of Materials

- Delivery via e-readers AND smart phones, web, etc.
- Massive worldwide effort to digitize material on paper and other non-electronic media
  - Digitization of other libraries' collections expands the collection you can offer your patrons with a limited increase in space
- Combined with many media that are born digital
- The end of the self-contained book
  - Infinite variety of mashups

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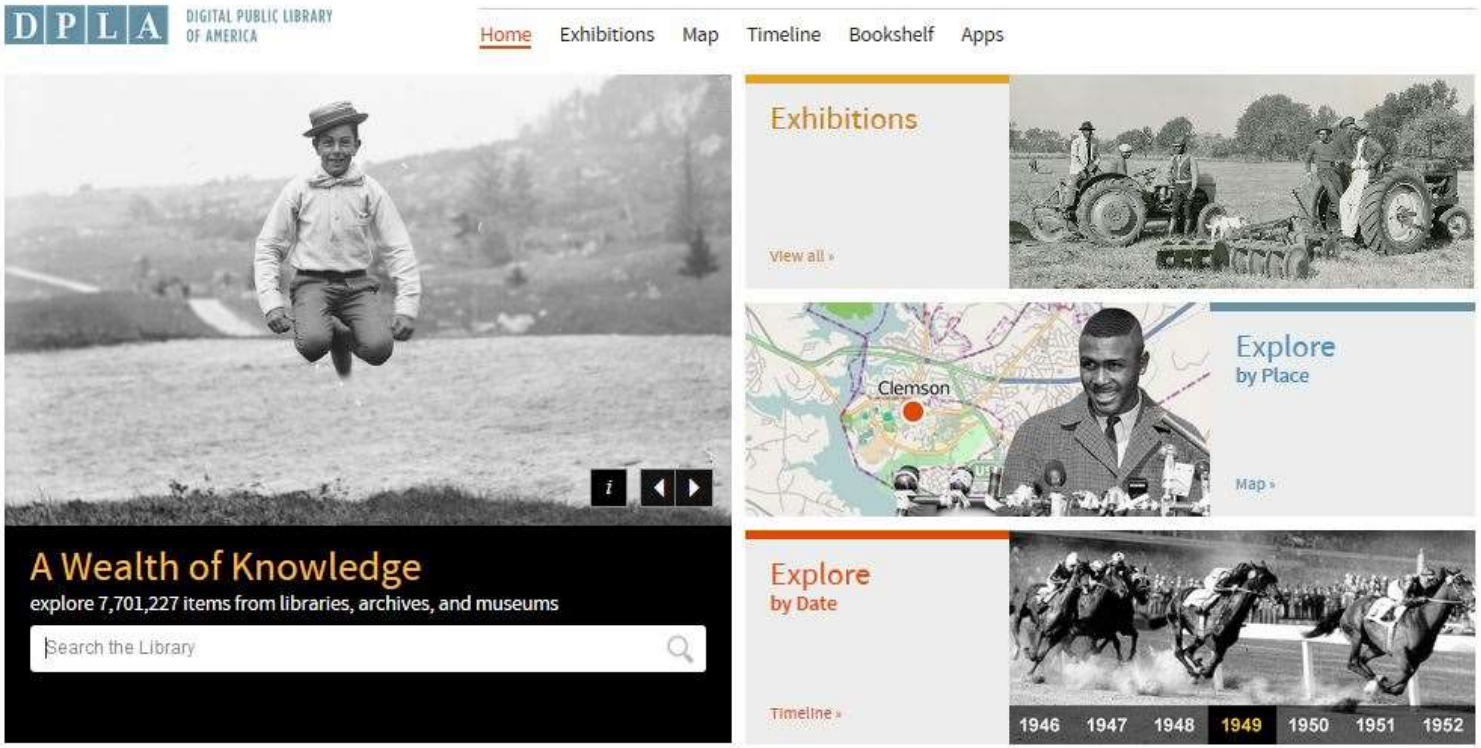
Digital Public Library of America



DIGITAL PUBLIC LIBRARY OF AMERICA

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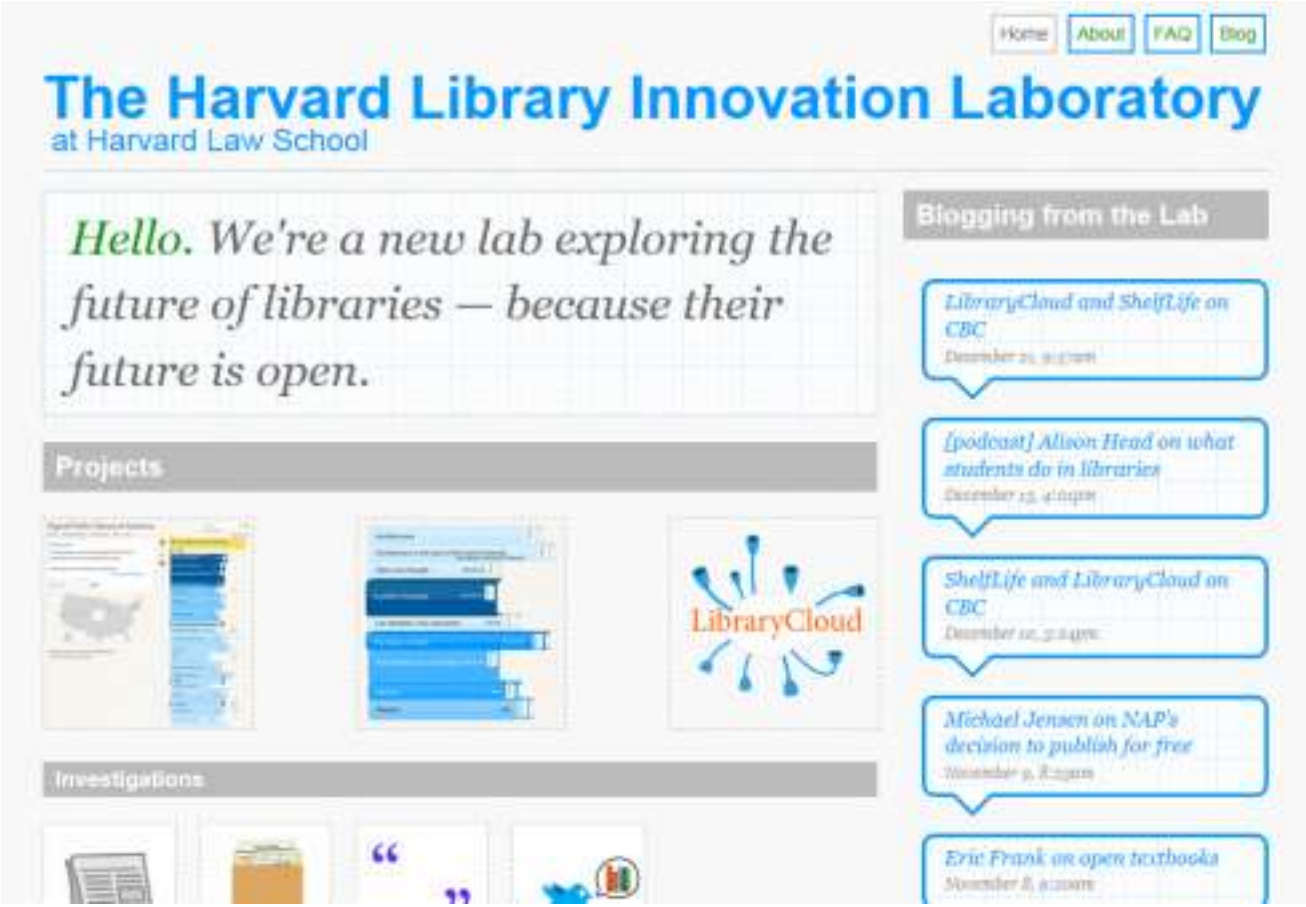
“Big Data” Analytics: Library Cloud Meta-Data Project

LibraryCloud is a metadata server that gathers library metadata from multiple institutions and makes it available through open APIs and as Linked Open Data. The aim is to make everything libraries know available to the full Web ecosystem.



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Virtual Views Of A Library: ShelfLife with Shelf Rank

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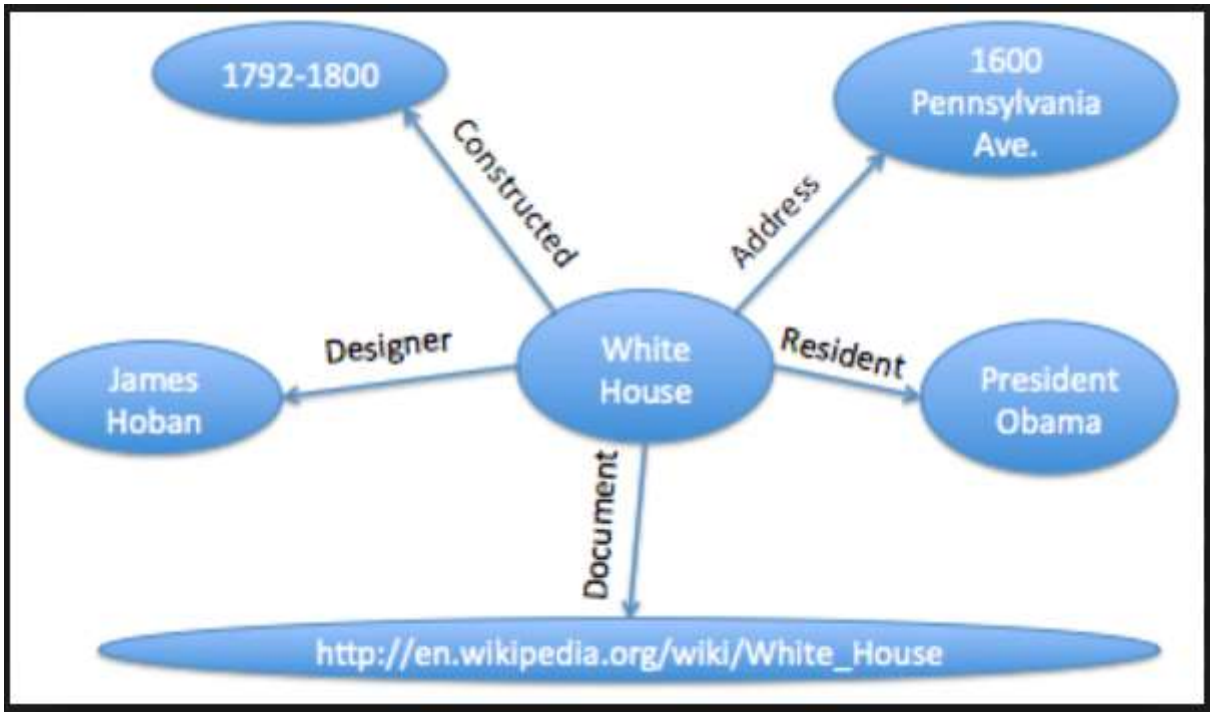
Semantic Web



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Technology Trend #2

Artificial Intelligence & Robotics

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Speech Recognition

- **Most well known current example: Apple Siri**
  - **Also Google and Amazon Yap; Nuance, Datria, etc.**

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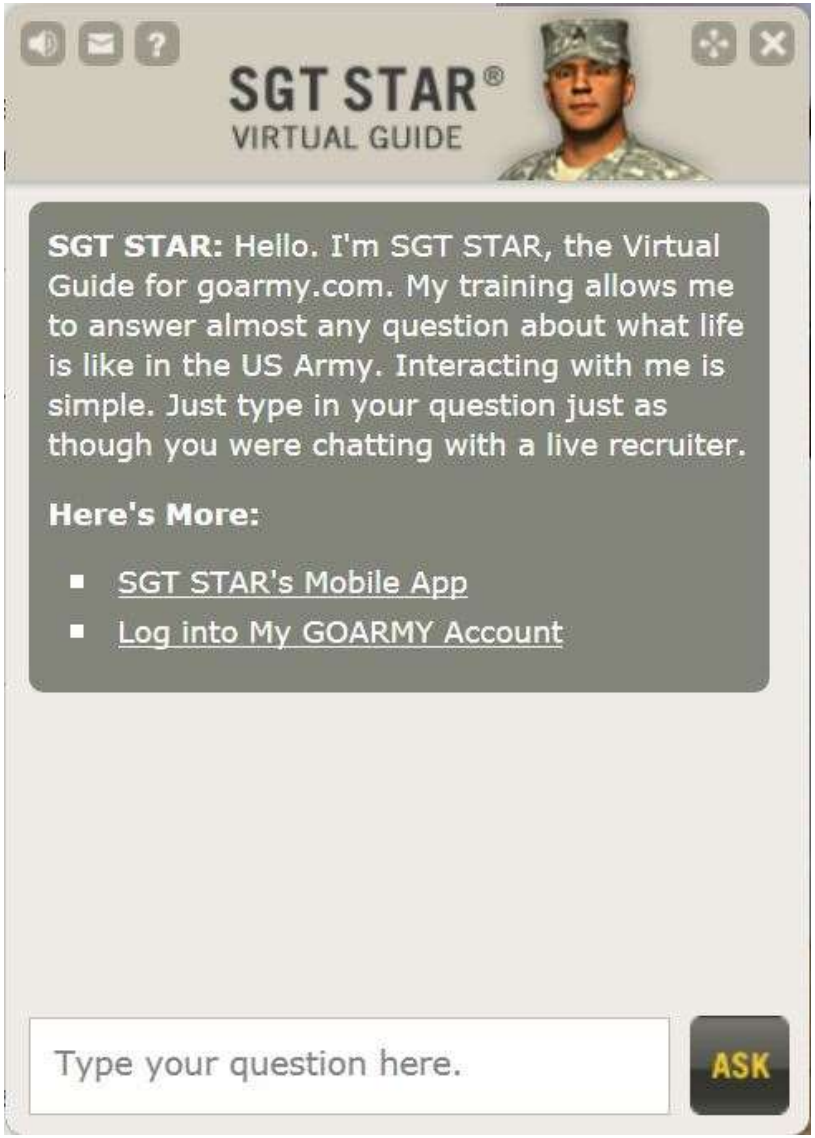
Artificially Intelligent Guide



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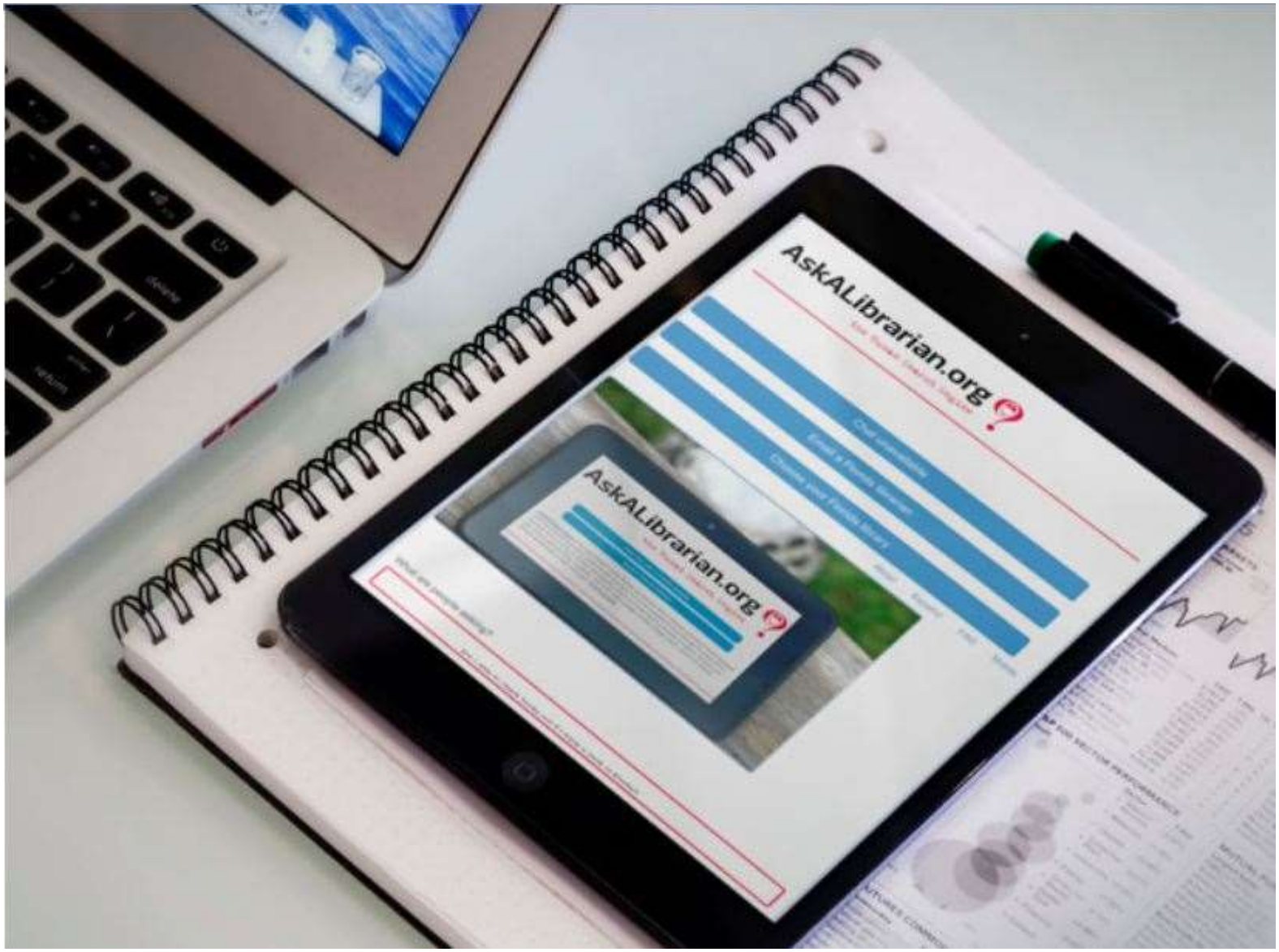
Ask A Librarian



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Robots As Human Aides

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Robotic Warehouse Workers

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Technology Trend #3

High Quality Visual Communications

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Non-Verbal Communications

- **93% of communication is nonverbal**
  - **Especially critical in establishing trust between people**
  - ***"Seeing Is Believing"***
- **We process visual information 60,000 times faster than text**
- **Mehrabian's communications research**
  - **7% of message pertaining to feelings and attitudes is in the words that are spoken.**
  - **38% of message pertaining to feelings and attitudes is paralinguistic (the way that the words are said).**
  - **55% of message pertaining to feelings and attitudes is in facial expression.**

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Corporate Video-Conferencing Is Rapidly Increasing

Within the next couple of years, about two thirds of businesses will have adopted some kind of telepresence solution – Forrester

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Extending The Library Through Video

- Meetings of focused groups (SIGs) from many library/branch locations
- Literacy training & ESL; public health; etc.
- Each library can become a “Little City Hall”

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Holographic-Like Telepresence

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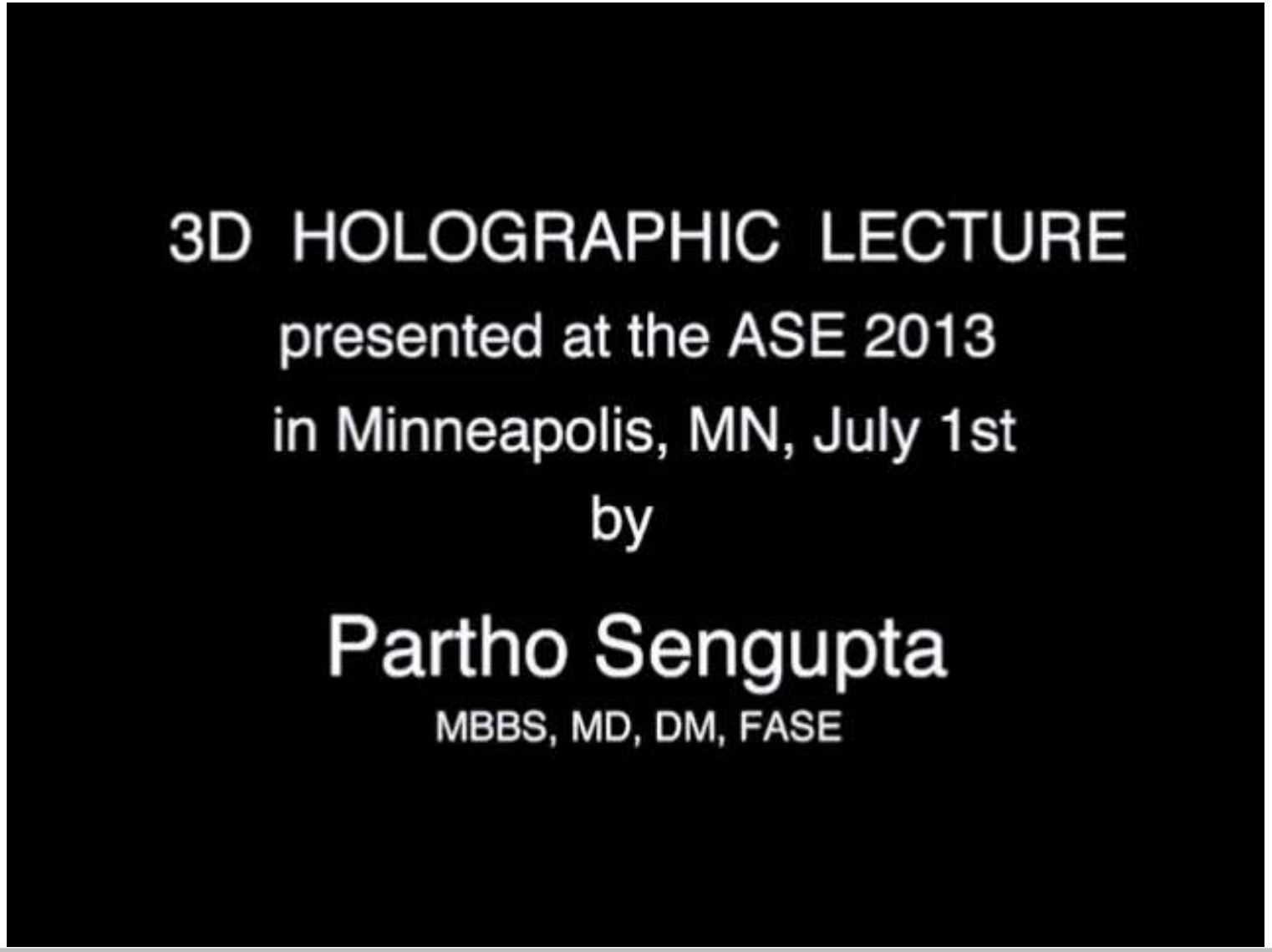
It's Like Being There



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Technology Trend #4

Ubiquitous Internet

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Some Of The Ways This Is Happening

- The “cloud”
- Internet of Things
  - sensors
  - video/audio surveillance
- Wearable technology
- Non-traditional user interfaces
  - Going beyond the mouse, the typewriter keyboard and even the desktop/laptop display screen

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Augmented Reality

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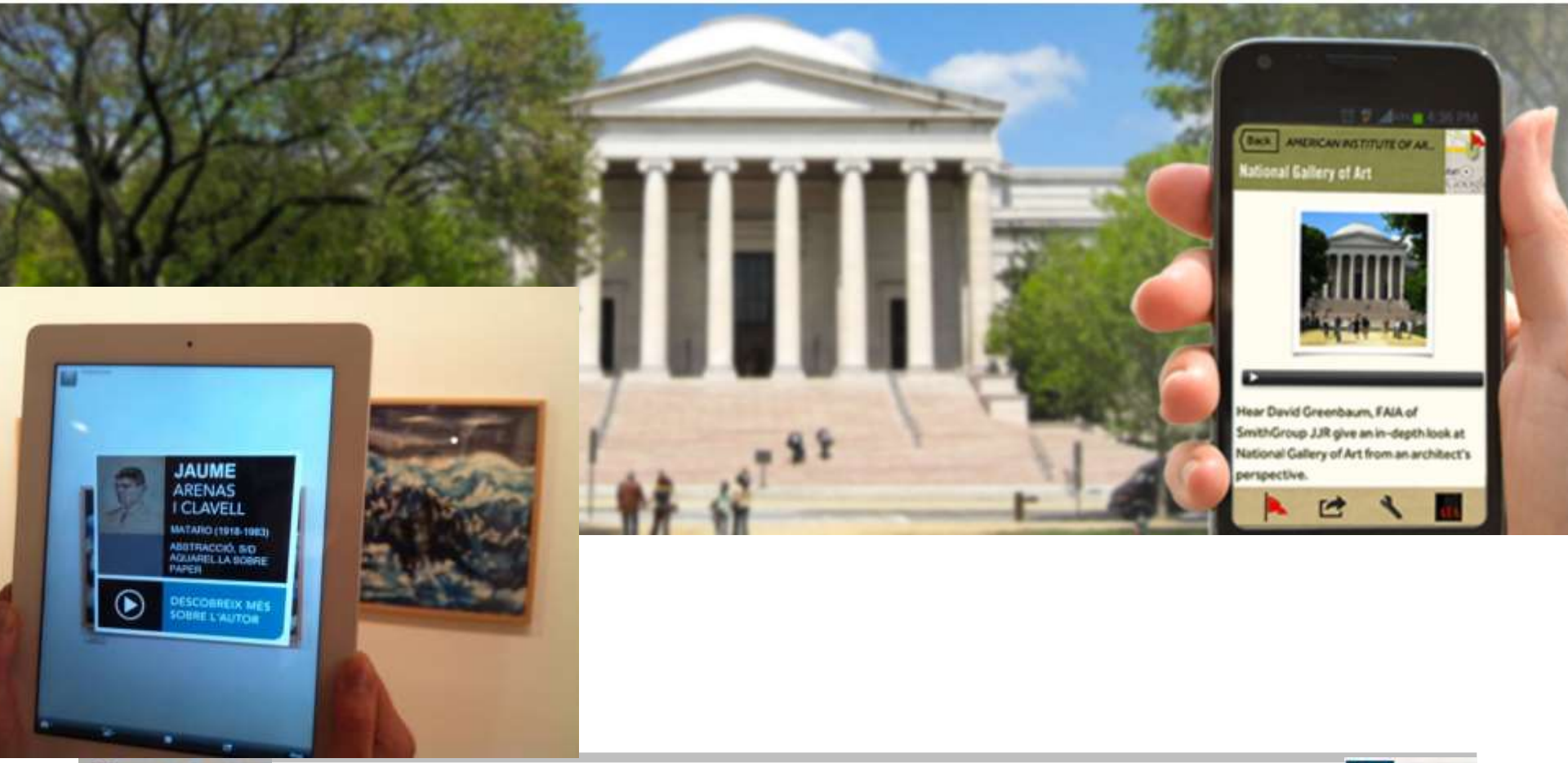
Get More Information About What You're Looking At



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WordLens

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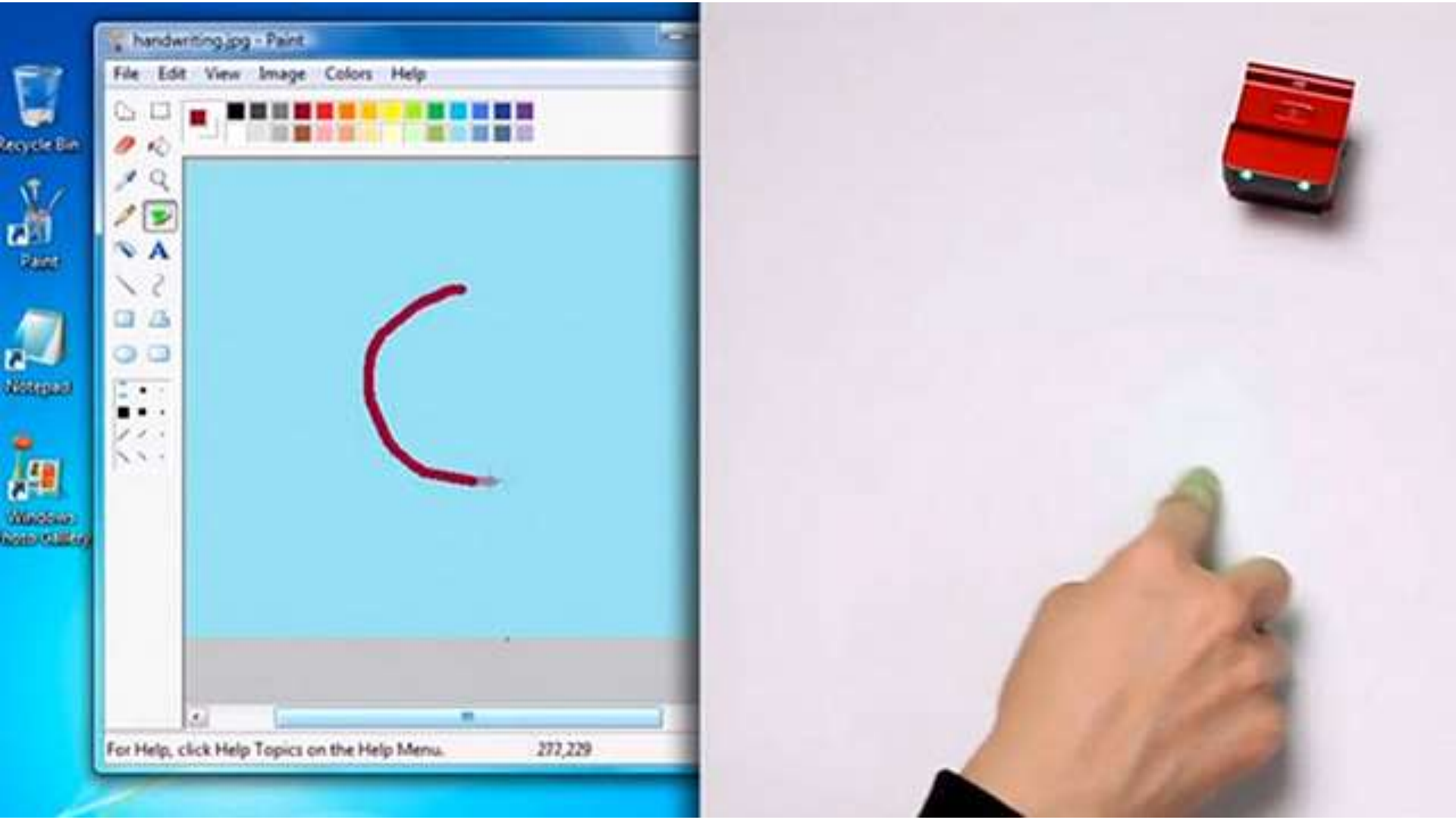
The Mouse-less Mouse



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Any Surface Can Be A Keyboard

Celluon Celluon Magic Cube Laser Projection Keyboard and Touchpad

Sears Item# SPM6111100601 | Model# RESE1004831

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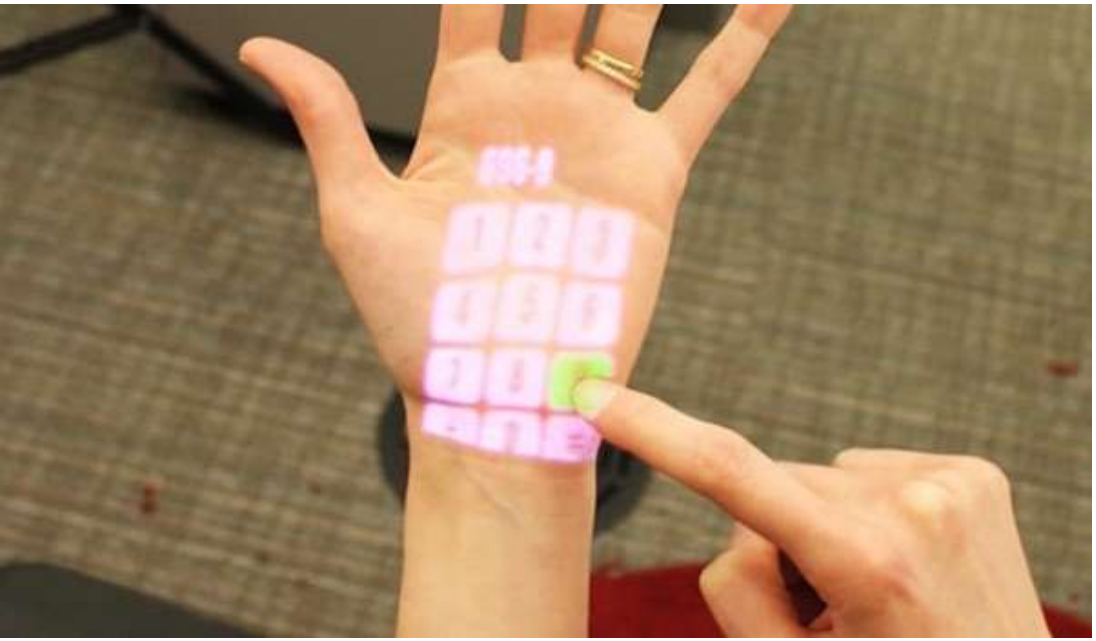
Really — Any Surface Can Be A Keyboard!



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Any Surface Can Be A Display Screen

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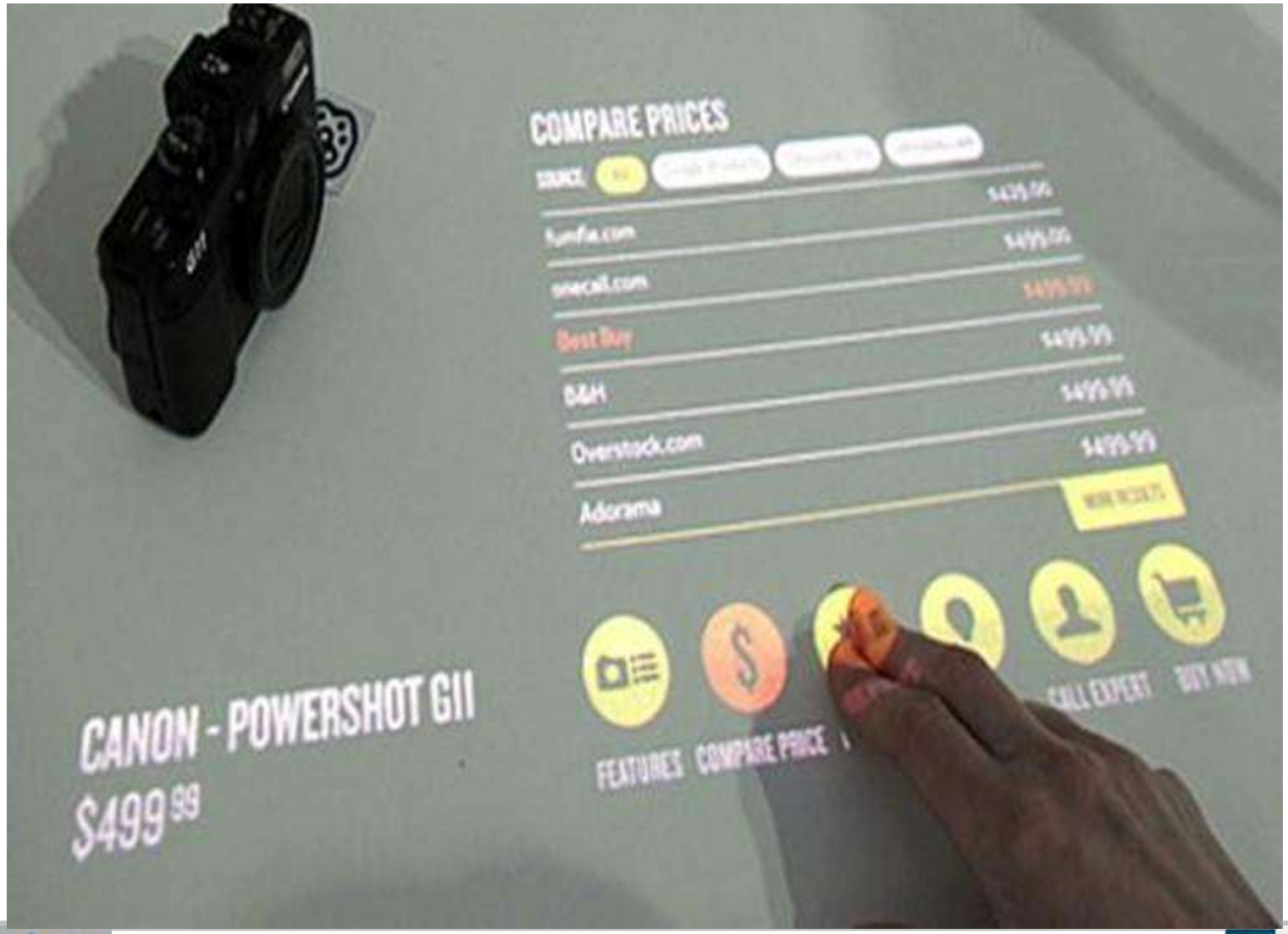
Augmented Product Displays



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You Can Move Video On Walls

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Car Window As Display Screen

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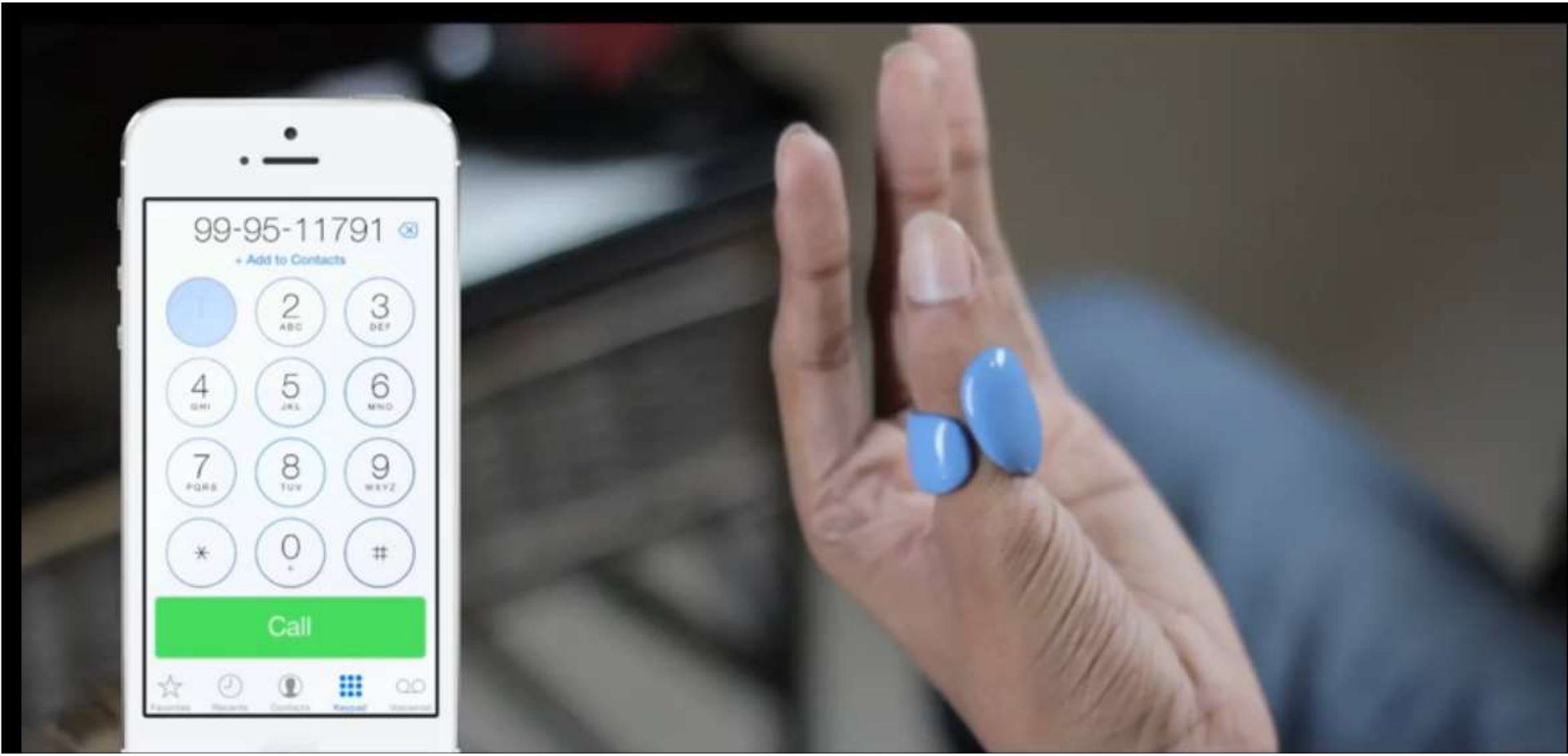
Fin Uses Your Finger For Remote Control



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Remote Control By Moving Your Arms

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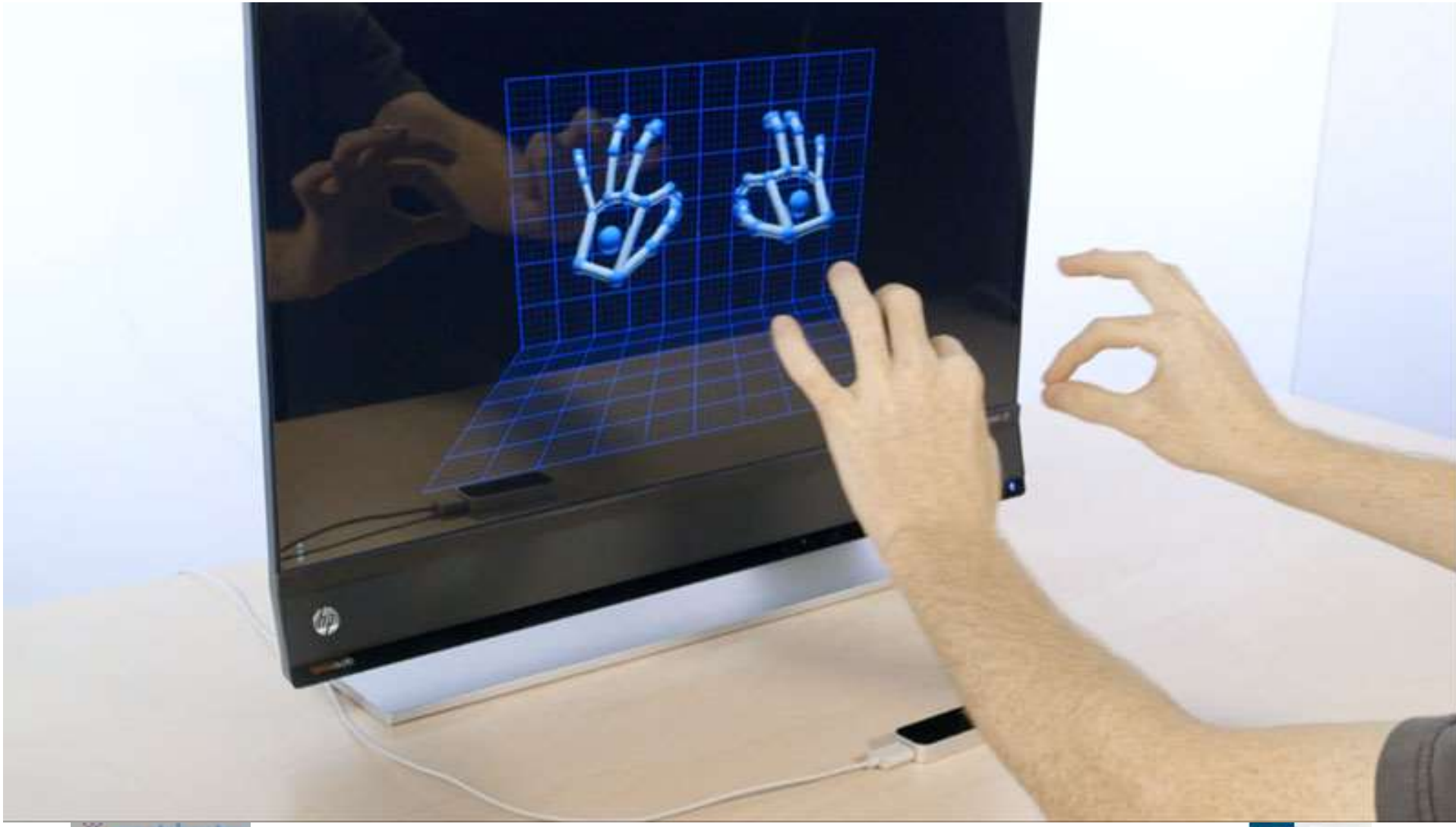
Leap Motion Watches Your Hands



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No-Touch Input: Tobii Eye Tracking

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Google Glass Combines Reality And A Virtual Display

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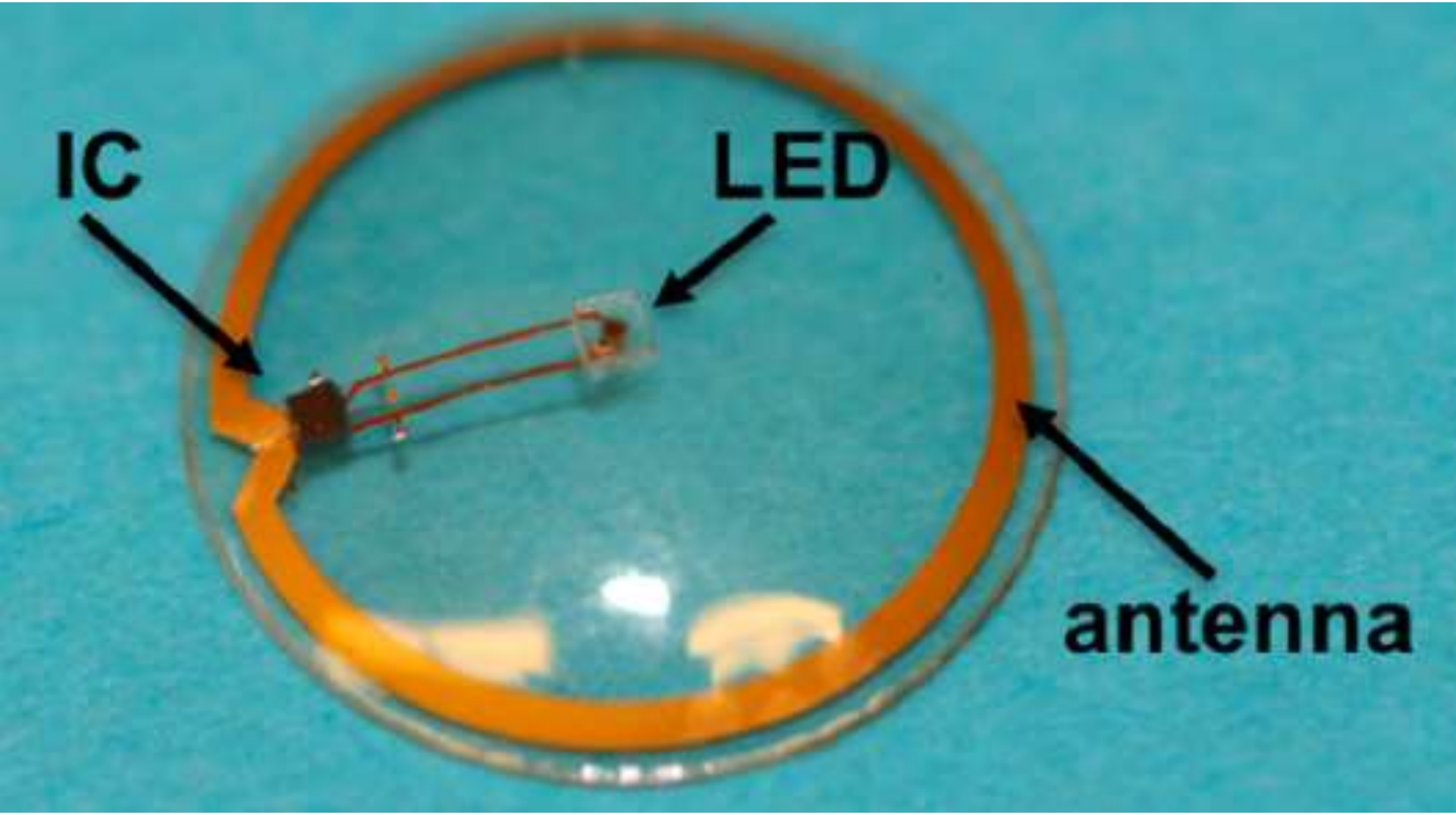
Wireless Contact Lens Display



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Technology Trend #5

Billions Of People Who Produce And Consume Content — The "Pro-Sumer"

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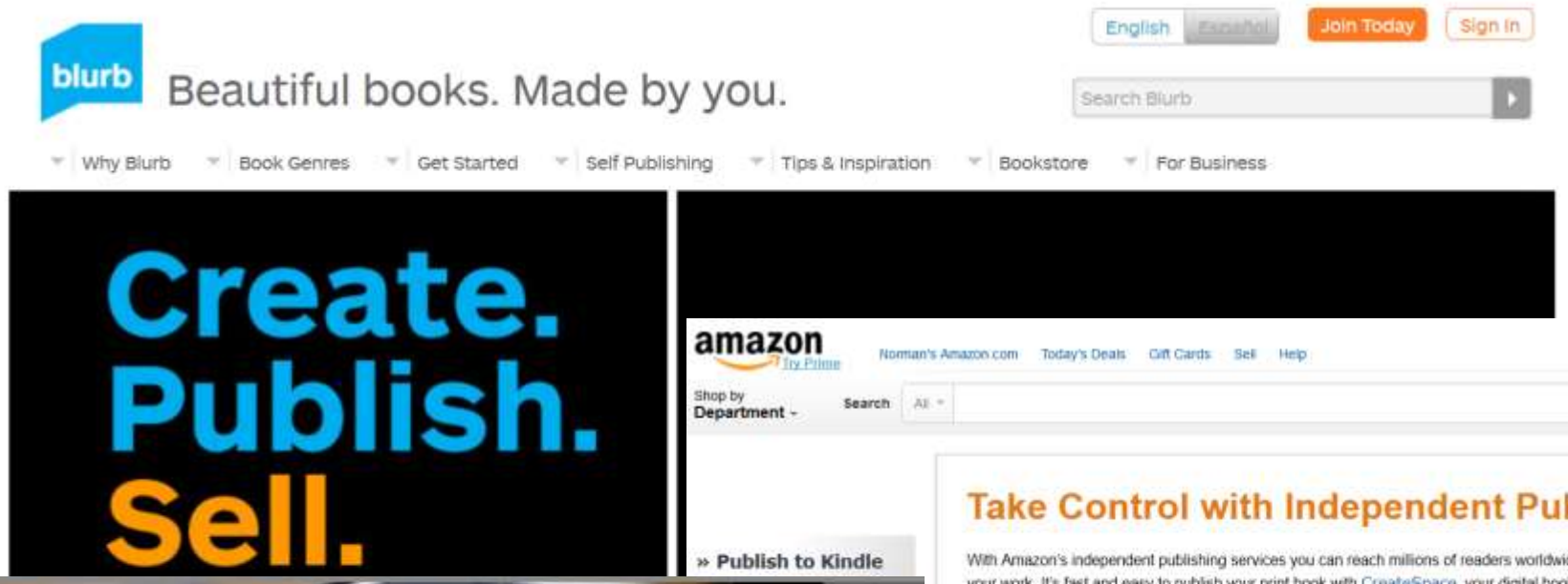
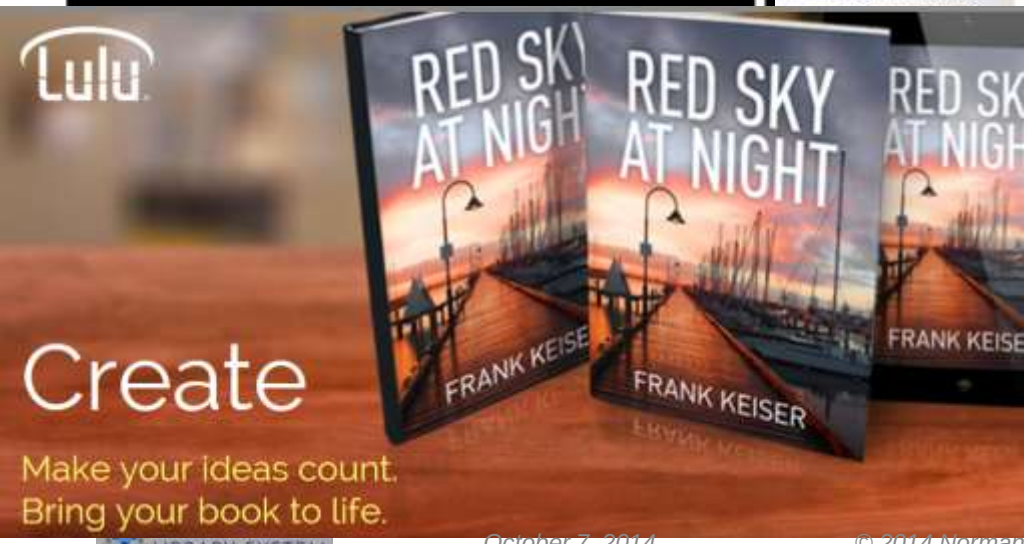
You Can Make Your Own Books





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Readers Add Tags To The Library Catalog – And Greatly Enhance It

"In an Internet world, hierarchical classifications do not necessarily work best"

Ontology is Overrated: Categories, Links, and Tags – by Clay Shirky

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Aarhus: User Involvement

The Clapping Screen in the Exhibition Lab made it very simple for the users to affect the physical space of the library. The users like to have something to do, and they like to contribute with something, but it should not be too troublesome, and it should bring about an instant result.

http://www.youtube.com/watch?v=TpFO_L_jA1c

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Aarhus: Music Lab

The Music Lab became a place of production where the users recorded their own music and shared it with each other.

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Aarhus: Interactive Floor

The interactive floor, the iFloor, in the Literature Lab. Via SMS and e-mail, the users could ask questions to the iFloor for other users to answer via SMS and e-mail. In order to see and answer the questions, the users would have to be present at the iFloor, be physically active and co-operate with other users to achieve the optimal experience.

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3D Printing

Toy car

Dinosaur skull

Working bicycle

Model engine

Sources: Stratasys, 2011; European Air Defense System

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Even body parts …
3D-printed titanium lower jaw implant

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3D Printer In Long Island Library

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Westport Library Maker Space

Top and bottom right photos by Kevin Henegan; Bottom left photo courtesy of Detroit Public Library

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Public Libraries As Entrepreneurial Spaces

- **The public library becomes the host and corporate librarian for entrepreneurs and other innovators**
  - **Helping to conduct market research, identify opportunities…**
  - **The librarians organize the vast amount of free training and courses online**

Chattanooga Public Library 4th Floor

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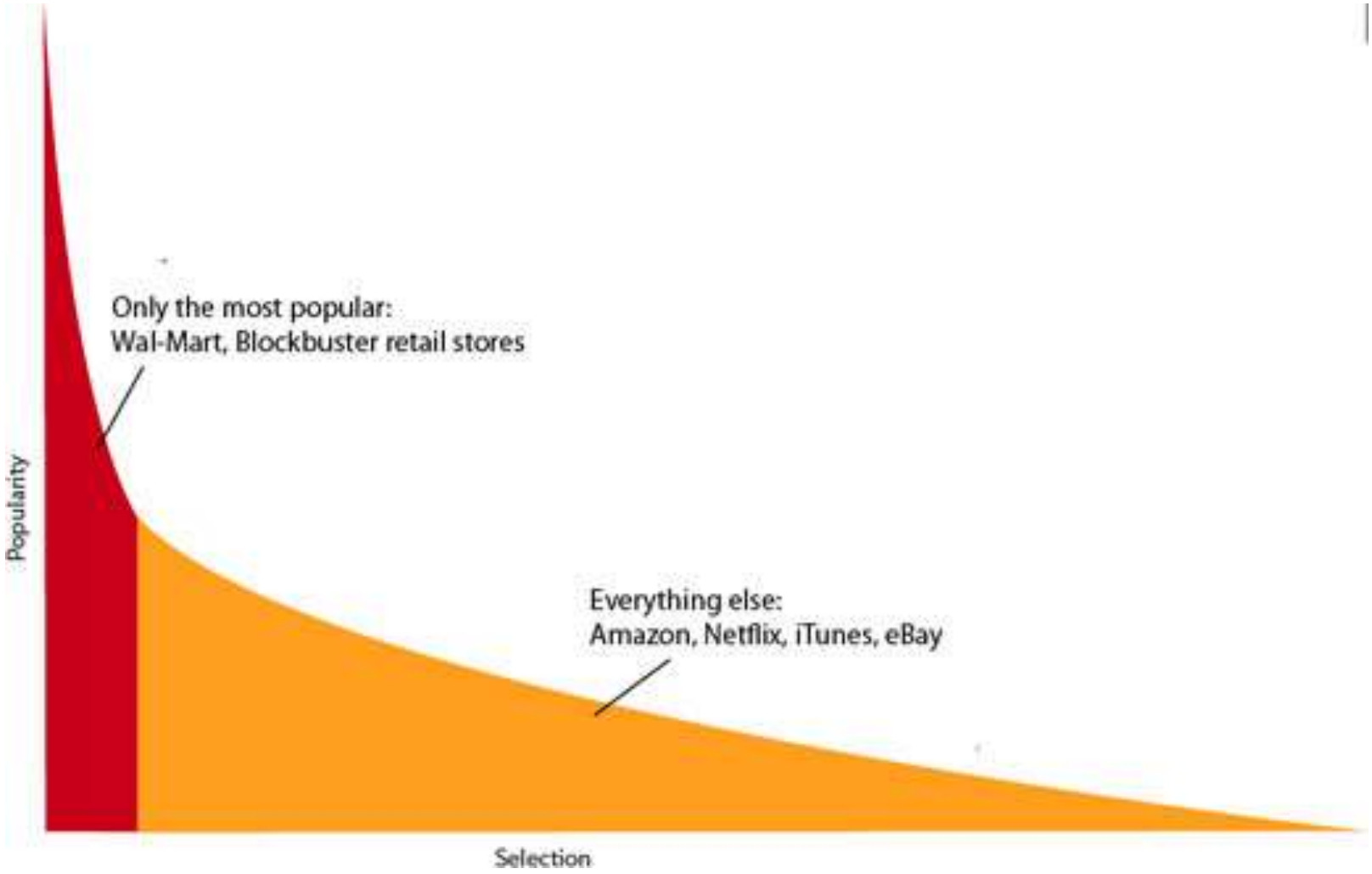
Long Tail In Books And Products Challenges Companies & Libraries



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We Are Only In The Early Stages Of The Internet's Development

Not yet today, but in ten or twenty years — A world of high quality visual communication and easy collaboration everywhere, enabling anyone anywhere to virtually meet anyone else anywhere else

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Thinking About Libraries In This Future World

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The Role Of The Librarian

Traditional Role	Future Role?
Purchase materials for a "collection"	?
Organize those materials through a catalog	?
Refer patrons to materials in the collection	?

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What Do You Acquire For Your Collection?

- Text and not text
- Stored locally and "somewhere out there"
- Printed and digital
  - Material that is born digital
  - or digitized if not born digital

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The Warnings Have Been Around For A Long Time

"What are the implications of all for this for the future of public libraries? … The answer is that while we cannot be certain about the future for our services, we can and should be developing a vision which encompasses and enriches the potential of the Internet. **If we do not do that then others will**; and they will do it less well."

- **1995**, 61st IFLA General Conference - Conference Proceedings - The library of the future by Chris Batt Croydon Li

What "others" are providing library services and how well are they doing?

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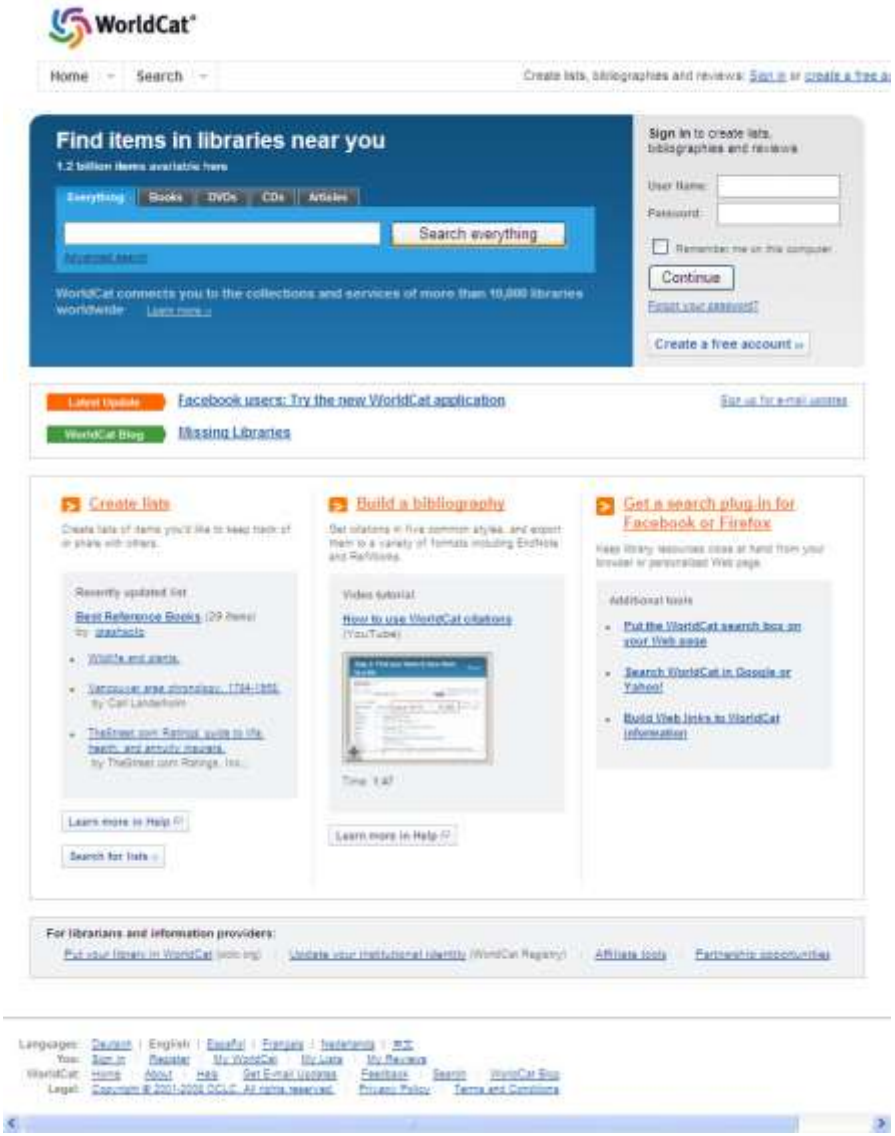
Does OCLC Provide Library Services?

OCLC WorldCat is a global network of library-management and user-facing services built upon cooperatively-maintained databases of bibliographic and institutional metadata.



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behavioral economics Search Books Advanced Book Search Google Book Search Help

Books Showing: All books Books 1 - 10 of 9100 on behavioral economics. (0.09 seconds)

List view Cover view

Behavioral Economics
by James Allison - Business & Economics - 1983 - 223 pages
Includes indexes.
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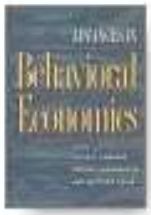

Advances in Behavioral Economics
by Colin Camerer, George Loewenstein, Matthew Rabin - Business & Economics - 2004 - 776 pages
This book assembles the most important papers on behavioral economics published since around 1990.
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Beyond Greed and Fear: Understanding Behavioral Finance and the Psychology ...
by Hersh Shefrin - Business & Economics - 2007 - 368 pages
Shefrin argues that financial practitioners must acknowledge and understand behavioral finance--the application of psychology to financial behavior--in ...
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Behavioral Dimensions of Retirement Economics

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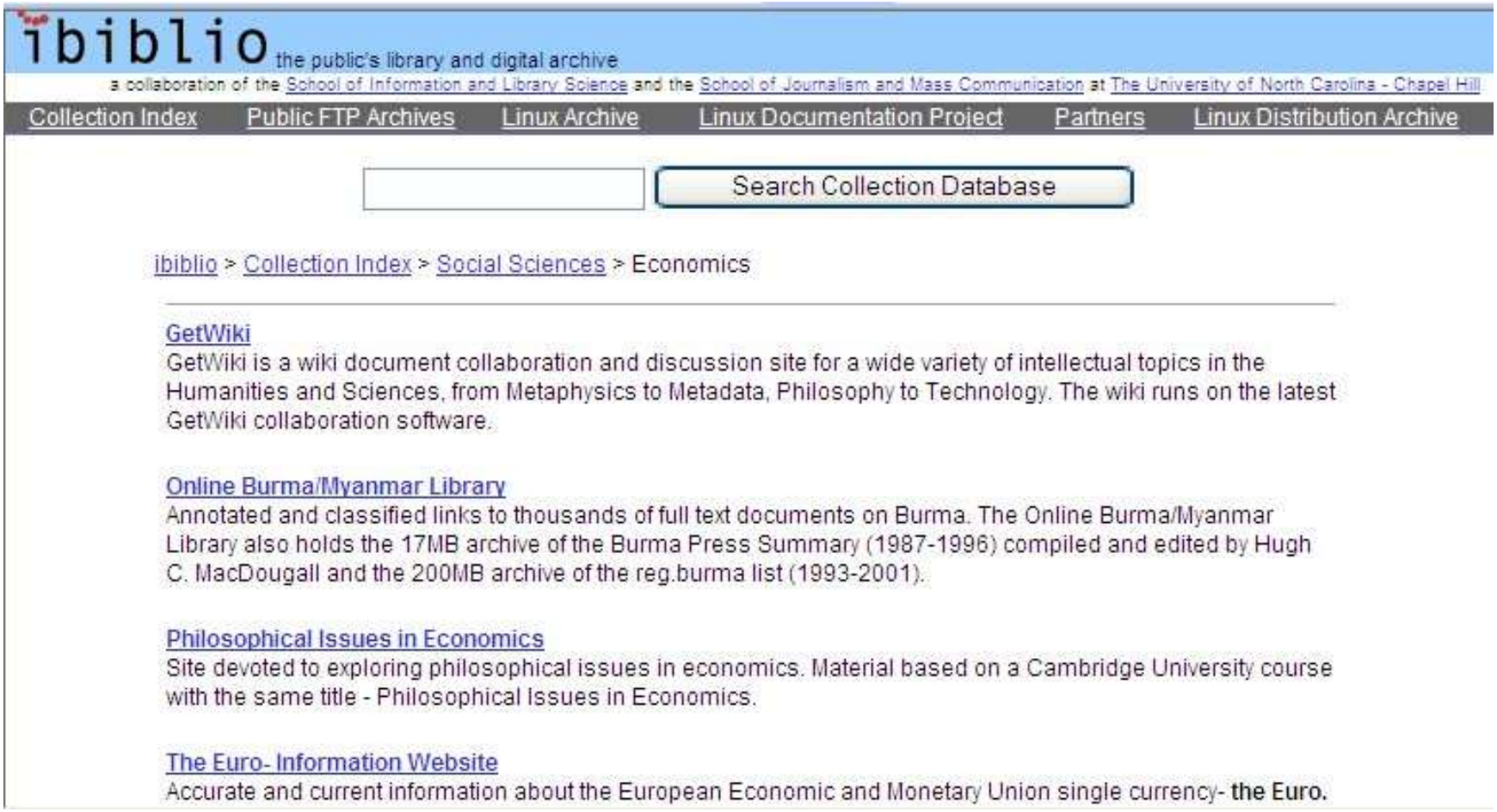
Does ibiblio Provide Library Services?



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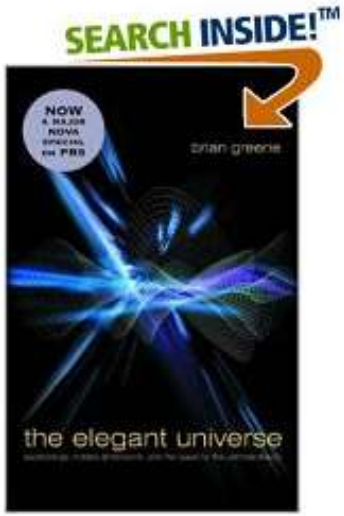

The Elegant Universe: Superstrings, Hidden Dimensions, and the Quest for the Ultimate Theory (Hardcover)

by Brian Greene (Author) "Calling it a cover-up would be far too dramatic..." (more)

Key Phrases: familiar extended dimensions, three extended spatial dimensions, sliding clock, Edward Witten, Nobel Prize, John Wheeler (more...)

(502 customer reviews)

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Search inside this book

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Is Amazon.com A Reference Librarian?

Inside This Book (learn more)

First Sentence:
Calling it a cover-up would be far too dramatic. Read the first page

Key Phrases - Statistically Improbable Phrases (SIPs): (learn more)
familiar extended dimensions, three extended spatial dimensions, sliding clock, stationary light clock, quantum undulati
quantum jitters, five string theories, resonant vibrational patterns, circular girth, given string theory, second superstrin
moving light clock, energy denomination, circular dimension, string theory offers, perturbative tools, string coupling, five
spatial fabric, conifold transitions, string theorists, observational vantage points, nine space dimensions, spacetime fab

Key Phrases - Capitalized Phrases (CAPs): (learn more)
Edward Witten, Nobel Prize, John Wheeler, Mona Lisa, University of Texas, Milky Way, Niels Bohr, Princeton University,
Large Hadron Collider, Massachusetts Institute of Technology, Stephen Hawking

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Citations (learn more)

This book cites 31 books:

Dreams of a Final Theory: The Scientist's Search for the Ultimate Laws of Nature by Steven Weinberg on 4 pages
The Second Creation by Robert P. Crease in Back Matter (1), Back Matter (2), and Back Matter (3)
Superstrings: A Theory of Everything? (Canto) by P. C. W. Davies in Back Matter (1), and Back Matter (2)
The Nature of Space and Time by Stephen Hawking in Back Matter (1), and Back Matter (2)
Einstein:: The Life and Times by Ronald W. Clark in Back Matter (1), and Back Matter (2)

See all 31 books this book cites

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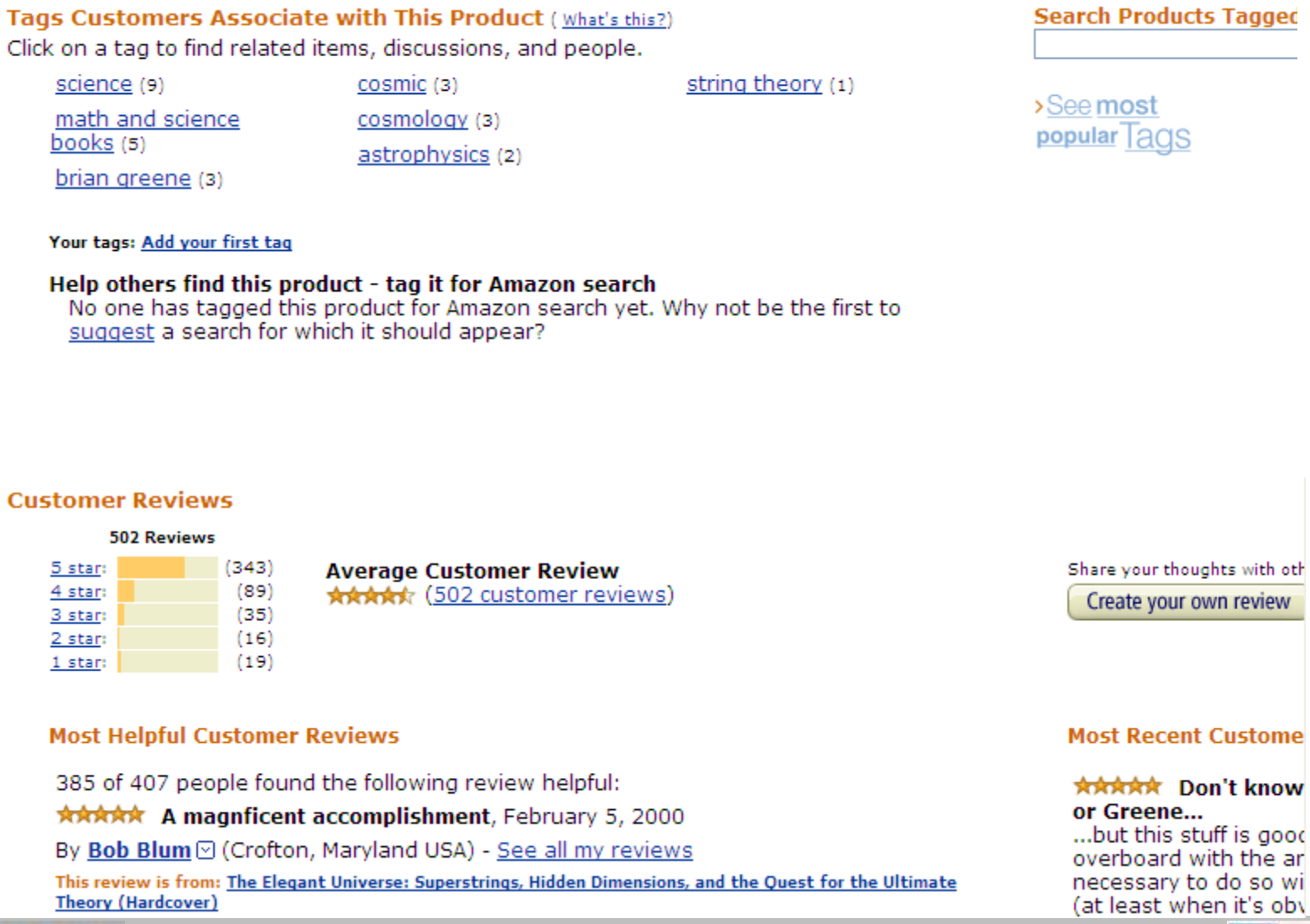
Does Amazon's Social Network Provide Library Reference Services?



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3 star: (35)
2 star: (16)
1 star: (19)

Average Customer Review
★★★★½ (502 customer reviews)

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Most Helpful Customer Reviews

385 of 407 people found the following review helpful:

★★★★★ **A magnficent accomplishment**, February 5, 2000

By **Bob Blum** (Crofton, Maryland USA) - See all my reviews

This review is from: The Elegant Universe: Superstrings, Hidden Dimensions, and the Quest for the Ultimate Theory (Hardcover)

Most Recent Custome

★★★★★ **Don't know**
or Greene...
...but this stuff is gooc
overboard with the ar
necessary to do so wi
(at least when it's obv

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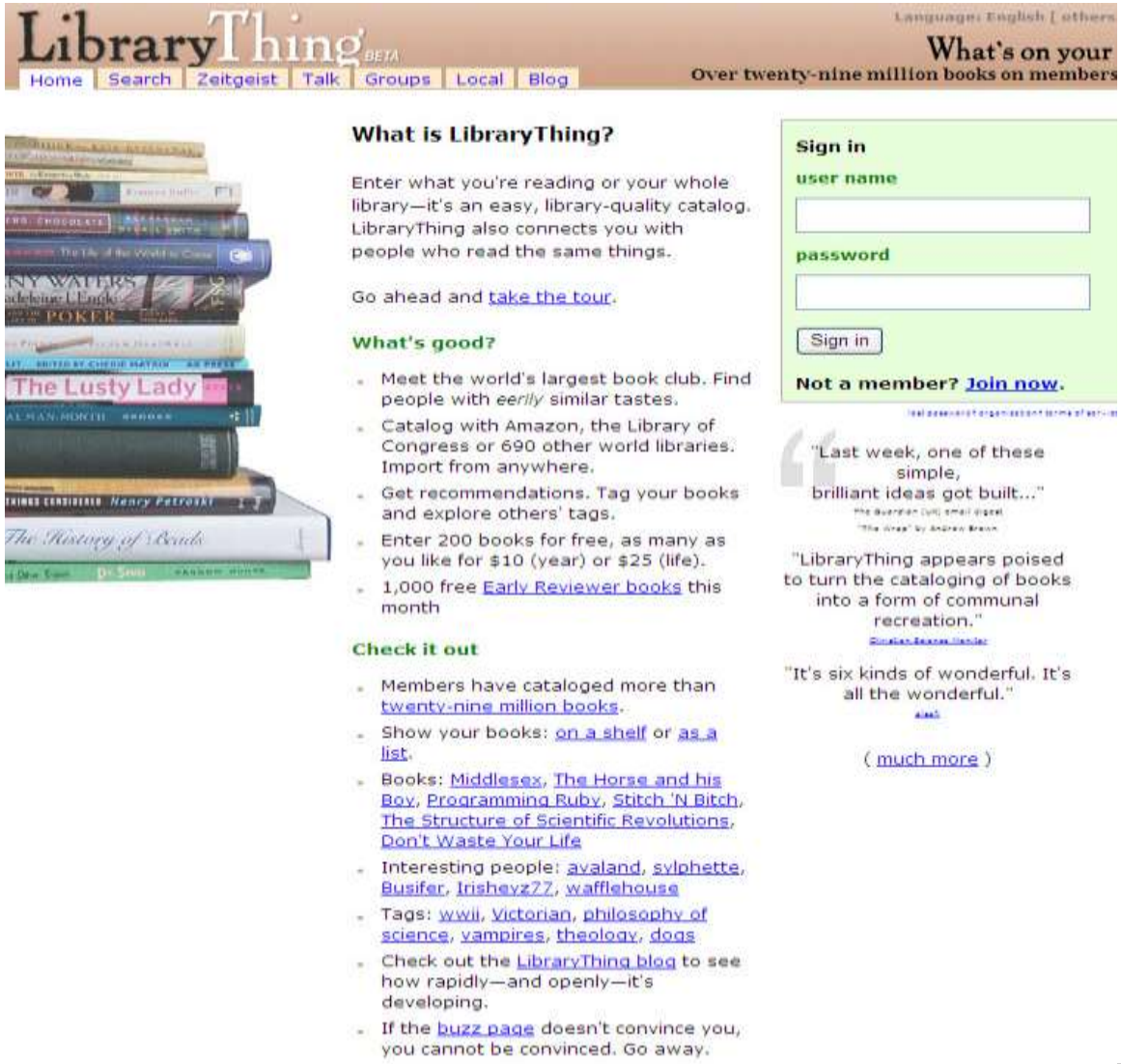
Does “Library Thing” Provide Library Services?



Library Thing as a social network for reference and cataloging

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Not Yet. But The Future Library Will No Longer Be Just A Building

- Every space in the community should be considered to be virtually part of the library
- The library should be everywhere
- Access to a national, maybe international, fluid combination of materials

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Librarians Can Be The Leaders Of This Information Revolution

Traditional Library Role	Future Role?
Purchase materials for a "collection"	Create and be catalyst for new knowledge and culture from printed and electronic sources which are local or anywhere on the Internet
Organize those materials through a catalog	Encourage patrons to tag all material so that they have a a meaningful way to quickly and accurately find what they want in search engines
Refer patrons to materials in the collection	Provide 24 hour a day virtual video reference librarian services, especially in areas of unique knowledge

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Thank You!

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