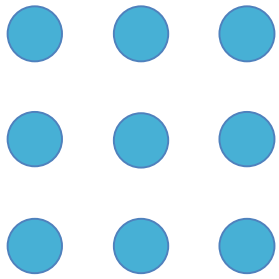


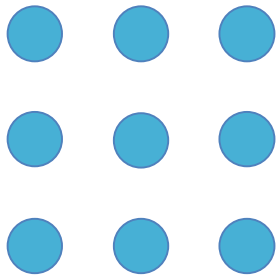
Creating The Library's Future



*Dr. Norman Jacknis
Westchester Library System Board
President, Metropolitan New York Library Council
Senior Fellow, Intelligent Community Forum
October 7, 2014*



The Relevant Trends



Technology Trend #1

Digitization Of Written, Oral and Visual Materials

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

Digital Public Library of America



[Home](#) [Exhibitions](#) [Map](#) [Timeline](#) [Bookshelf](#) [Apps](#)



DIGITAL PUBLIC LIBRARY
OF AMERICA



A Wealth of Knowledge

explore 7,701,227 items from libraries, archives, and museums



Exhibitions

[View all »](#)



Explore
by Place

[Map »](#)

Explore by Date

[Timeline »](#)



Apps

The DPLA is a platform. Developers make apps that use the library's data in many different ways. Here are just a few. [App Library »](#)



FindDPLA

Eric Phetteplace and Jake Orlowitz

Want to see DPLA's related text and images for any Wikipedia article? FindDPLA is an easy-to-install tool that pulls up relevant content from the DPLA any time you view a Wikipedia article.



DPLA Search Widget

Dean Farrell and Josh Wilson

Search the DPLA right from your webpage in three easy steps! DPLA Search Widget allows you to easily install a DPLA search box on your website or WordPress pages.

News



[Community Reps: A Handy Guide to Who They Are and What They Are Doing](#)
Apr 28

[Meet a Community Rep: Lavanda Wagenheim](#)
Apr 25

[All News »](#)

@dpla on Twitter



DPLA @dpla
Spring is here! Enjoy two glorious illustrations from *The Field of Eggs*

55m

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

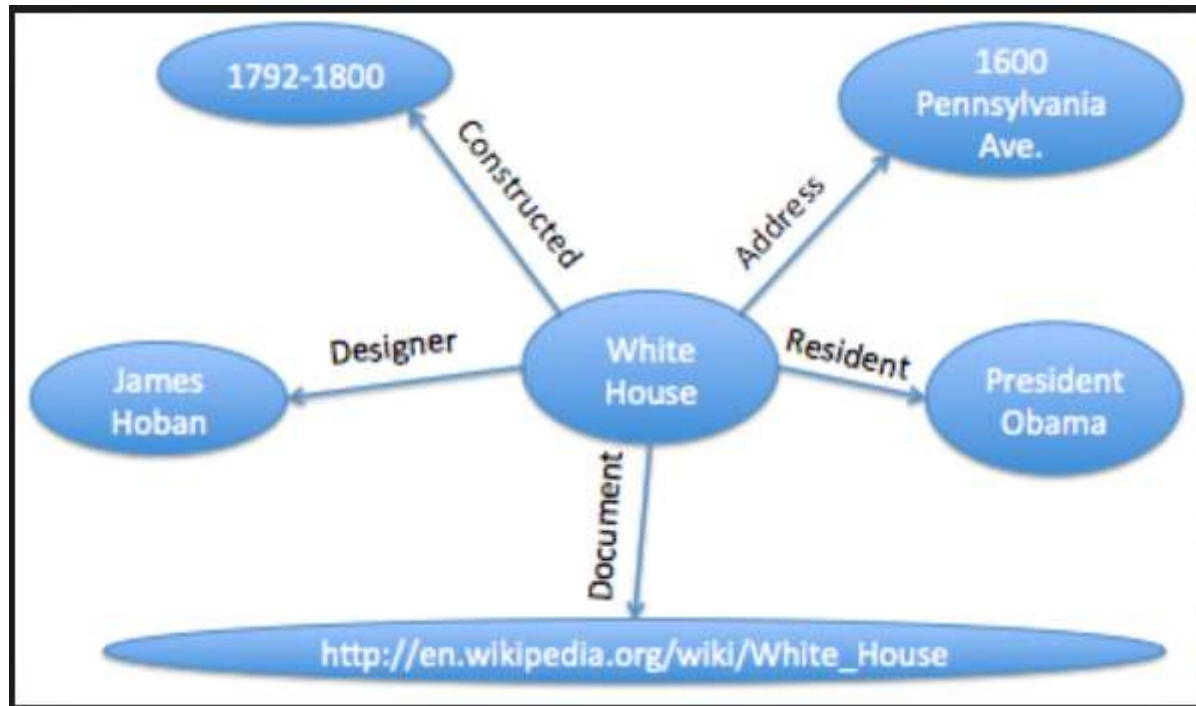
LibraryCloud is a metadata server that gathers library metadata from multiple institutions and makes it available through open APIs and as Linked Open Data. The aim is to make everything libraries know available to the full Web ecosystem.

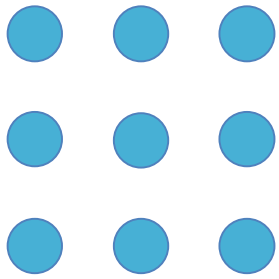


Virtual Views Of A Library: ShelfLife with Shelf Rank



Semantic Web





Technology Trend #2

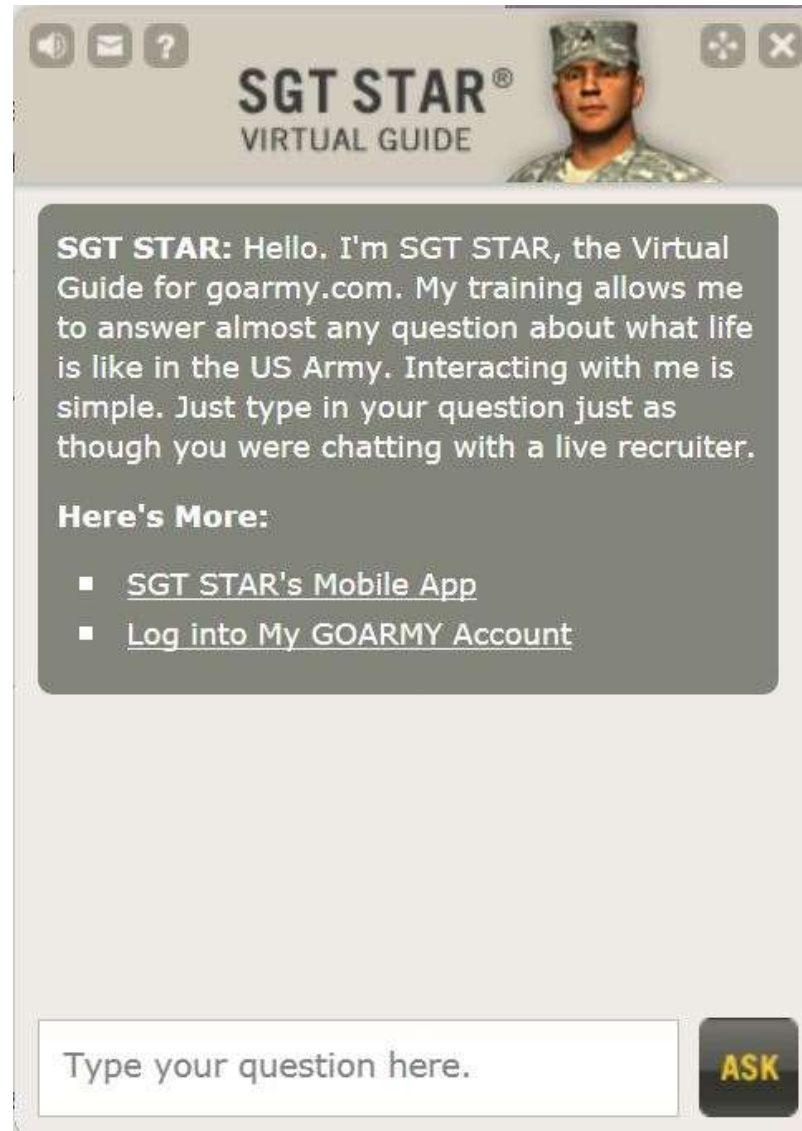
Artificial Intelligence & Robotics

Speech Recognition

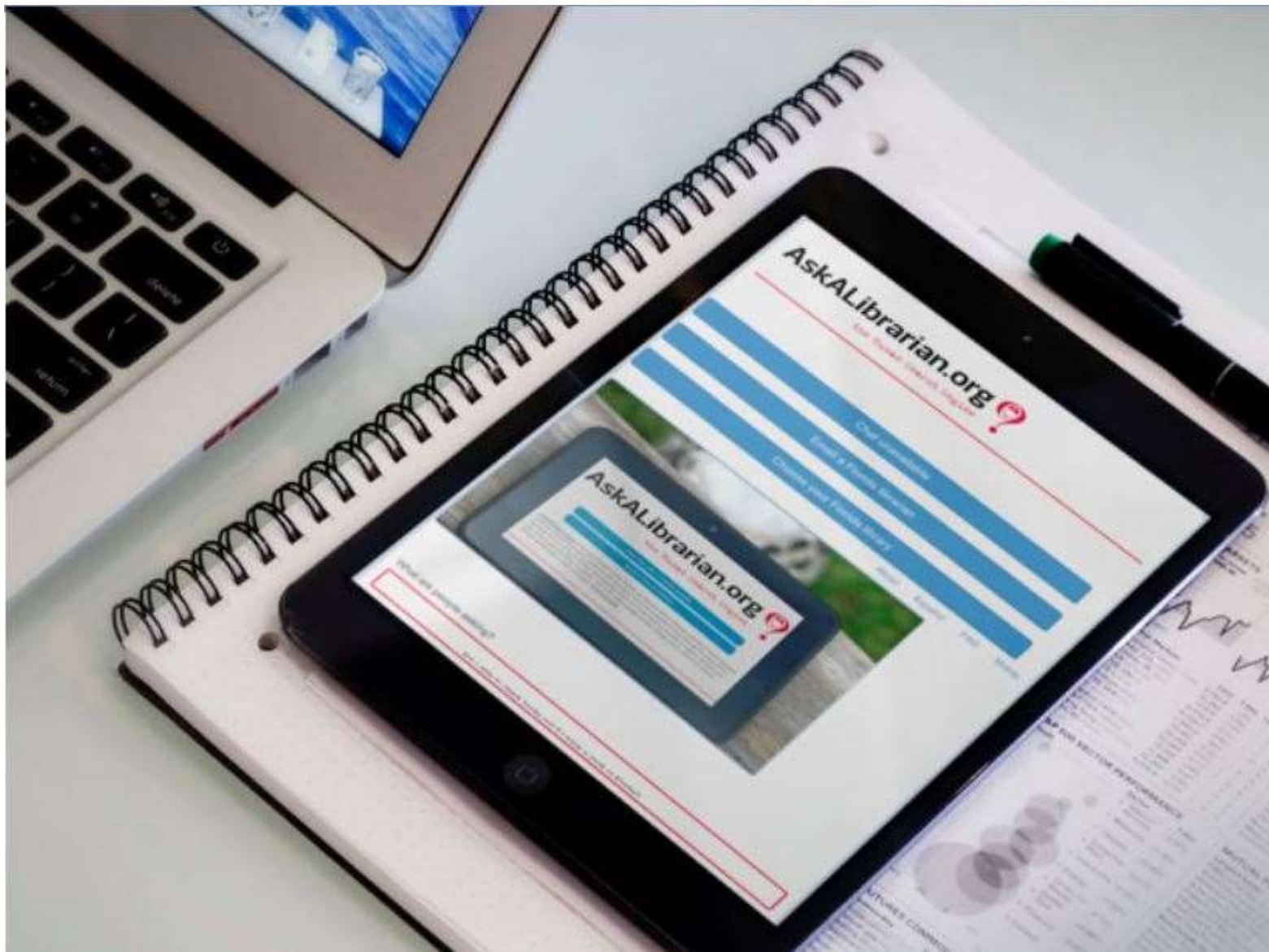
- Most well known current example: Apple Siri
- Also Google and Amazon Yap; Nuance, Datria, etc.



Artificially Intelligent Guide



Ask A Librarian

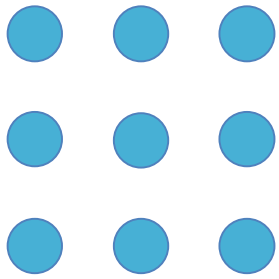


Robots As Human Aides



Robotic Warehouse Workers





Technology Trend #3

High Quality Visual Communications

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.



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







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”



Holographic-Like Telepresence



It's Like Being There

3D HOLOGRAPHIC LECTURE

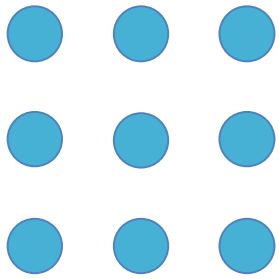
presented at the ASE 2013

in Minneapolis, MN, July 1st

by

Partho Sengupta

MBBS, MD, DM, FASE



Technology Trend #4

Ubiquitous Internet

Some Of The Ways This Is Happening

■ The “cloud”

■ Internet of Things

- sensors
- video/audio surveillance

■ Wearable technology

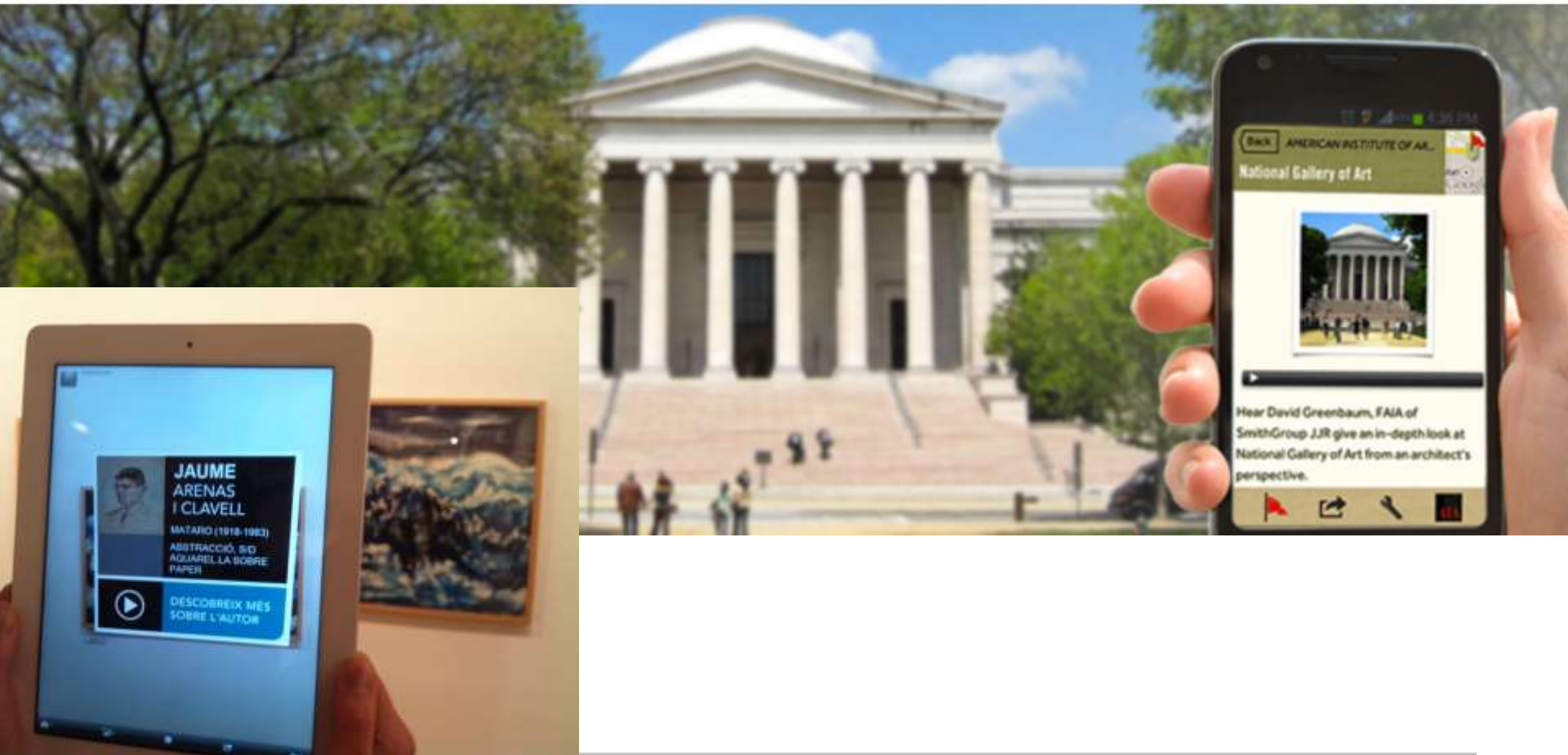
■ Non-traditional user interfaces

- Going beyond the mouse, the typewriter keyboard and even the desktop/laptop display screen

Augmented Reality



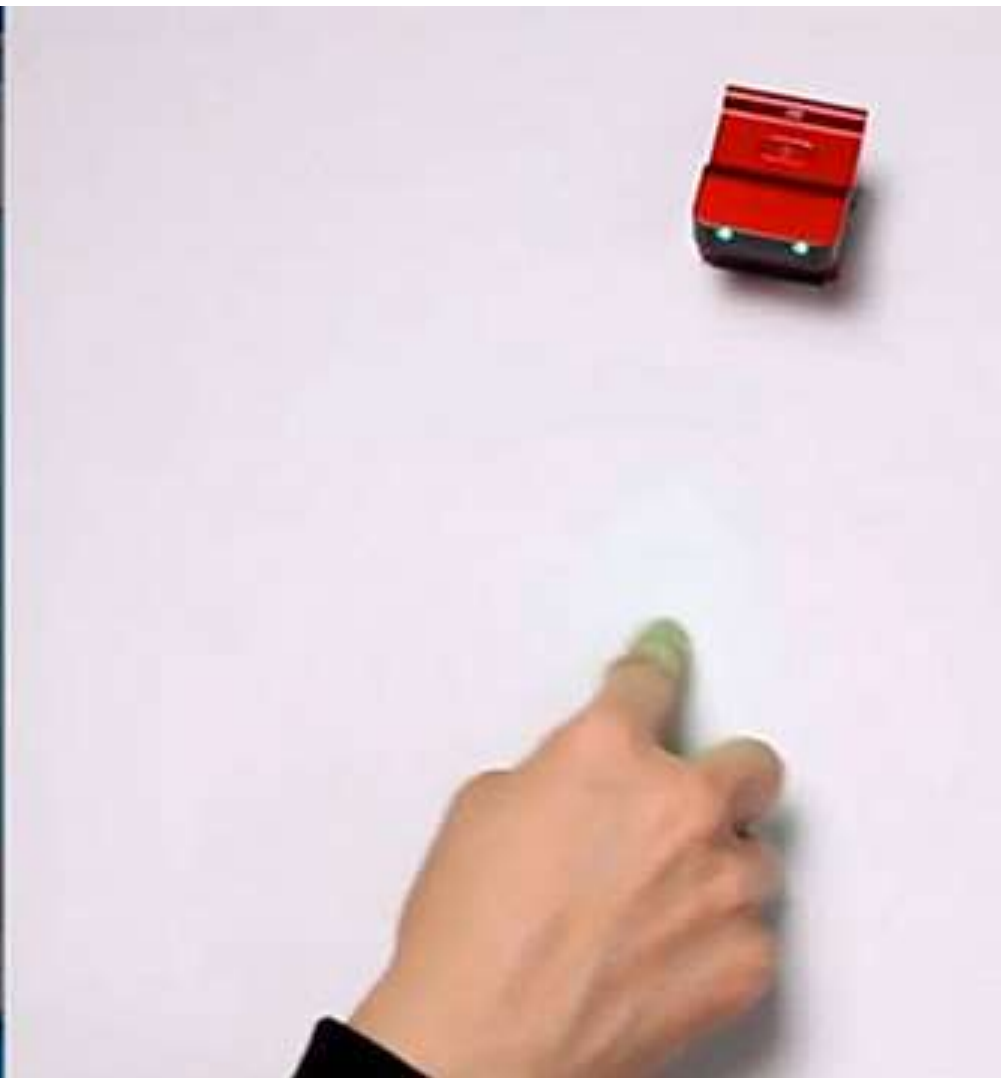
Get More Information About What You're Looking At




WordLens



The Mouse-less Mouse



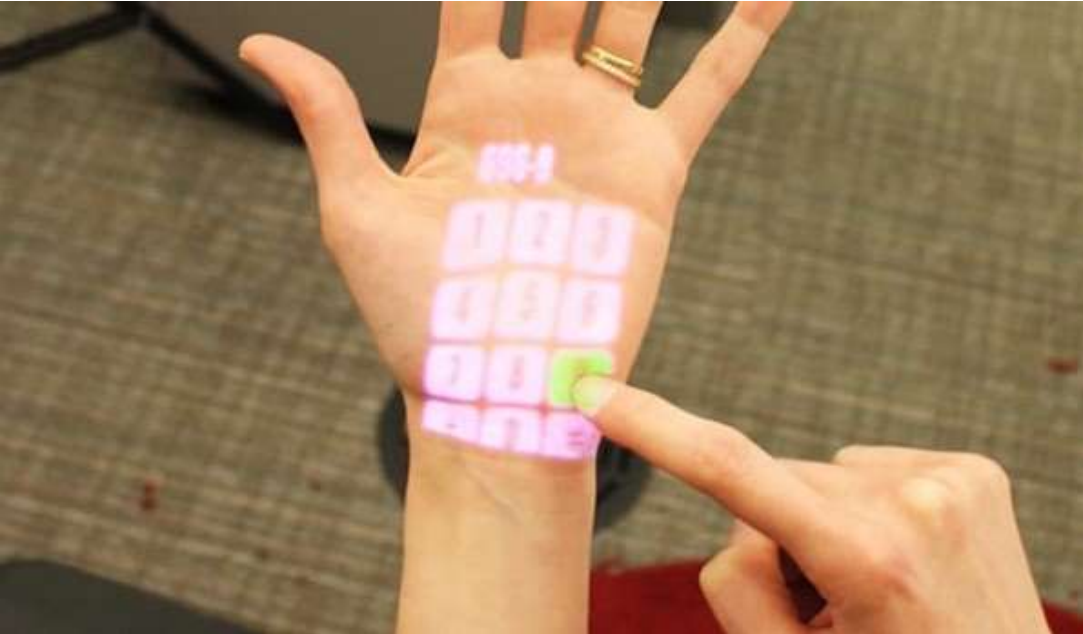
Any Surface Can Be A Keyboard



The screenshot shows the Sears website interface. At the top left is the 'sears' logo. To its right is a search bar with the placeholder text 'Enter keyword or item #'. Below the search bar is a navigation bar with links for 'Departments', 'New Local Ad', 'Deals', and 'Gift'. A blue banner below the navigation bar reads 'Computers & Electronics > Desktops > Accessories'. The main heading of the product page is 'Celluon Celluon Magic Cube Laser Projection Keyboard and Touchpad'. Below the heading, the text 'Sears Item# SPM6111100601 | Model# RESE1004831' is displayed.



Really — Any Surface Can Be A Keyboard!



Any Surface Can Be A Display Screen



Augmented Product Displays



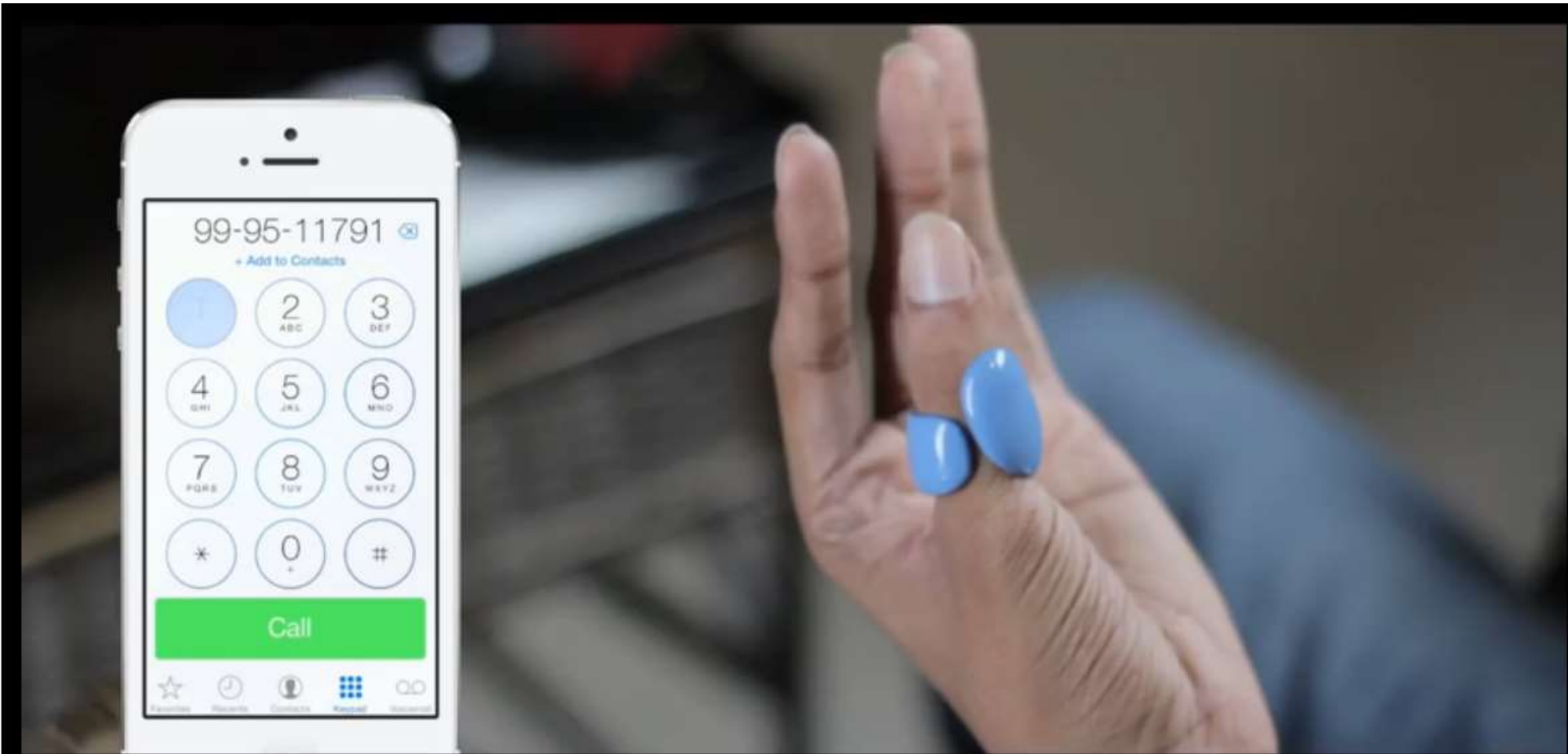
You Can Move Video On Walls



Car Window As Display Screen



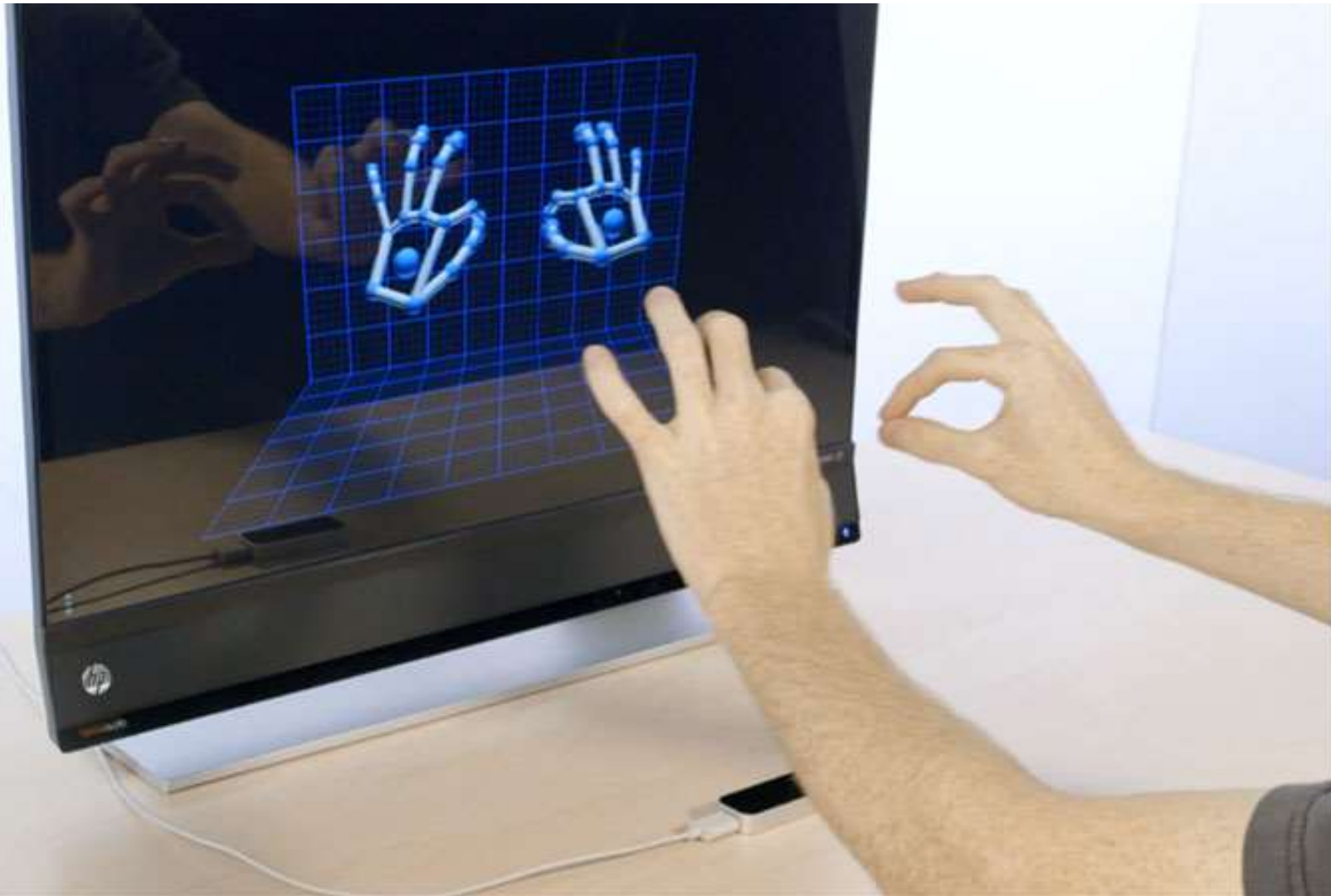
Fin Uses Your Finger For Remote Control



Remote Control By Moving Your Arms



Leap Motion Watches Your Hands



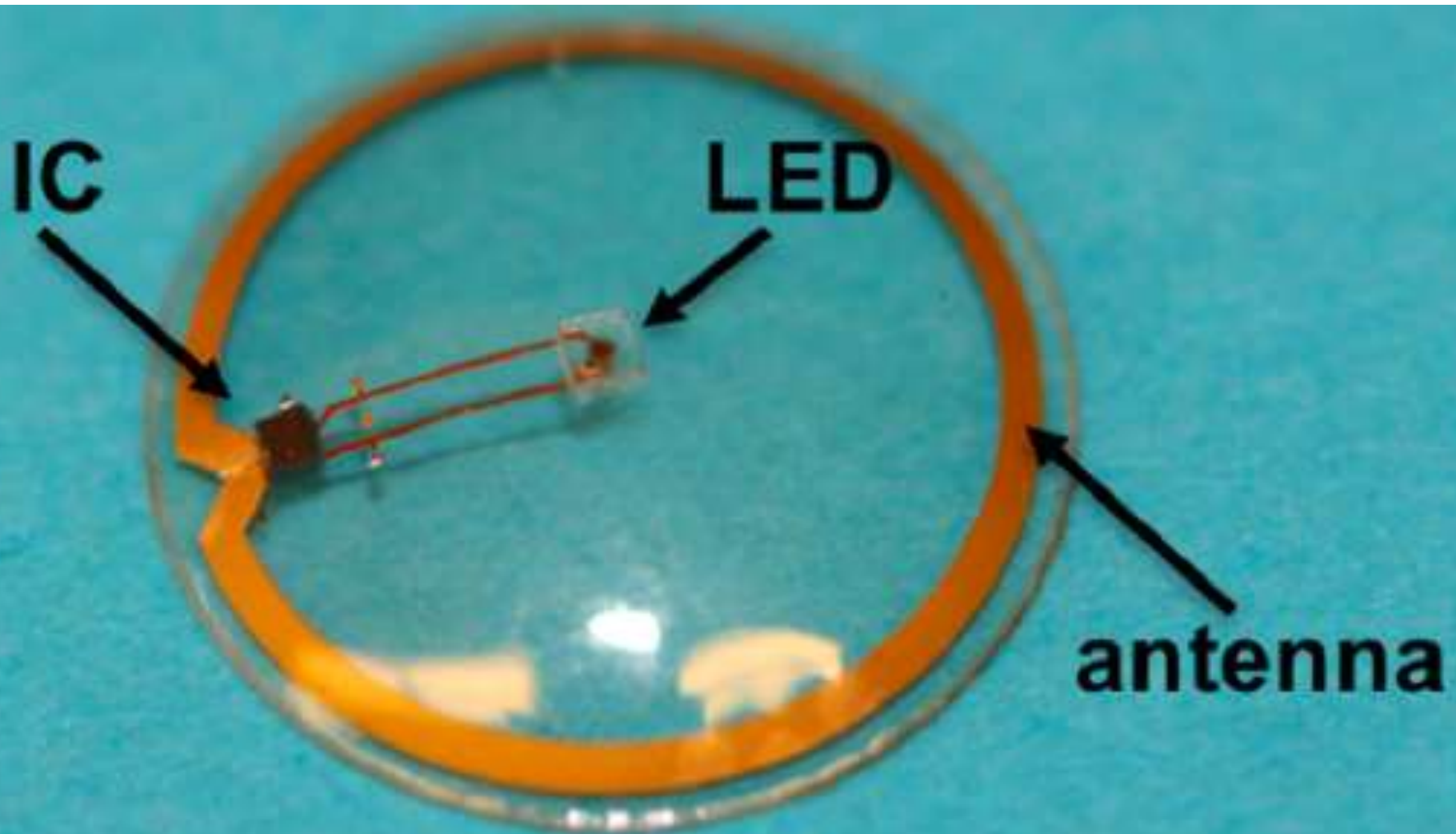
No-Touch Input: Tobii Eye Tracking

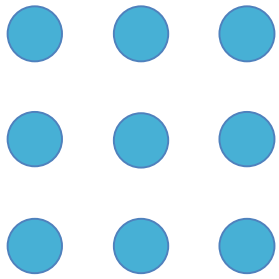


Google Glass Combines Reality And A Virtual Display



Wireless Contact Lens Display





Technology Trend #5

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

You Can Make Your Own Books



Beautiful books. Made by you.

English

Español

Join Today

Sign In

Search Blurb

Why Blurb

Book Genres

Get Started

Self Publishing

Tips & Inspiration

Bookstore

For Business

Create.
Publish.
Sell.

amazon
Try Prime

Norman's Amazon.com

Today's Deals

Gift Cards

Sell

Help

Shop by
Department

Search

All

» Publish to Kindle

Take Control with Independent Publishing

With Amazon's independent publishing services you can reach millions of readers worldwide and keep control of your work. It's fast and easy to publish your print book with [CreateSpace](#), your digital book with [Kindle Direct Publishing](#) and create an audiobook with [ACX](#).

Publish to Kindle

Publish your book for free and reach millions of readers.

Earn royalties of up to 70%. Available for sales to customers in the U.S., U.K., Germany, and many more countries.

Publish quickly. Easily publish in just minutes and have your book appear on Amazon sites within two days.

Distribute globally. Publish once and sell worldwide on Amazon sites. Easily publish your book in multiple languages.

Publish to the Kindle ecosystem. Make your book available for all Kindle devices and free Kindle reading apps.

Get started

kindle | direct
publishing

Lulu



Create

Make your ideas count.
Bring your book to life.

LIBRARY SYSTEM

October 7, 2014

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43

METROPOLITAN
NEW YORK
LIBRARY COUNCIL

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

The screenshot shows the PennTags website. At the top left is the 'PennTags' logo with two stylized birds. To the right is a navigation bar with a search box, a 'pennkey login' button, and links for 'post' and 'about'. Below the navigation bar is a large cloud of tags, with the text 'Popular tags – tags used at least 92 times' above it. The tags include: books, cataloging, census, city_planning, copyright, data, database, dental_home, environmental_justice, fair_use, film, film_music, GIS, google, guides, history, international, internet, libment, libraries, library, mapping, maps, medicine, medieval_studies, metadata, movies, music, new_york, NYTimes, opera, PennVetTags, philadelphia, psychoanalysis, refbooks, research, scholarship_is_changing, statistics, stats, strategic_planning, tagging, technology, to_read, transportation, transportation_policy, and to_read. On the right side of the page, there is a sidebar with a 'subscribe to this page' button, a 'search' box, and a section titled 'some recent projects' which includes links to 'make a new project', 'KnowledgeWorks', 'NOTE', 'Contact us', and 'Journal'. At the bottom of the sidebar is a 'view all' link and a 'projects' link.

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

Aarhus: Music Lab

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



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.



3D Printing



Toy car



Dinosaur skull



Working bicycle



Model engine

Sources: Stratasys, 2011; European Air Defense System

Even body parts ...

3D-printed titanium lower jaw implant

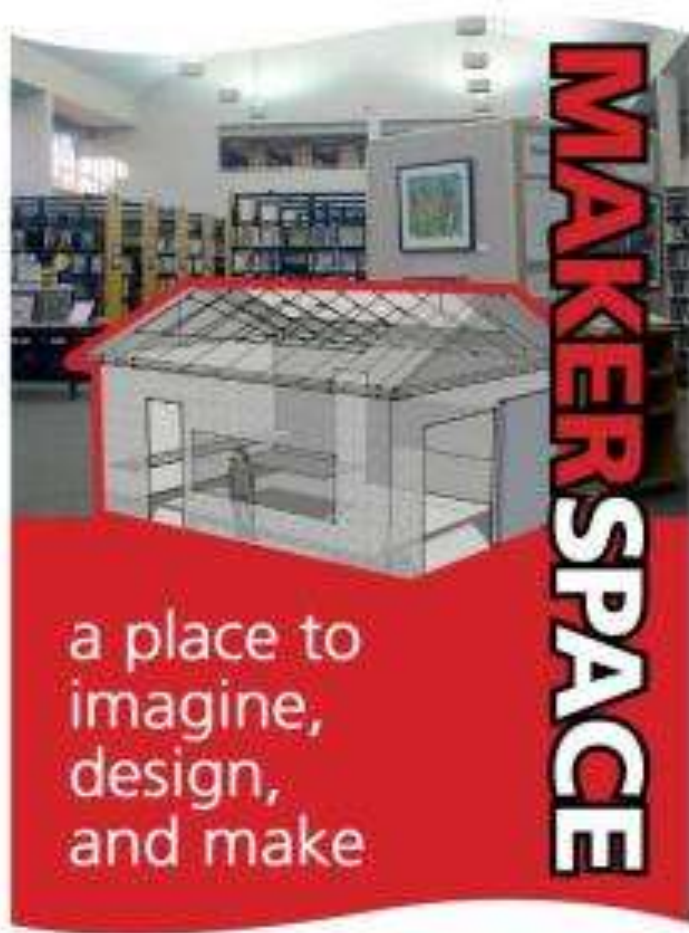


3D Printer In Long Island Library

Libraries bringing new technology to users



Westport Library Maker Space



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

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

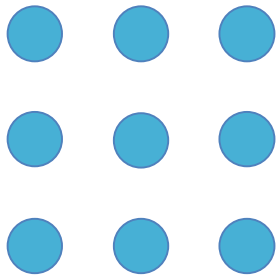


Long Tail In Books And Products Challenges Companies & Libraries



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



Thinking About Libraries In This Future World

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	?

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**

The Warnings Have Been Around For A Long Time

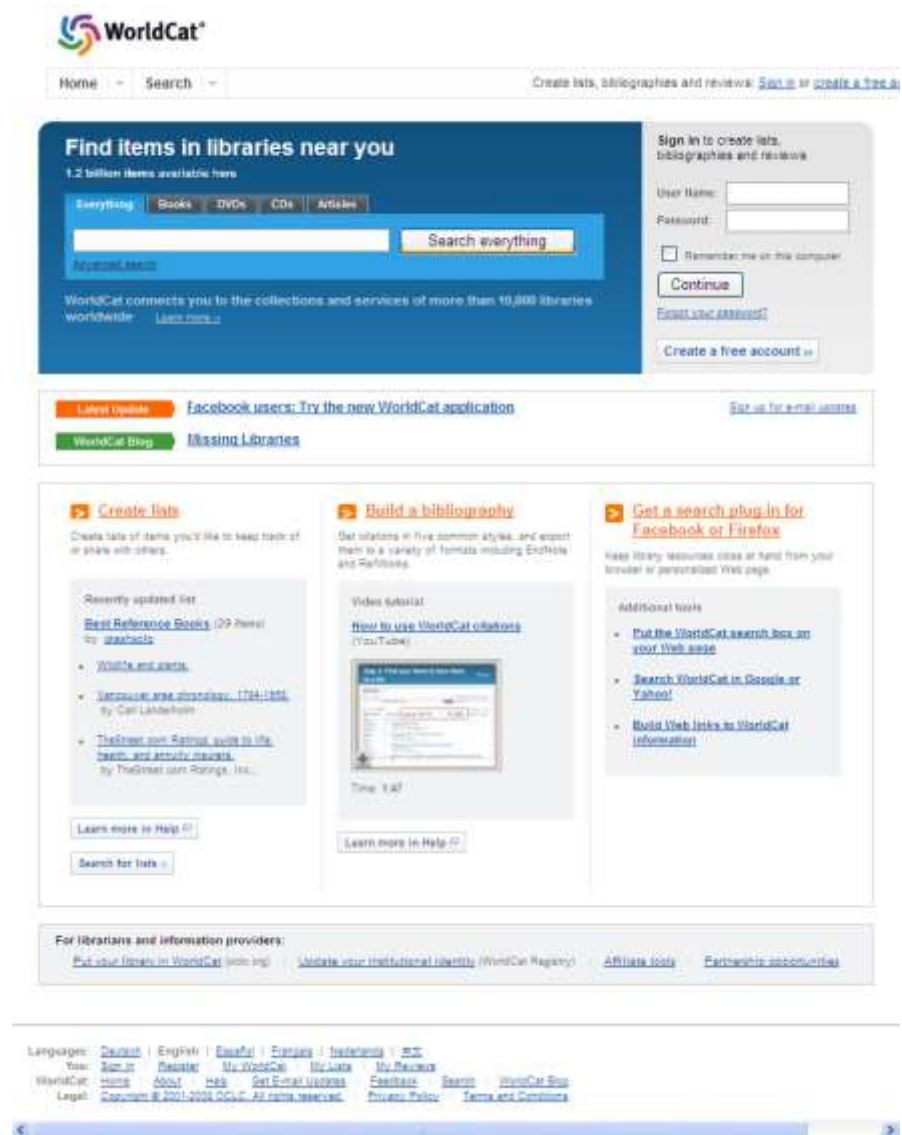
“What are the implications of all for this for the future of public libraries? ... The answer is that while we cannot be certain about the future for our services, we can and should be developing a vision which encompasses and enriches the potential of the Internet. **If we do not do that then others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

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

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

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.



Does Google Provide Library Services?

[Web](#) [Images](#) [Maps](#) [News](#) [Shopping](#) [Gmail](#) [more ▼](#)

[My library](#) | [Sign in](#)



Search Books

[Advanced Book Search](#)
[Google Book Search Help](#)

Books Showing:

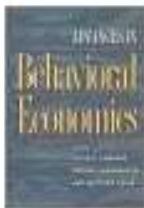
Books 1 - 10 of 9100 on behavioral economics. (0.09 seconds)

[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 ...

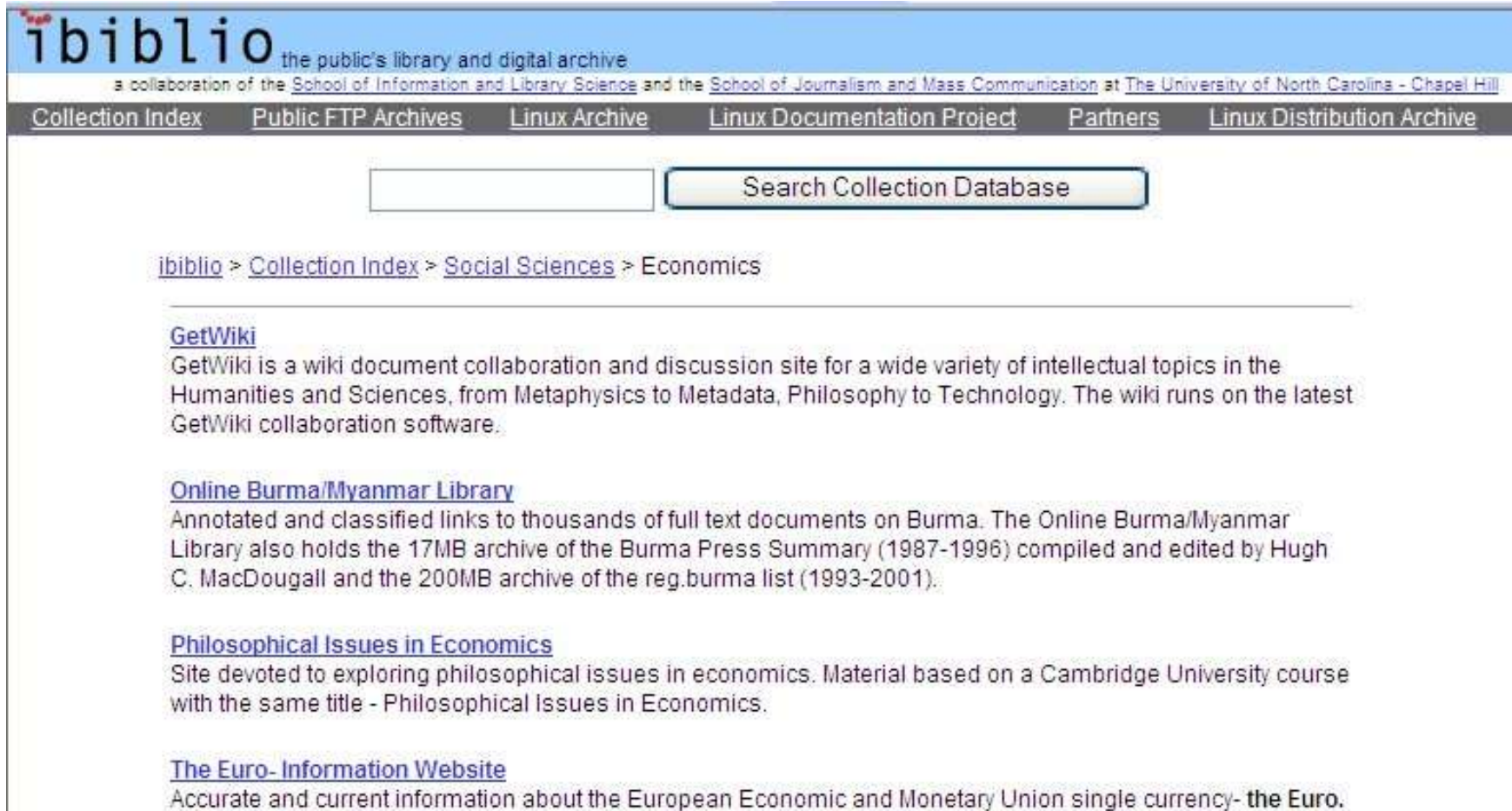
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[Behavioral Dimensions of Retirement Economics](#)

by Harold A. Ainsworth - [Business & Economics](#) - 1999 - 388 pages

Does ibiblio Provide Library Services?



The screenshot shows the ibiblio website. At the top, the logo "ibiblio" is displayed with the tagline "the public's library and digital archive". Below this, a line of text states: "a collaboration of the [School of Information and Library Science](#) and the [School of Journalism and Mass Communication](#) at [The University of North Carolina - Chapel Hill](#)". A navigation bar contains links: [Collection Index](#), [Public FTP Archives](#), [Linux Archive](#), [Linux Documentation Project](#), [Partners](#), and [Linux Distribution Archive](#). Below the navigation bar is a search interface with a text input field and a button labeled "Search Collection Database". The main content area shows a breadcrumb trail: [ibiblio](#) > [Collection Index](#) > [Social Sciences](#) > Economics. There are four entries listed below:

- [GetWiki](#)**
GetWiki is a wiki document collaboration and discussion site for a wide variety of intellectual topics in the Humanities and Sciences, from Metaphysics to Metadata, Philosophy to Technology. The wiki runs on the latest GetWiki collaboration software.
- [Online Burma/Myanmar Library](#)**
Annotated and classified links to thousands of full text documents on Burma. The Online Burma/Myanmar Library also holds the 17MB archive of the Burma Press Summary (1987-1996) compiled and edited by Hugh C. MacDougall and the 200MB archive of the reg.burma list (1993-2001).
- [Philosophical Issues in Economics](#)**
Site devoted to exploring philosophical issues in economics. Material based on a Cambridge University course with the same title - Philosophical Issues in Economics.
- [The Euro- Information Website](#)**
Accurate and current information about the European Economic and Monetary Union single currency- the Euro.

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SEARCH INSIDE!™



the elegant universe

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)

List Price: \$49.95
Price: **\$13.57** & eligible for **FREE Super Saver Shipping** on orders over \$25. [Details](#)
You Save: **\$6.38 (32%)**

In Stock.
Ships from and sold by Amazon.com. Gift-wrap available.

Want it delivered **Monday, August 4?** Order it in the next **18 hours and 33 minutes**, and choose **One-Day Shipping** at checkout. [See details](#)

> **61 used & new** available from **\$9.48**

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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 undulation](#), [quantum jitters](#), [five string theories](#), [resonant vibrational patterns](#), [circular girth](#), [given string theory](#), [second superstring](#), [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 fat](#)

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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Search Inside This Book:

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](#)

Does Amazon's Social Network Provide Library Reference Services?

Tags Customers Associate with This Product ([What's this?](#))

Click on a tag to find related items, discussions, and people.

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[math and science](#)
[books](#) (5) [cosmology](#) (3)
[brian greene](#) (3) [astrophysics](#) (2)

Your tags: [Add your first tag](#)

Help others find this product - tag it for Amazon search






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Search Products Tagged

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Customer Reviews

502 Reviews

[5 star:](#)  (343)
[4 star:](#)  (89)
[3 star:](#)  (35)
[2 star:](#)  (16)
[1 star:](#)  (19)

Average Customer Review

★★★★★ (502 customer reviews)


Share your thoughts with others

Create your own review

Most Helpful Customer Reviews

385 of 407 people found the following review helpful:

★★★★★ **A magnificent 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 Customer Reviews

★★★★★ **Don't know or Greene...**

...but this stuff is good overboard with the amount necessary to do so with (at least when it's obvious)

Does “Library Thing” Provide Library Services?



What is LibraryThing?

Enter what you're reading or your whole library—it's an easy, library-quality catalog. LibraryThing also connects you with people who read the same things.

Go ahead and [take the tour](#).

What's good?

- Meet the world's largest book club. Find people with eerily similar tastes.
- Catalog with Amazon, the Library of Congress or 690 other world libraries. Import from anywhere.
- Get recommendations. Tag your books and explore others' tags.
- Enter 200 books for free, as many as you like for \$10 (year) or \$25 (life).
- 1,000 free [Early Reviewer books](#) this month

Check it out

- Members have cataloged more than [twenty-nine million books](#).
- Show your books: [on a shelf](#) or [as a list](#).
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- Interesting people: [avaland](#), [sylphette](#), [Busifer](#), [Irisheyz77](#), [wafflehouse](#)
- Tags: [wwii](#), [Victorian](#), [philosophy of science](#), [vampires](#), [theology](#), [dogs](#)
- Check out the [LibraryThing blog](#) to see how rapidly—and openly—it's developing.
- If the [buzz page](#) doesn't convince you, you cannot be convinced. Go away.

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“

“Last week, one of these simple, brilliant ideas got built...”

the Guardian (UK) email digest
“the (great)” by Andrew Brown

“LibraryThing appears poised to turn the cataloging of books into a form of communal recreation.”

Reuters-News-Service

“It's six kinds of wonderful. It's all the wonderful.”

ALAS

([much more](#))

Library Thing as
a social network
for reference
and cataloging

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**

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 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

Thank You!

Dr. Norman Jacknis
+1 (914) 930-4840
norm@jacknis.com
Blog: njacknis.tumblr.com
Twitter: @NormanJacknis

