User experience 2011

Search Patterns: Design for Discovery

Peter Morville October 6, 2011



















3C0M

AMERICAN





Johnson Johnson

THE KRESGE FOUNDATION









lôôksmart^{*}









Procter&Gamble

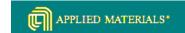




















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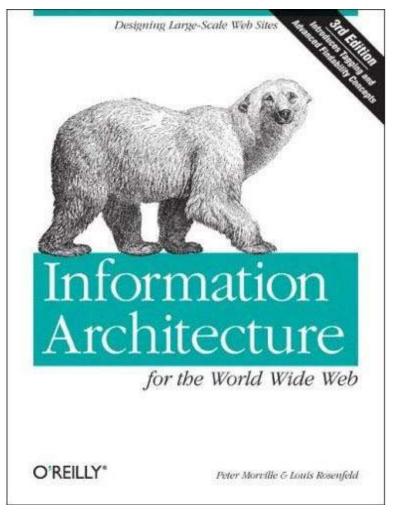




American Psychological Association

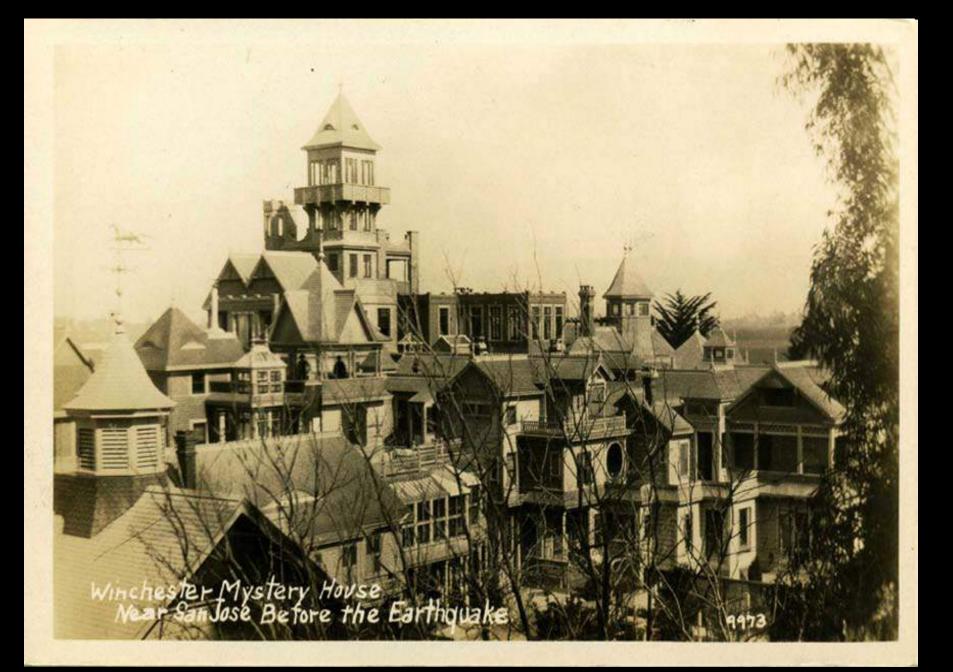


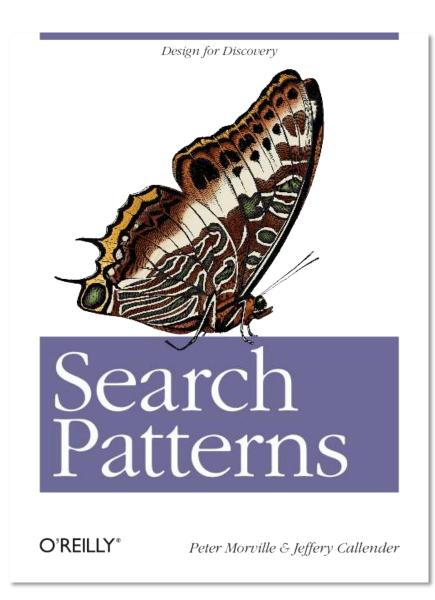
Semantic Studios



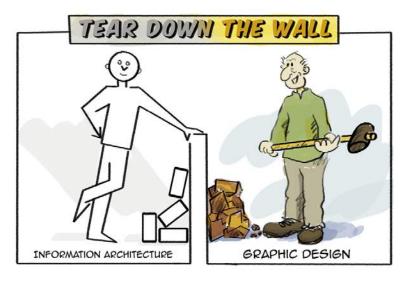
in-for-ma-tion ar-chi-tec-ture n.

- The structural design of shared information environments.
- The combination of organization, labeling, search, and navigation systems in web sites and intranets.
- The art and science of shaping information products and experiences to support usability and findability.
- An emerging discipline and community of practice focused on bringing principles of design and architecture to the digital landscape.





"Search is among the most disruptive innovations of our time. It influences what we buy and where we go. It shapes how we learn and what we believe."

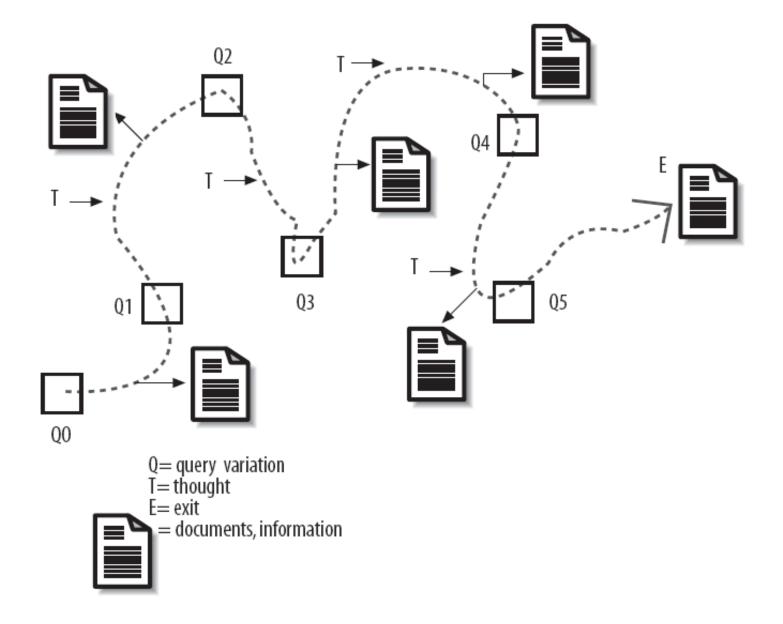


Illustrated by Jeff Callender, Q LTD

MOST OF THE COMPLAINTS WE GET ARE DUE TO THE WAY USERS SEARCH; THEY USE THE WRONG KEYWORDS.

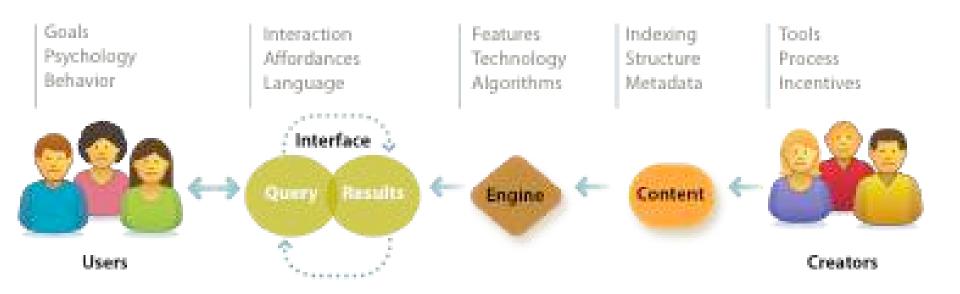






Marcia Bates: Berrypicking, Evolving Search (1989)

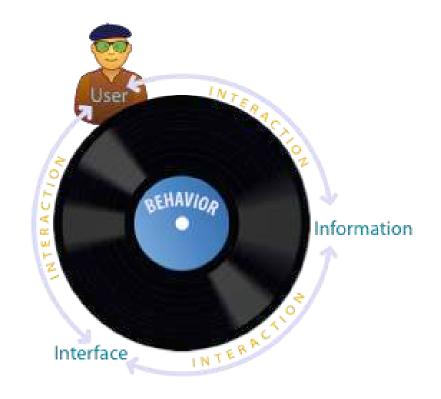
Search is a... Complex, Adaptive System

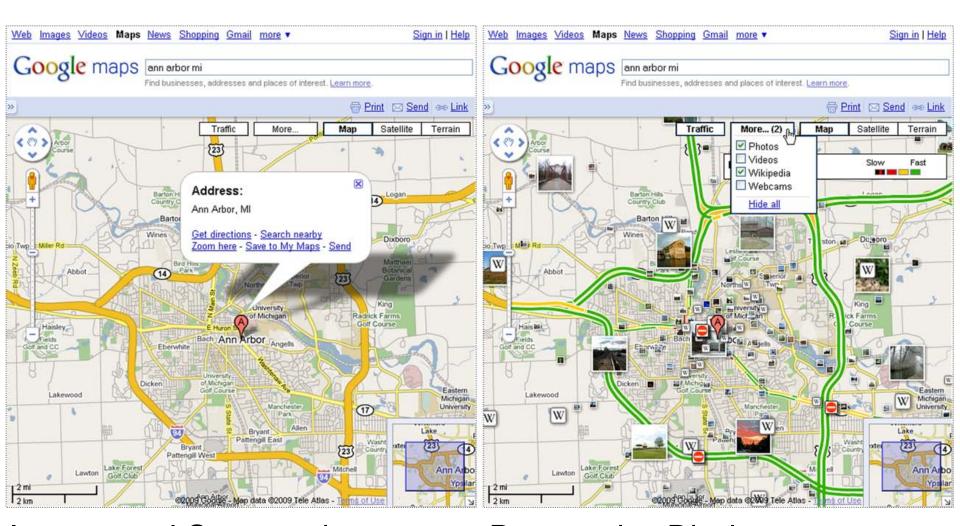


Source: Search Patterns (2010)

Principles of Design

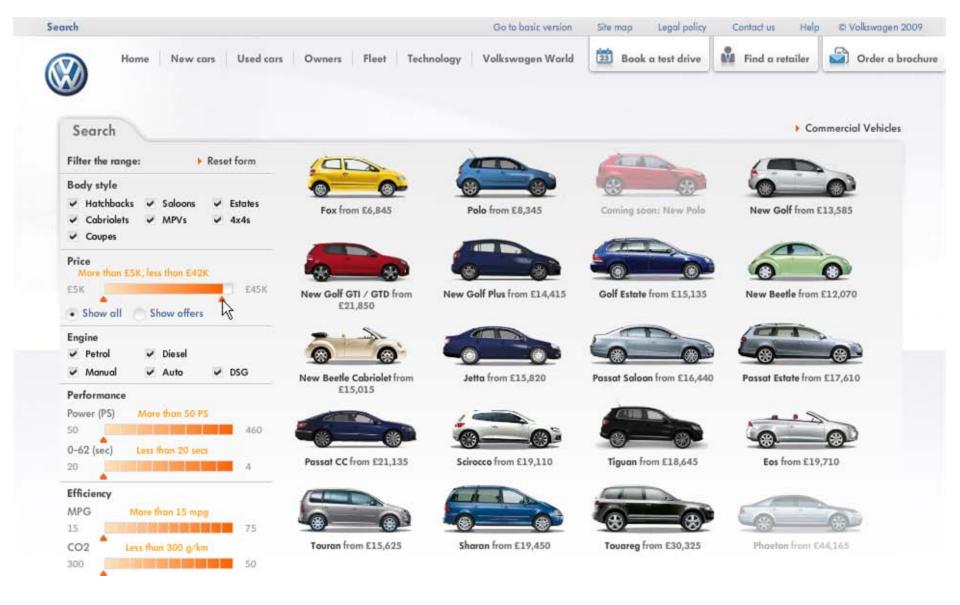
Incremental Construction **Progressive Disclosure** Immediate Response Predictability **Alternate Views** Recognition Over Recall **Minimal Disruption Direct Manipulation** Context of Use





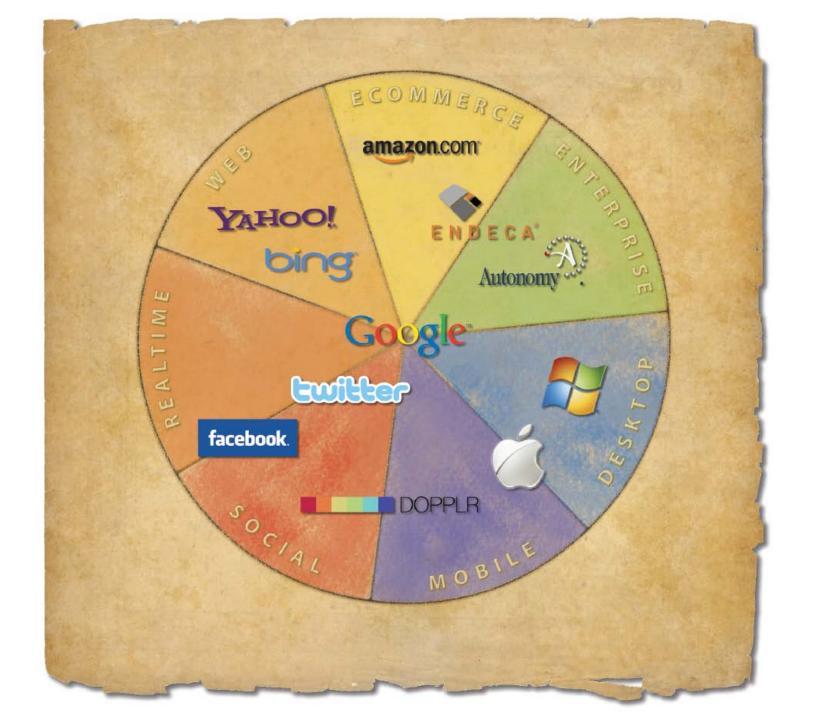
Incremental Construction one step at a time...

Progressive Disclosure more within reach...

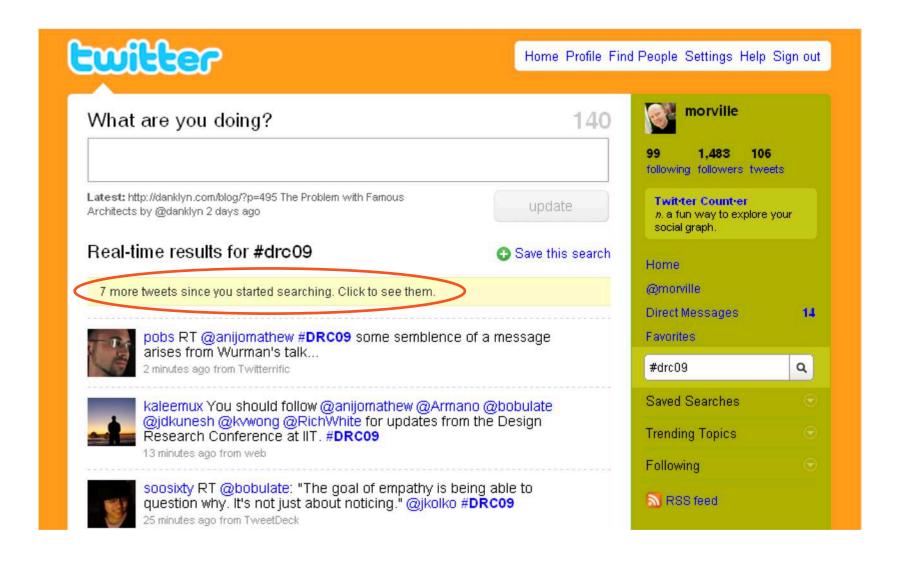


Immediate Response flow requires feedback...

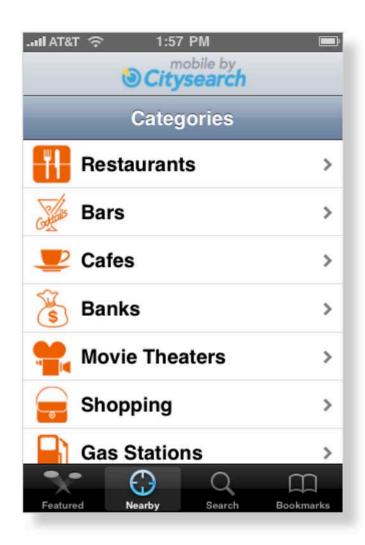
Predictability feed-forward features and results...

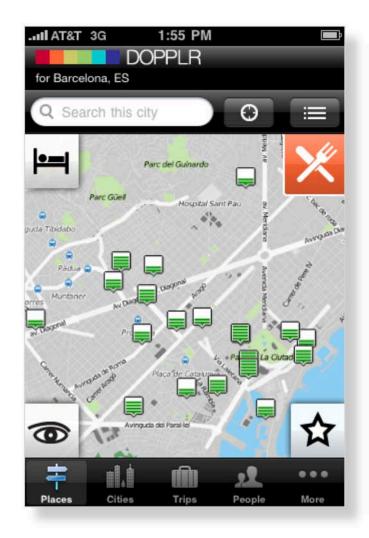


Realtime Search



Mobile Search





There is one timeless way of building.

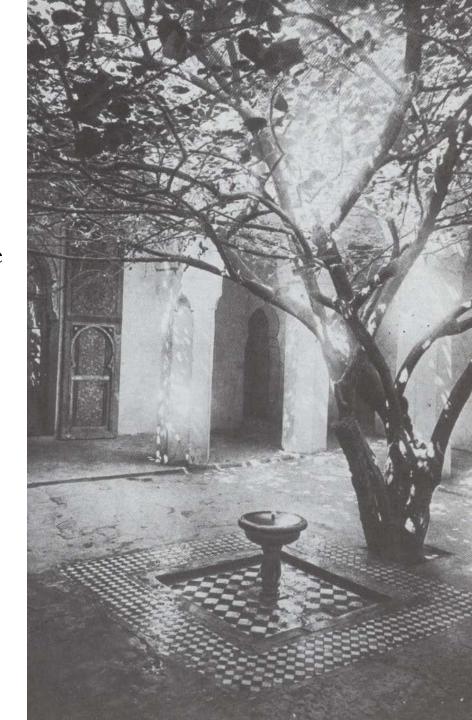
It is thousands of years old, and the same today as it has always been.

The great traditional buildings of the past, the villages and tents and temples in which man feels at home, have always been made by people who were very close to the center of this way.

It is not possible to make great buildings, or great towns, beautiful places, places where you feel yourself, places where you feel alive, except by following this way.

And, as you will see, this way will lead anyone who looks for it to buildings which are themselves as ancient in their form, as the trees and hills, and as our faces are.

The Timeless Way of Building Christopher Alexander



Window Place (180)

Everybody loves window seats, bay windows, and big windows with low sills and comfortable chairs drawn up to them.

May be part of:

- Entrance Room (130)
- Zen View (134)
- Light on Two Sides (159)
- Street Windows (164)

May contain:

- Alcoves (179)
- Low Sill (222)
- Built-In Seats (202)
- Deep Reveals (223)

A Pattern Language Christopher Alexander et al.





Search Peter Morville's photostrea Search

Peter Morville > Collections



Search Patterns

Explore -

A sandbox for collecting search examples, patterns, and anti-patterns. Please add tags, notes, and comments, and suggest new examples.



Best Bets 7 sets



Faceted **Navigation** 17 sets



Behavior & Design 4 sets



Auto-Suggest



Clustering 3 sets



Structured Results

1 set



Pagination 2 sets

Advanced Search

2 sets



Site Search (Small)

2 sets



Site Search (Large)

2 sets



E-Commerce

2 sets



Web Search

5 sets



Social Search

4 sets



Enterprise

2 sets



Libraries 3 sets



Vertical Search

3 sets



Media Search

11 sets



Personal

3 sets



Local Search

2 sets



Mobile Search

10 sets

Behavior Patterns

Quit

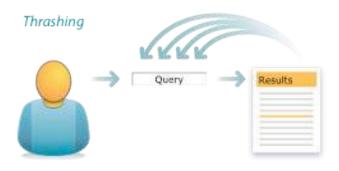


Narrow

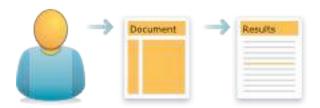


Expand





Pearl Growing

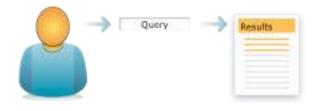


Design Patterns





Best First



Faceted Navigation

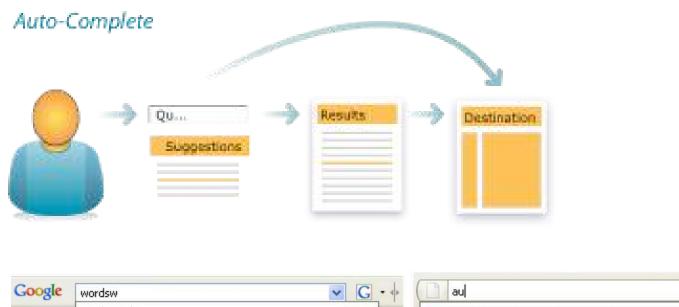


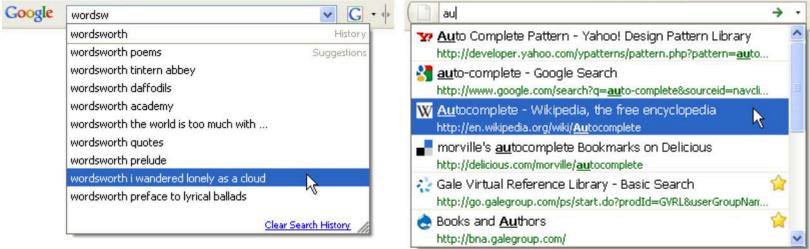
Advanced Search



Structured Results







Because typing (and typos) take time.



Best First



In search, results must be simple, fast, and relevant.



constitution

Search

Advanced Search

Web Show options ...

Results 1 - 10 of about 111,000,000 for constitution [definition] (0.12 seconds)

43%

15%

10%

The United States Constitution - The U.S. Constitution Online ...

Feb 6, 2009 ... A Hypertext version of the United States Constitution.

www.usconstitution.net/const.html - Cached - Similar

LII: Constitution

[The full Constitution, in both hypertext and word-processor formats, can be purchased and downloaded for individual local use from the Lll. ...

Constitution of the United States - Official The work of many minds, the US Constitution stands as a model of cooperative

statesmanship and the art of compromise. www.archives.gov/exhibits/charters/constitution.html - Cached - Similar

www.law.cornell.edu/constitution/constitution.overview.html - Cached - Similar

5%

Charters of Freedom - The Declaration of Independence, The ...

Download High-Resolution Images of the Declaration, Constitution, Bill of Rights and much · Meet America's Founding Fathers: Learn about George Washington ... www.archives.gov/exhibits/charters/ - Cached - Similar More results from www.archives.gov »

News results for constitution



Reps adopt new procedure for constitution amendment - 3 days ago

Both chambers have disagreed with each other on the code of behaviour relating to the constitution review process, and said they will go ahead on individual ...

NEXT - 7 related articles »

NIGER: Timeline of constitution controversy - Reuters AlertNet - 476 related articles » controversy over kurdish constitution - nigash - 4 related articles »

Local business results near USS Constitution, Boston, MA





USS Constitution - www.ussconstitutionmuseum.org 24 5th St, Charlestown - (617) 242-5670

3 reviews, directions, and more »



www.ussconstitutionmuseum.org Eighth, Charlestown - (617) 242-1812 2 reviews, directions, and more »

USS Constitution Museum -

www.ussconstitutionmuseum.org Building 22, Boston National Historical Park, Charlestown -(617) 426-1812

3 reviews, directions, and more »

Sponsored Links

Pocket-size Constitution

America's founding documents in book from the Cato Institute www.CatoStore.org

U.S. Constitution

Comprehensive Information About the U.S. Constitution We Once Had. www.truth-it.net/us_constitution

Michigan Government Info.

MI's Nonpartisan Council for State /Local Gov't Analysis-Get the Facts www.crcmich.org

US Bill of Rights

Learn About the Bill of Rights & Get a Free Pocket Constitution! www.askheritage.org/

United states constitution

Legal Information & Research on US Constitution & Federal Laws. USConstitution.FindLaw.com

ACS Blog - Constitution

Rigorous Debate on Legal & Policy Issues that matter in 2009 www.acslaw.org/acsblog

Reference Information

Get history Facts & Events On Your Desktop with Free Reference Toolbar Reference, alot, com-

> Source: Marti Hearst's Search User Interfaces (2009)







You -

Organize -

Contacts -

Groups -

Explore -

Search everyone's photos

Search -





wairarapa dawn

Uploaded on 14 December 2006



By go wild

See more photos, or visit go wild's profile.

park, new, red, orange



Untitled

Uploaded on 12 April 2007



By deb sidelinger

See more photos, or visit her profile.

facilities in the last of the





SEARCH



Search Term(s)

cars

All

✓ SEARCH

advanced search

Search took 0.19 seconds. Showing results 1-10 of about 431 for cars.

WCC Search Results

★Featured Results

School of Automotive and Motorcycle Technology

http://wccnet.edu/academicinfo/creditofferings/programs/schools.php?code=SAMT

Video: Automotive Program

http://wccnet.edu/flashvideos/index.php?video=auto-body

WCC Certificates and Degrees: Custom Cars and Concepts Certificate ...

Information for the Custom Cars and Concepts Certificate (CTCCC), offered at Washtenaw Community College, Ann Arbor,

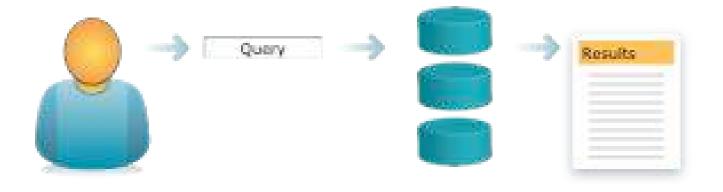
http://wccnet.edu/academicinfo/creditofferings/programs/degree.php?code=CTCCC - 33k - Cached

WCC Certificates and Degrees: Custom Cars & Concepts Advanced ...

Information for the Custom Cars & Concepts Advanced Certificate (CVCCCA), offered at Washtenaw Community College, Ann Arbor, Ml. ...

http://wccnet.edu/academicinfo/creditofferings/programs/degree.php?code=CVOCCA - 33k - Cached More results from www4.wccnet.edu/academicinfo/creditofferings/programs/degree.php »

Federated Search



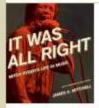
Because users don't know where to look.





Audio | Events | Local Events | Music:

Submitted by manz on Sat, 03/15/2008 - 3:29pm.



Mitch Ryder is around town this week!

Author and reporter James A. Mitchell will be discussing his new (soon-to-be-released) book, It was All Right: Mitch Ryder's Life in Music, on Wednesday, March 19 at 7:00pm the Downtown Library. Mitchell will be discussing the life and times of the music legend as presented in the biography. Mitch Ryder has been in the music business most of his life and has had many hitsongs, most notably the ones from the 1960s, such as 'Devil With a Blue Dress On."

The music doesn't stop there! On Saturday, March 22 Mitch Ryder and the Detroit Wheels will be performing live at the Michigan Theater at 8:00pm as part of the Legends of Rock & Roll Series. In lieu of an opening act Ryder will be interviewed by rock journalist Gary Graff. Visit the theater's website for stats and ticket info.

login or register to post comments

Events Blog | AXIS | Teens

Submitted by K.C. on Sat; 03/15/2008 - 9:29am.



Cassandra Carter's Latest!

Released March 1, 16 Isn't Always Sweet is about Jordan who for her 16th birthday gives herself a hip new look. She and her best friend Adrienne audition for the hottest rapper's new video. When only Jordan is selected, Adrienne reacts by spreading ugly rumors. Having lost her reputation and her best friend, Jordan is about to find strength she never knew she had.

Hear teen author Cassandra Carter at Malletts Creek Branch 7-8 p.m. Tuesday, March 18. Learn how she got two books published just out of high school. Nicola's will sell books at the event Buyyour own copies and get them autographed.



Featured Events

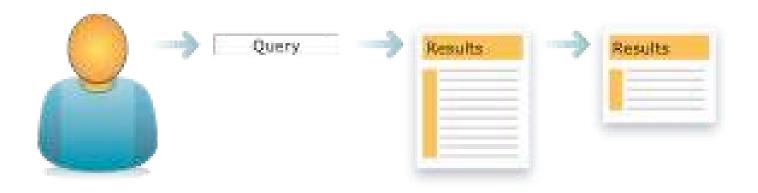
Foreign Babes In Beijing

Former Ann Arborite Rachel
DeWoskin traveled to Beijing in
1994 to work as a PR consultant
and later starred in a Chinese
nighttime soap opera, the
popular Foreign Babes In
Beijing. She returns to Ann
Arbor to discuss her memoir,
Foreign Babes In Beijing:
Behind the Scenes of a New
China — now being made into a

feature film - and her

experiences as a foreigner in

Faceted Navigation



Multiple ways to search (and browse) in combination.

"laptop" > \$910 - \$1070 > Hewlett Packard > At least 1 GB > 14 - 15 Inch > Bluetooth > 4 - 5 lbs



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COMPARE PRICES

Shoes Health Kids See all > Clothing Computers Electronics Gift Cards At Home What are you shopping for? |aptop Search Back to: Home > Computers > Hardware > Laptops > "laptop"

V

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Laptops

Not looking for Laptops? Try Laptop Accessories or Hard Drives, or see all matches for "laptop".

Related Searches: laptops, laptop, notebooks, notebook, laptop computer... more

Sort by: Best match



Price Range

- Below \$710 (906)
- \$710 \$970 (914)
- \$970 \$1240 (890)
- \$1240 \$1700 (922) Above \$1700 (899)
- \$ To Go \$ From

Installed RAM ?

At least 1 GB (5,032).

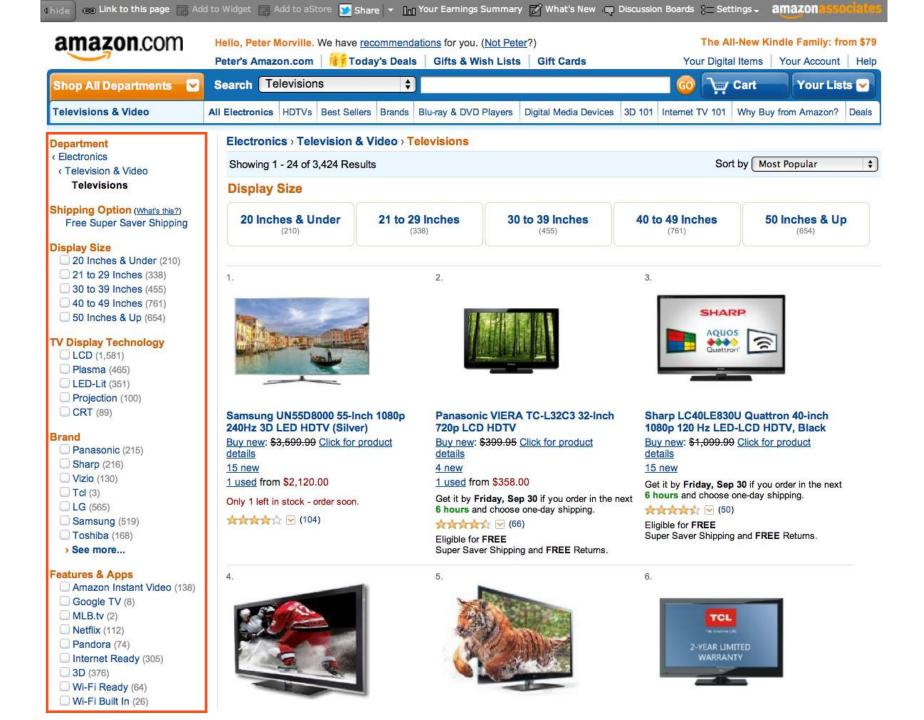


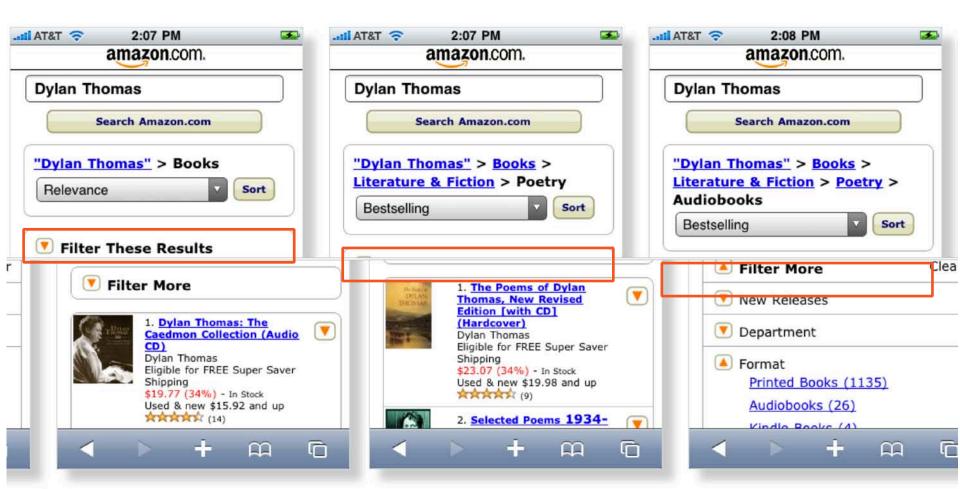
Hewlett Packard Pavilion DV6626US (GS797UA) PC Notebook 🜟 🌟 🌟 🏠 😓 See 3 reviews MPN: GS797UA#ABA, 1 GB RAM, 15.4 in. More Compare

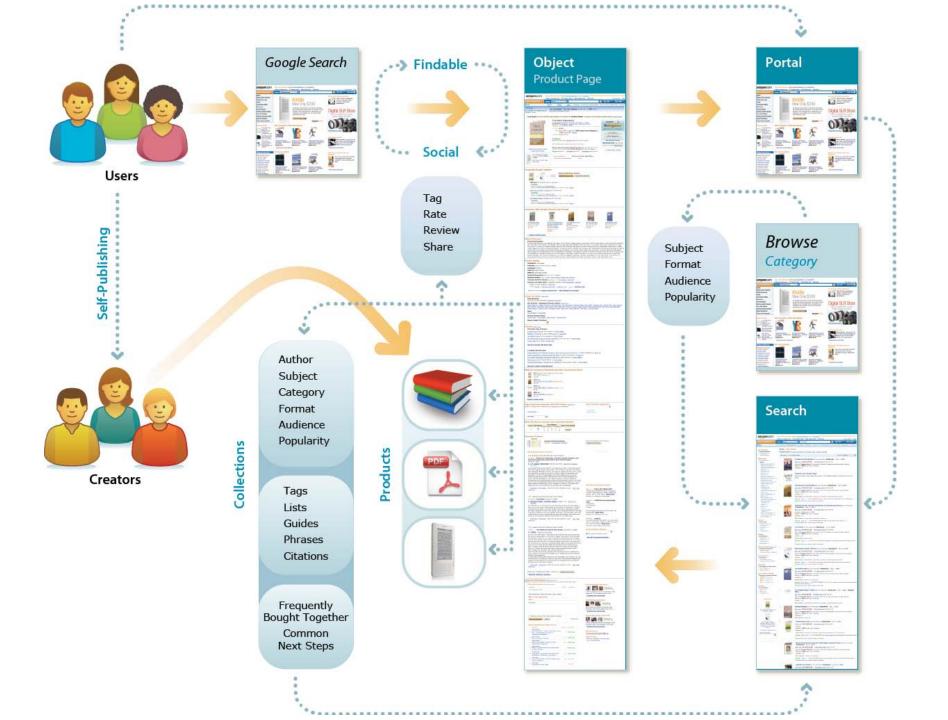


14.1 in. More Compare

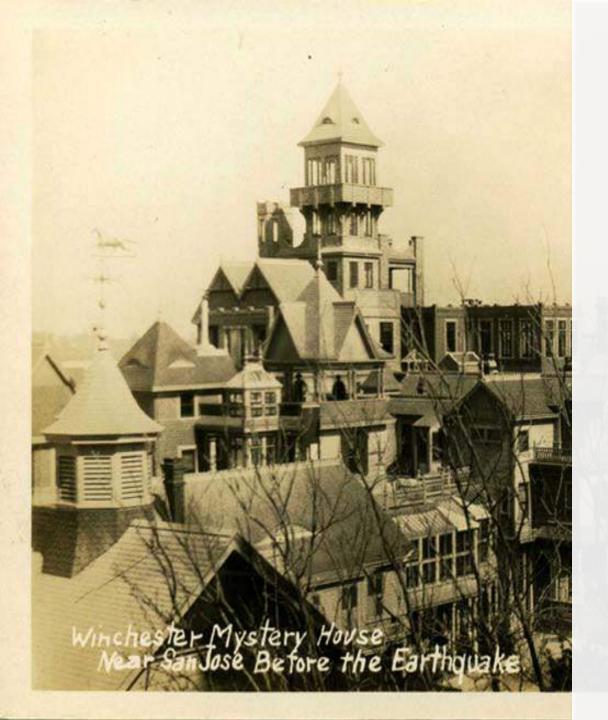
Showing: 30 per page V Lenovo ThinkPad T61 (0883609215033) PC Notebook \$1,291 - \$1,510 from 2 stores COMPARE PRICES > \$650 - \$1,099 from 3 stores. COMPARE PRICES Acer Aspire 3100-1458 (099802113988) PC Notebook \$520 - \$550 from 2 stores









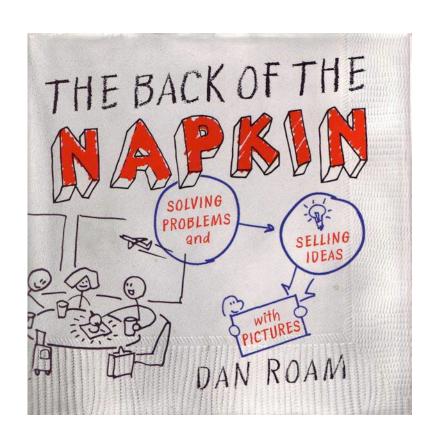


Fragmentation

Fragmentation into multiple sites, domains, and identities is clearly a major problem. Users don't know which site to visit for which purpose.

Findability

Users can't find what they need from the home page, but most users don't come through the front door. They enter via a web search or a deep link, and are confused by what they find. Even worse, most never use the Library, because its resources aren't easily findable.



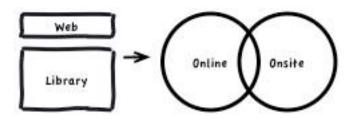
Visual Thinking Unwritten Rule #1

"Whoever best describes a problem is the person most likely to solve the problem.

...or, whoever draws the best picture gets the funding."

Web Strategy

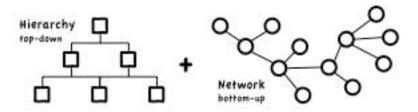
1. One Library



2. Core Areas



3. Network Intelligence





Stories



Personas

Scenarios





Analytics





Process Flows



System Maps



Concept Maps



User Surveys



Storyboards



Concept Designs



Prototypes



Narrative Reports



Design Patterns



Style Guides



Specifications



Plans



User EXperience Treasure Map

by Jeffery Callender and Peter Morville

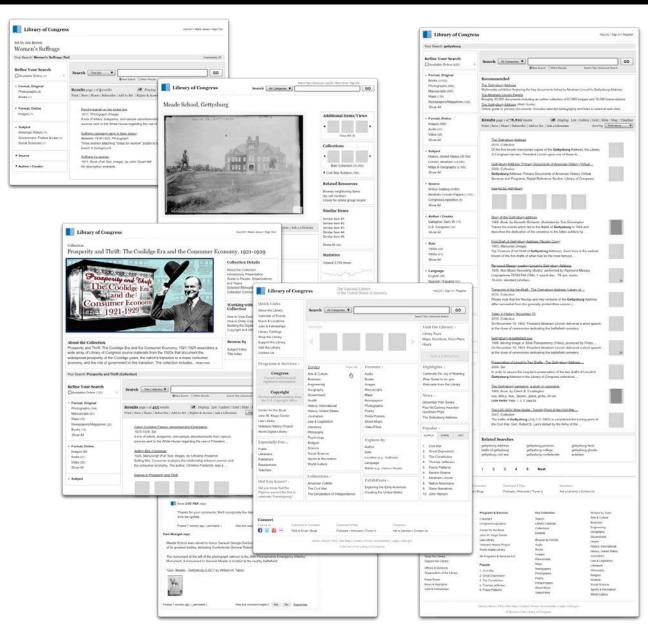
Wireframes

Interfaces

- Portal
- Search
- Object
- Set
- Page

Caveats

- Visual Design
- Starting Point



About the Library



The Library's Mission The History of the Library Awards & Honors Jobs & Fellowships Frequently Asked Questions Support the Library

More About the Library »

News from the Library

Peace Corps Bibliography Celebrating the 50th anniversary

New Comic Art Acquisitions New exhibition opens Sept. 15

Remembering 9/11 "Witness and Response" exhibition

September Film Series American west, urban centers featured

Rolling Down the Home Stretch Gateway to Knowledge travels through northeast

More News & Events »

Visit the Library

Tours Operating Hours Maps & Directions Events: Talks, Films, Concerts Reading Rooms Young Readers Center

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Collection Highlights



American

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Performing

Arts

Film

Prints &

Photographs

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The Book That

Changed the World

Age Lincoln's changes during his term of office Transcript | Download

Dorothea Lange: A Picture of Humanity "Migrant Mother," an icon of the Great Depression Transcript | Download

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Today in History

0



Wise Guide to loc.gov

Thomas.gov U.S. Legislative information from the Library of Congress



Resources & **Programs**

American Folklife Center Preserving & presenting traditional culture

Center for the Book Promoting books, reading & literacy

Copyright Royalty Board Determining statutory royalty rates & distributing royalties

Digital Preservation A national partnership to preserve new media

Kluge Center Enriching the bond between scholars & leaders

Law Library U.S. & foreign legal collection materials

Poetry Home of America's Poet Laureate

Preservation & Conservation Caring for collections

Teaching with Primary Sources Resources for instructors

World Digital Library 2 Global partnership of cultural treasures

WHO WE ARE

WHAT WE DO

HOW WE ARE CHANGING

OUR FUNDING METHODS

OUR GRANTS

ANNUAL REPORT

OUR GREEN HEADQUARTERS

NEWS ROOM

CONTACT US

We are expanding our grantmaking to better address society's pressing issues.

See How We Are Changing and Program Updates for our most current information.

Q Search



News

Poet and Playwright Bill Harris Is Named 2011 Kresge Eminent Artist

Charles McGee and Marcus Belgrave: Two Kresge Eminent Artist Monographs Now Available Online

Physical Activity for Children Must Become National Priority, Says Report from the Convergence Partnership

Improving the Indoor Environmental Quality of Homes Reduces the Asthmarelated Expenses of Residents

More News >

Program Updates

Kresge Is Closed Wednesday, Feb. 2, Due to Snow

Facility Investments and Building Reserves Initiative: Webcast of Preproposal Information Session is Now Live

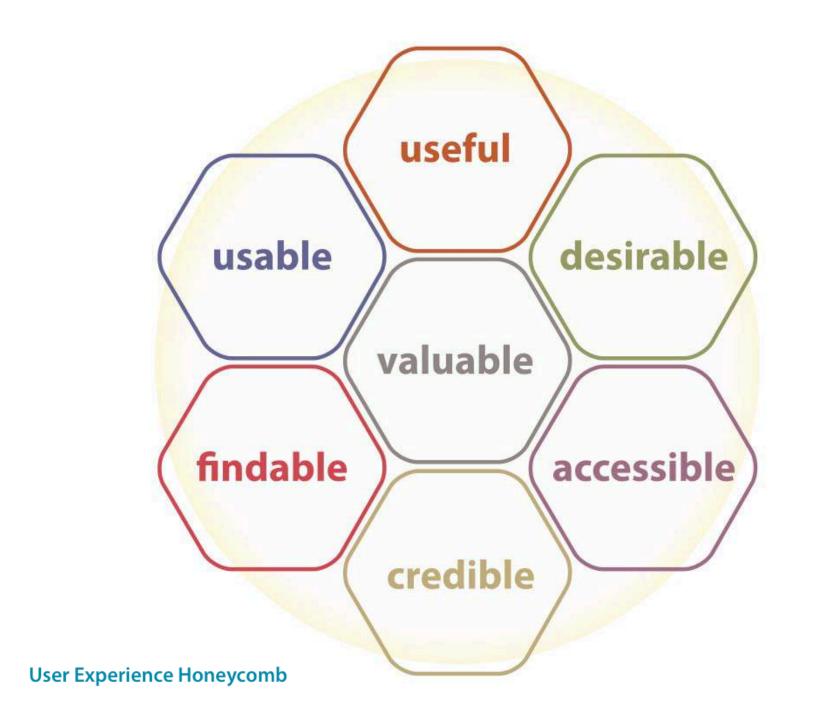
Kresge Foundation Begins Assessment of Its Human Services Program

Call for Applications for the Arts and Culture Program's Facility Investments and Building Reserves Grants

More Program Updates >

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Arts & Culture
Community Development
Detroit
Education
Environment
Health

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THE KRESGE FOUNDATION

Global Philanthropy Partnership Environment Carnegie Foundation for the Advancement of Teaching Education



Detroit Riverfront Conservancy and Detroit Greenway Coalition Detroit Beaufort-Jasper-Hampton Comprehensive Health Services

Q

S.S. Kresge Company The Kresge Foundation



Eastern Market Detroit



Feeding America Human Services



AS220

Recent News

Nonprofits work with Gulf Coast communities to respond to climate change

Opera Company of Philadelphia and Hancock Shaker Village employ business principles and practices to survive and thrive

New website better reflects Kresge Foundation priorities

Detroit Revitalization Fellowship Program puts top-flight talent to work in organizations rebuilding the city

MORE »

Featured News



Welcome to our new website.

Rip Rapson shares his views on the new
Kresge... WATCH VIDEO »

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YouTube

My Saved App

Access My Saved Application =

If you've already started an application, you can log in here...go to MY SAVED APPLICATION »



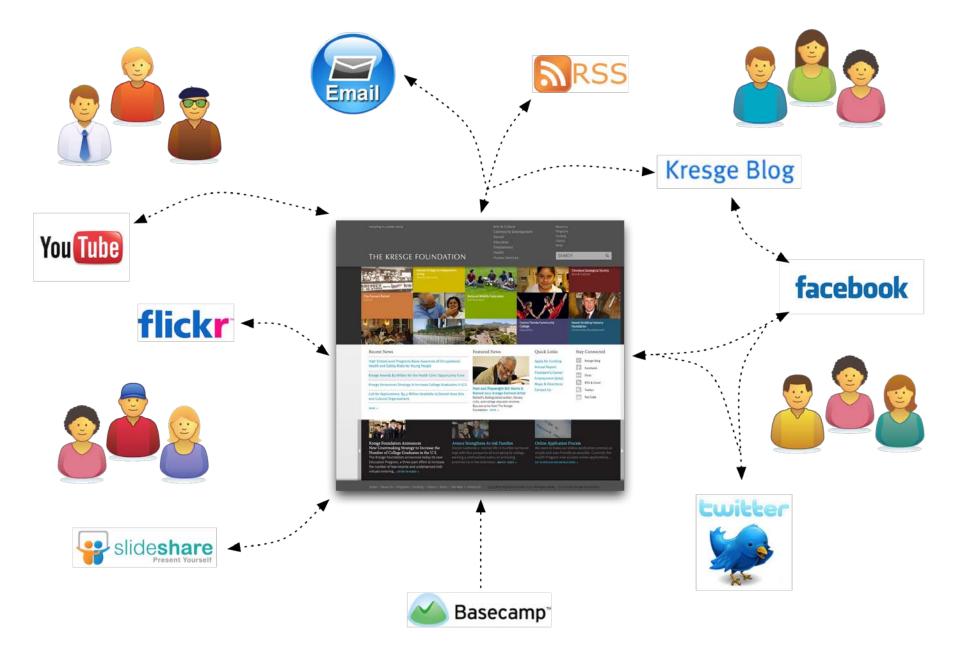
About Us

In 1924, with an initial gift of \$1.6 million,
Sebastian Spering Kresge established The Kresge
Foundation in Detroit. Twelve years earlier, he and
his partner, John G. McCrory, opened the first fiveand-10-cent store...



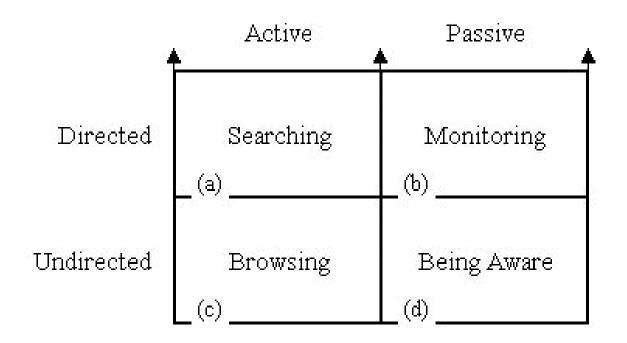
Planning for climate change

A survey finds communities in the Northeast are trying to plan for changes in climate, but need help...READ NEWS STORY »



Modes of Information Seeking

Marcia Bates, UCLA (2002)

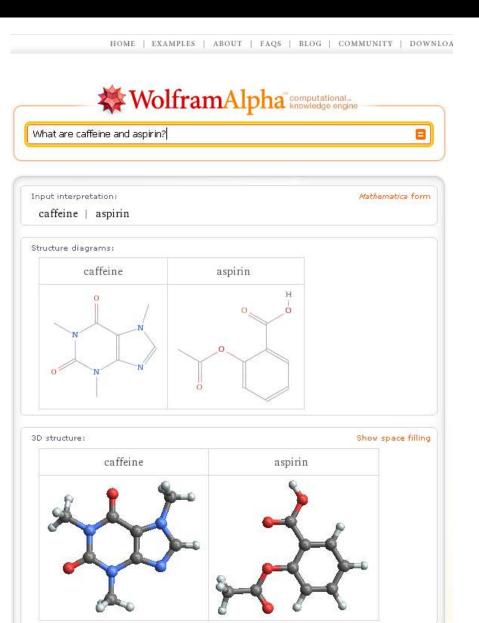


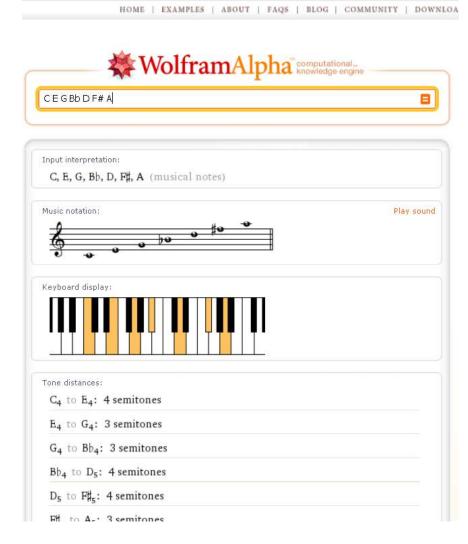
"We absorb perhaps **80 percent** of all our knowledge through simply **being aware** in our social context and physical environment."

Redefining Search

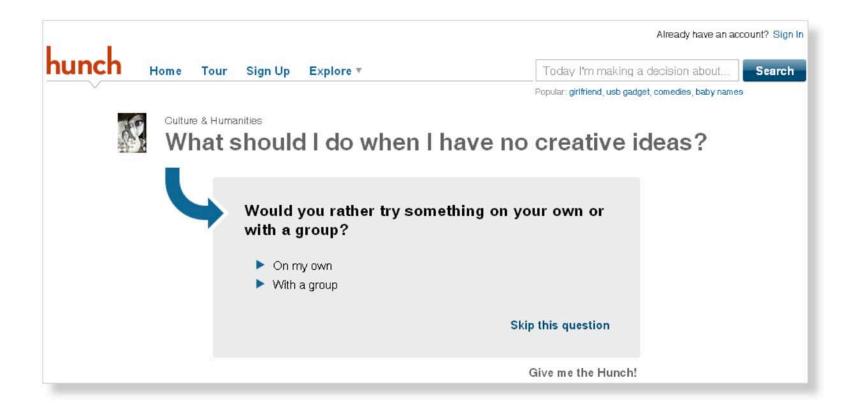


Question Answering

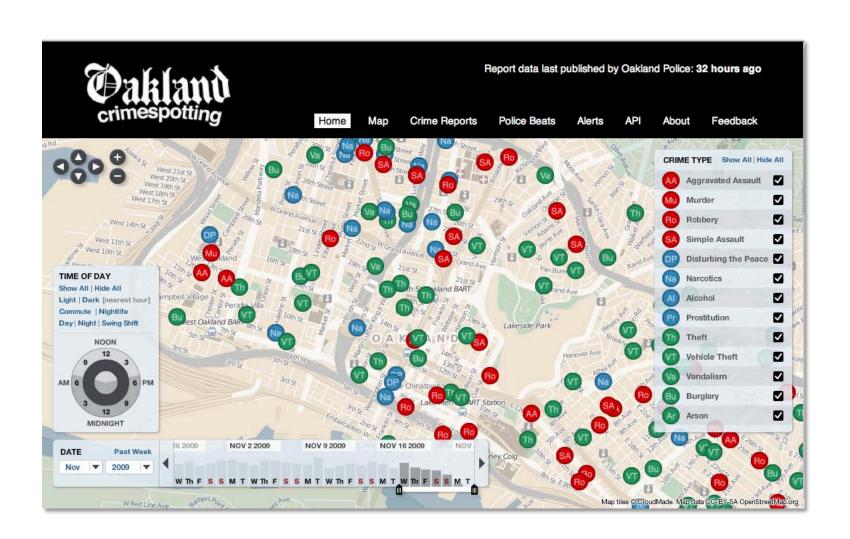




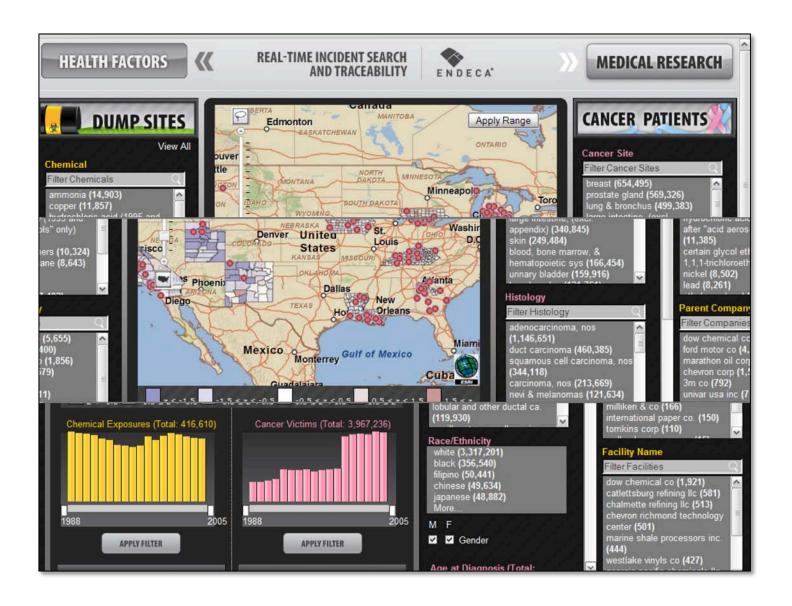
Decision Making



Understanding



Pattern Recognition



What We Search

Web Images Videos Maps News Shopping Gmail more ▼

morville.peter@gmail.com | My library | Web History | My Account | Sign out



Search Books Advanced Book Search

Books

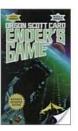
Books 1 - 30 of 771 on subject: "Science Fiction". (0.09 seconds)

List view

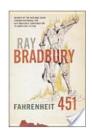
> Cover view

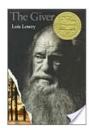
All books

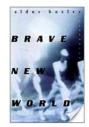
> Limited preview and full view Full view only Public domain only









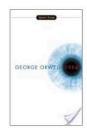










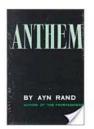










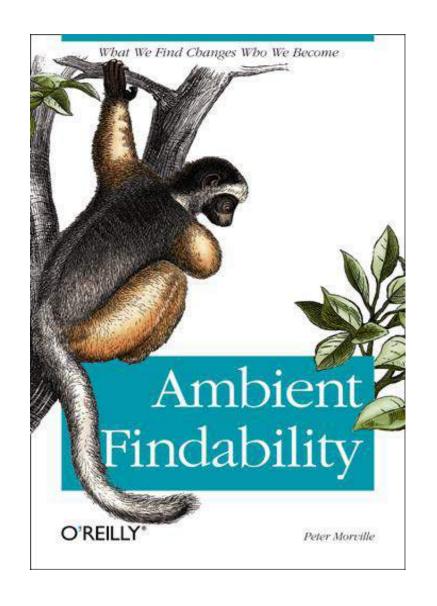


How We Search









find-a-bil-i-ty n

The quality of being locatable or navigable.

The degree to which an object is easy to discover or locate.

The degree to which a system or environment supports wayfinding, navigation, and retrieval.

am-bi-ent adj

Surrounding; encircling; enveloping (e.g., ambient air)

the ability to find anyone or anything from anywhere at anytime





뿔 WIKIPEDIA

WIKIPEDIA

Hofburg Imperial Palace
Wikipedia founder Jimmy
Wales's personal appeal for
donations on the project's
fifth anniversary



型 WIKIPEDIA TIT UT anniversary



Hofburg Neue Burg section, seen from Heldenplatz. In front the statue of Prince Eugene of Savoy.

Hofburg Imperial Palace is

型 WIKIPEDIA Tildricipalities; v

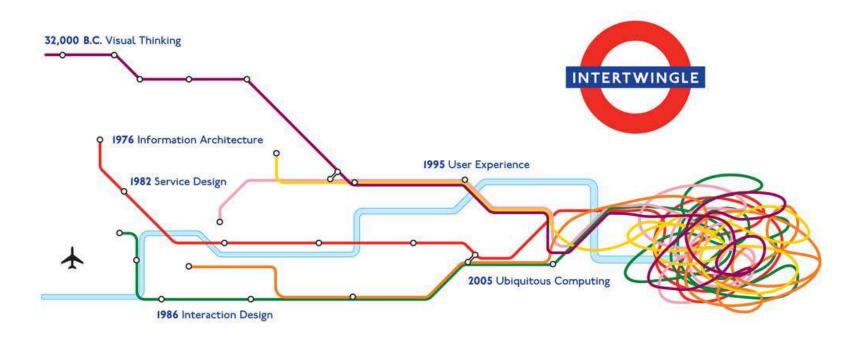


Vienna (<u>German</u>: *Wien* [vi□n]; <u>Slovenian</u>: *Dunaj*, <u>Hungarian</u>:

컐 WIKIPEDIA

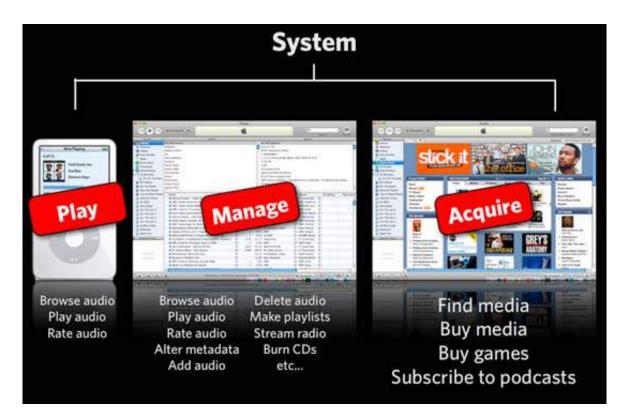
Vienna (German: Wien [viDn];
Slovenian: Dunaj, Hungarian:
Bécs, Czech: Videň, Slovak:
Viedeň, Romany Vidnya;
Croatian and Serbian: Beč) is
the capital of Austria, and also
one of Austria's nine states (
Land Wien). With a population
of about 1.6 million, Vienna is
the largest city and the cultural
and nolitical centre of Austria.

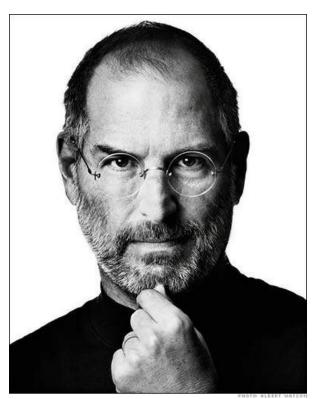
"Information is blurring the lines between products and services to create multi-channel, cross-platform, trans-media, physico-digital user experiences." Peter Morville



"People keep pretending they can make things deeply hierarchical, categorizable, and sequential when they can't. Everything is deeply intertwingled." Ted Nelson

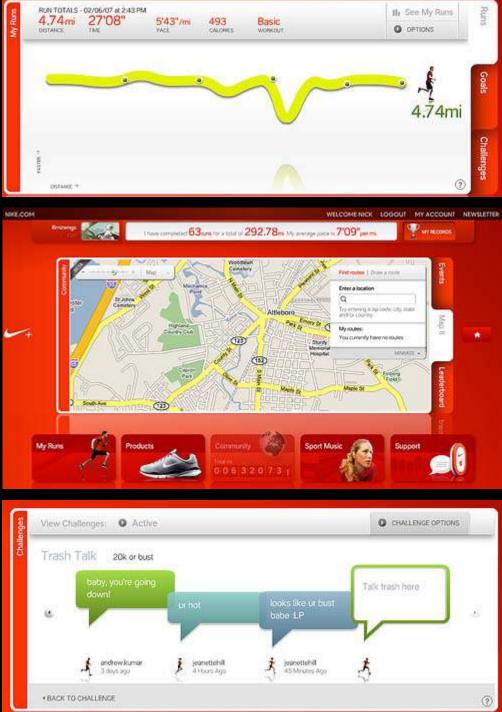
World's Best Information Architect





Source: Subject to Change (2008)





for everybody

for business

for universities

where can I drive?

join!

is zipcar for me?

how it works

find cars

rates & plans



ready to hop on board?

join zipcar



car rental is so last century

Zipcar is the smarter alternative to car rental or ownership. You get wheels when you want them and pay as you go (literally).

more *



touch and go.

Zipcar for the iPhone.

get the app free >

learn about the simple steps to zipcar freedom









Mazda 3 Mazel

4. drive

we're all a-twitter

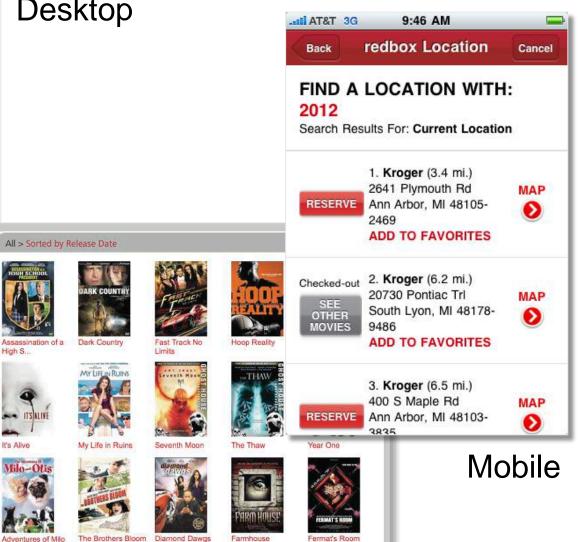
follow us @Zipcar >

1. join 2, reserve

3. unlock







Kiosk



A TO Z

HIT MOVIES

STEP 2

TOUCH YOUR MOVIE

SELECTION

HELP

Adventures of Milo and Ot...

> **START OVER**

VIEW CART

GO **BACK**

MORE TITLES

Functions

Fitness and health

Services

Support

Purchase

The WiFi Body Scale



Your weight charts in your pocket.

Introduction in video





On your iPhone, Android



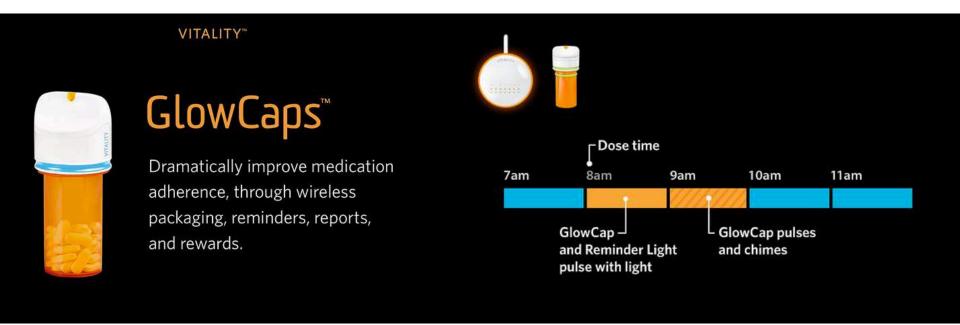
iPad, iPad2



And your computer



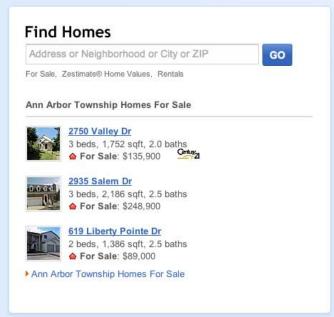




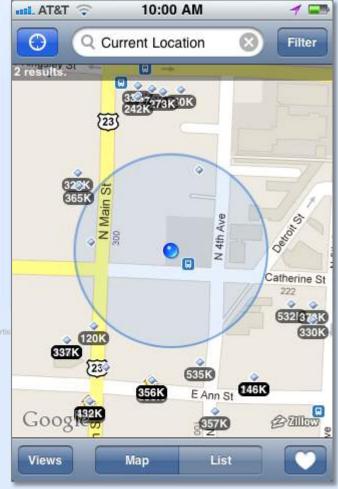
"After a half-hour, a three-tone alert sounds...If the bottle still has not been opened, the system makes an automated reminder phone call to the patient or a caregiver. The GlowCap system compiles adherence data which anyone can be authorized to track. That way the doctor can make sure Gramps stays on his meds."



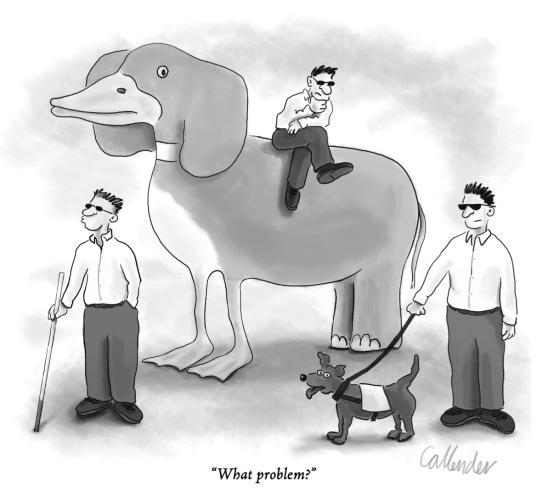
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Search is a Wicked Problem



- Hybrid between design, engineering, and marketing.
- No definitive formulation.
- Considerable uncertainty.
- Complex interdependencies.
- Incomplete, contradictory, and changing requirements.
- Stakeholders have radically different world views.
- It's a project and a process.
- The problem is never solved.



Product Packaging Print Catalog Call Center Website Blog **Facebook Twitter** YouTube **Email Direct Mail** Radio **Television**





Touchpoint Taxonomy

Channel

Web Social Media Email Messaging Telephone Print



Platform

Web
iOS
Android
Mac OS X
MS Windows





Device Desktop Laptop Mobile Tablet Television

Kiosk



Scale

Covert
Mobile
Personal
Environmental
Architectural
Urban



Context

Home
Work
Walking
Driving
Shopping
Plane
Party
Personal

Social

Time

Task

Location







reFraming

- 1. Classic Information Architecture (Polar Bear).
- 2. Web Strategy (Web, Mobile, Social).
- 3. Cross-Channel Strategy (Physical, Digital).
- 4. Intertwingularity (*Ubiquitous, Ambient*).





There has never been a better time to be an information architect. #excited

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User experience 2011

Thank you Спасибо за внимание

Peter Morville

Semantic Studios

http://semanticstudios.com/