

# Designing for Experience Frameworks and Project Stories



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These slides are from a talk presented by Marc Rettig of Fit Associates and Aradhana Goel of MAYA Design, at Adaptive Path's User Experience Week 2005 in Washington, D.C.

This PDF contains two sets of slides combined into one, in the order in which they were presented in D.C. The slides with the colored bars at top and bottom are from Marc. The slides with the black bars at top and bottom are from Aradhana.

Questions and comments?

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# PART ONE

pages 4 - 16 Designing for experience

17 - 86 Example: Carnegie Library

# PART TWO

88 - 125 More tools and stories

A photograph of a field of tall green grass with brown seed heads, set against a bright blue sky with a single white cloud. The text "What is Design?" is overlaid on the right side of the image.

What is Design?

Why this tea kettle?



Many forces shape its design



Different situations, different people,...



...different kettles



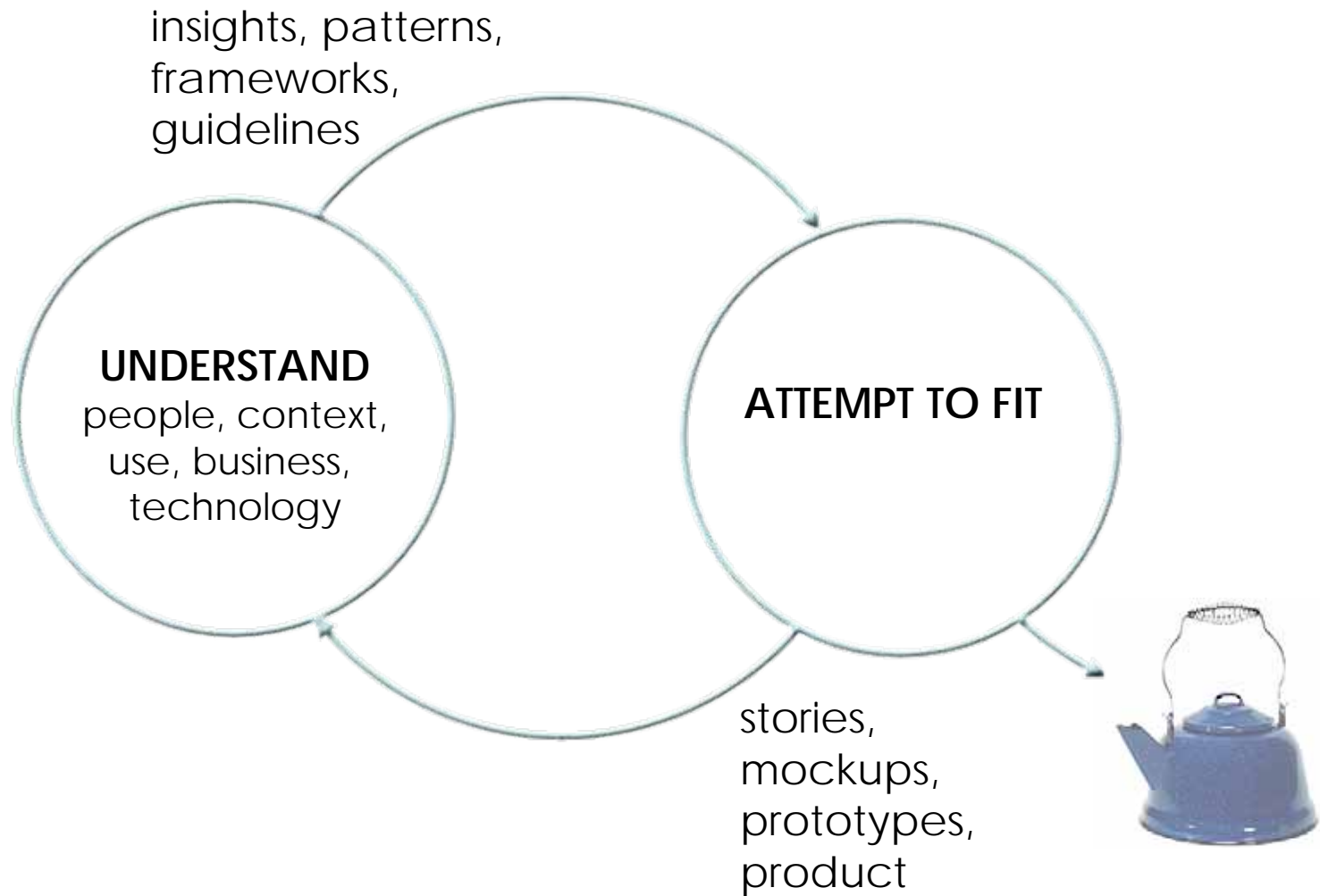
# Design is a way to create things that fit a particular set of forces

To accomplish our work, we must first understand the forces as best we can, then begin attempts to make something that fits the shape they suggest. A good process helps teams manage this difficult work: refine understanding, attempt to fit within their pressures.

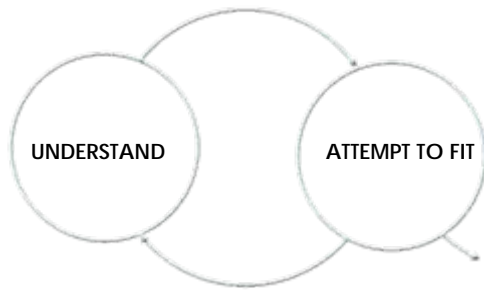




# The Design Process in a nutshell



That's just about all you need



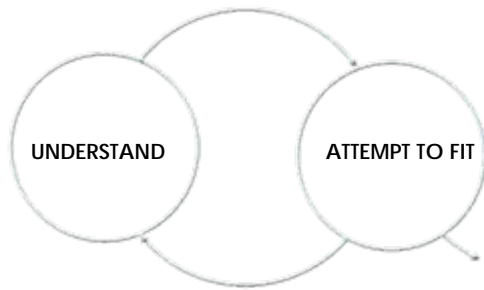
After that, it all depends on:

**the size of the bag of tools** you have to bring to bear on each bubble

**your wisdom in choosing the right tool** for the job at hand

**your success at facilitating** a group of people through the process, and nurturing a culture of design for experience

# Did I really mean that last point?



I'm sometimes accused of being too loose, too abstract, unable to articulate a scaleable, enterprise-worthy process.

I do of course work with fine-grained steps in a project plan.

But I believe a lot of the effort spent teaching and cajoling teams to follow a process would be more productively put into:

- a) giving them practice at the two-bubble process in lots of situations
- b) helping people expand their bag of tools and methods
- c) helping teams become great at facilitating collaborative work

A photograph of a field of tall green grass with brown seed heads, set against a bright blue sky with a single white cloud. The text "Designing for experience" is overlaid on the right side of the image.

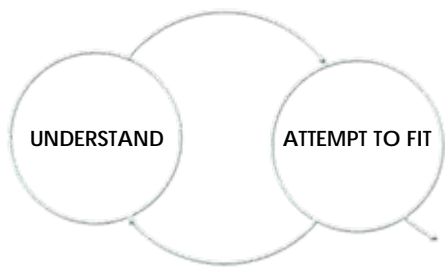
Designing for experience

You have one minute...  
Design a vase.

You have one minute...  
Design a way  
for people to  
enjoy flowers  
in their home.

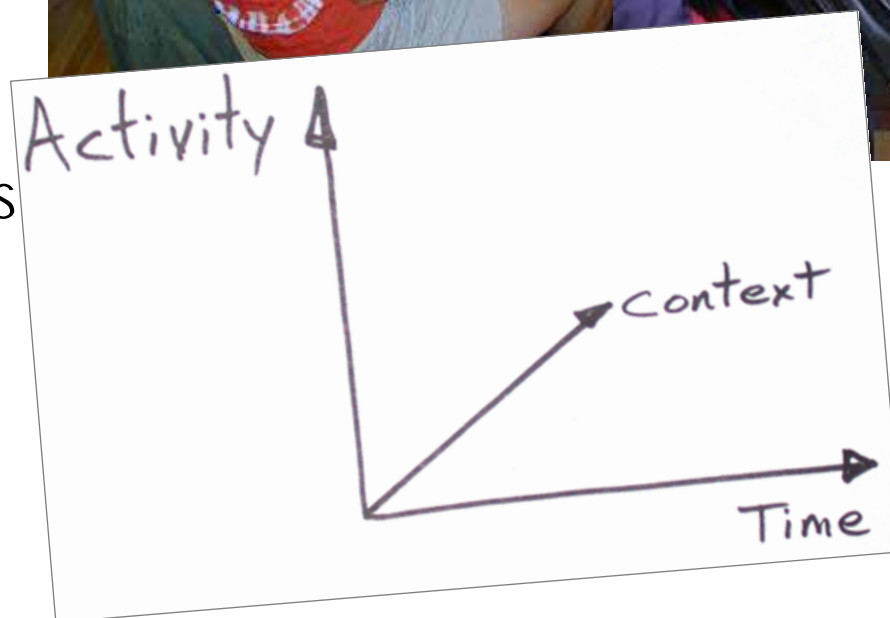
Designing for experience makes you change the questions

Experience design, or “design for experience” is a name for **enlarging scope** to consider patterns of life, goals, activity, context, repeated use, learning, sharing, emotion, and more... **while applying**  
**The Design Process.**



# Design for people doing activities in context

To do a good job of this, we have to understand as much as we can about the context, the activity, what else is going on, where people's attention is focused, what happens before and after, what their goals are, and more.







**M·V·A·Y·A**

Example

# Carnegie Library of Pittsburgh

A public service,  
the building that houses it,  
the systems that enable it,  
the people that deliver it

# Meet Aradhana

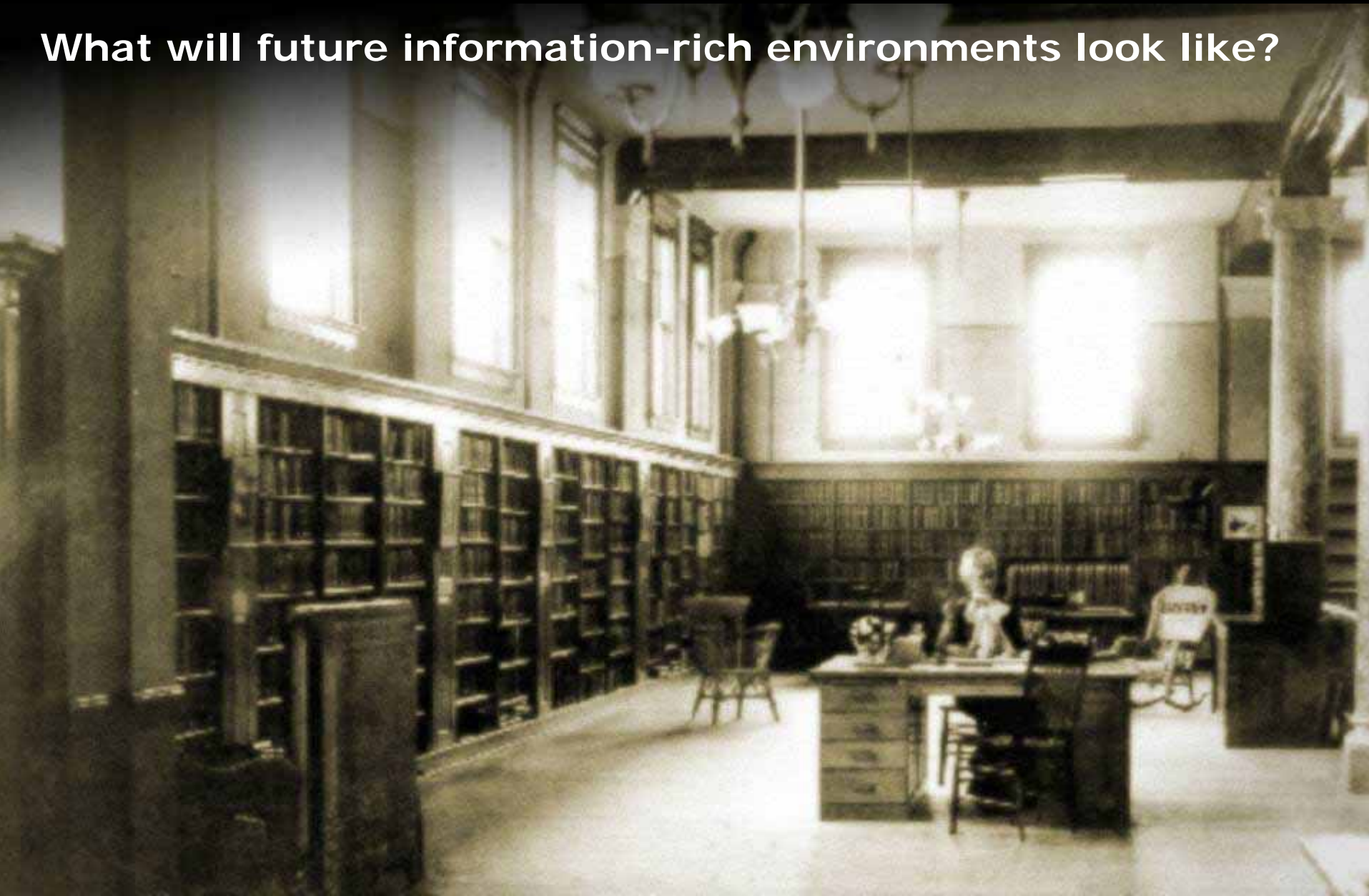
Aradhana Goel

**MAYA**

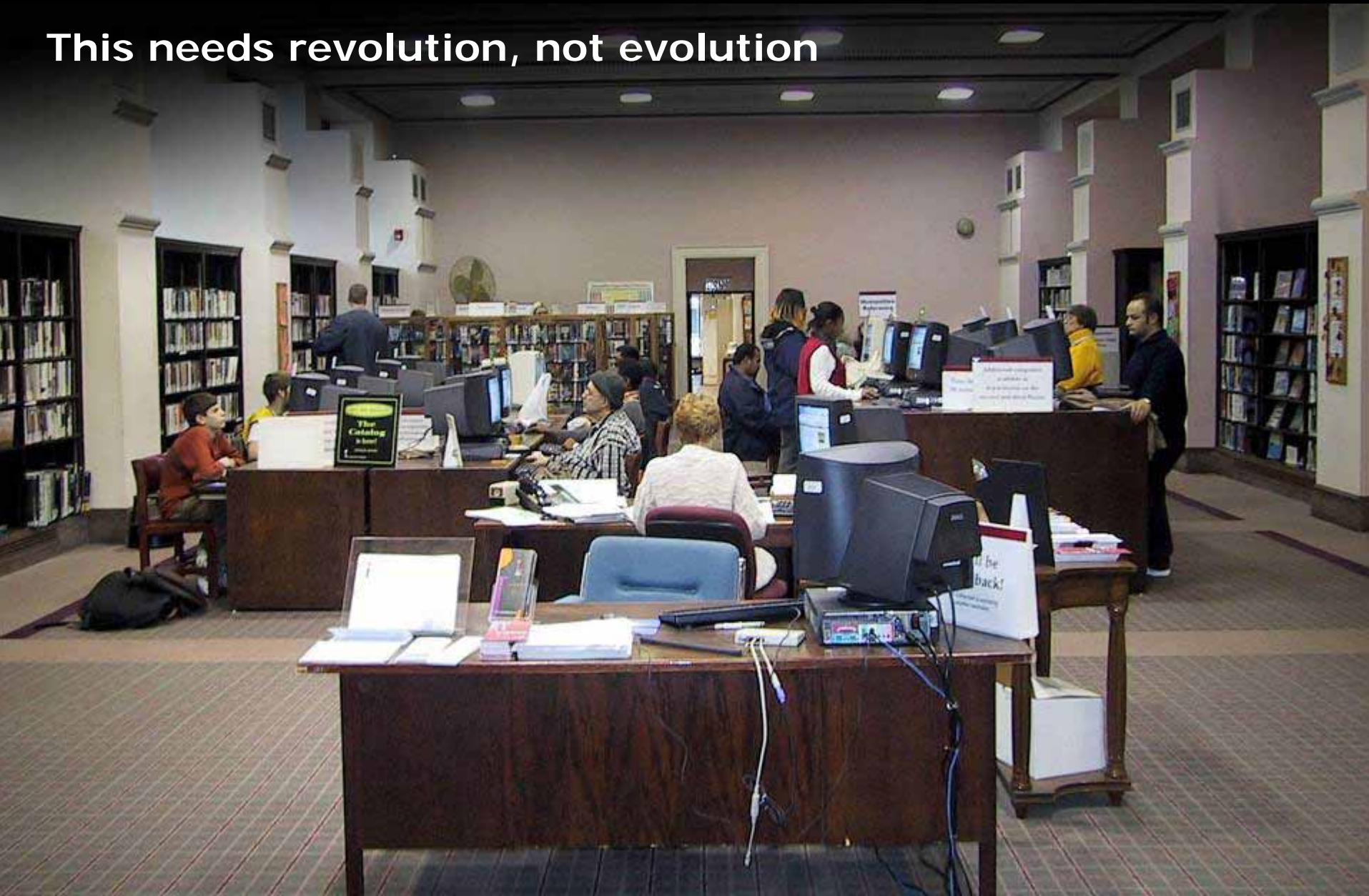
[www.maya.com](http://www.maya.com)

[goel@maya.com](mailto:goel@maya.com)

# What will future information-rich environments look like?



# This needs revolution, not evolution

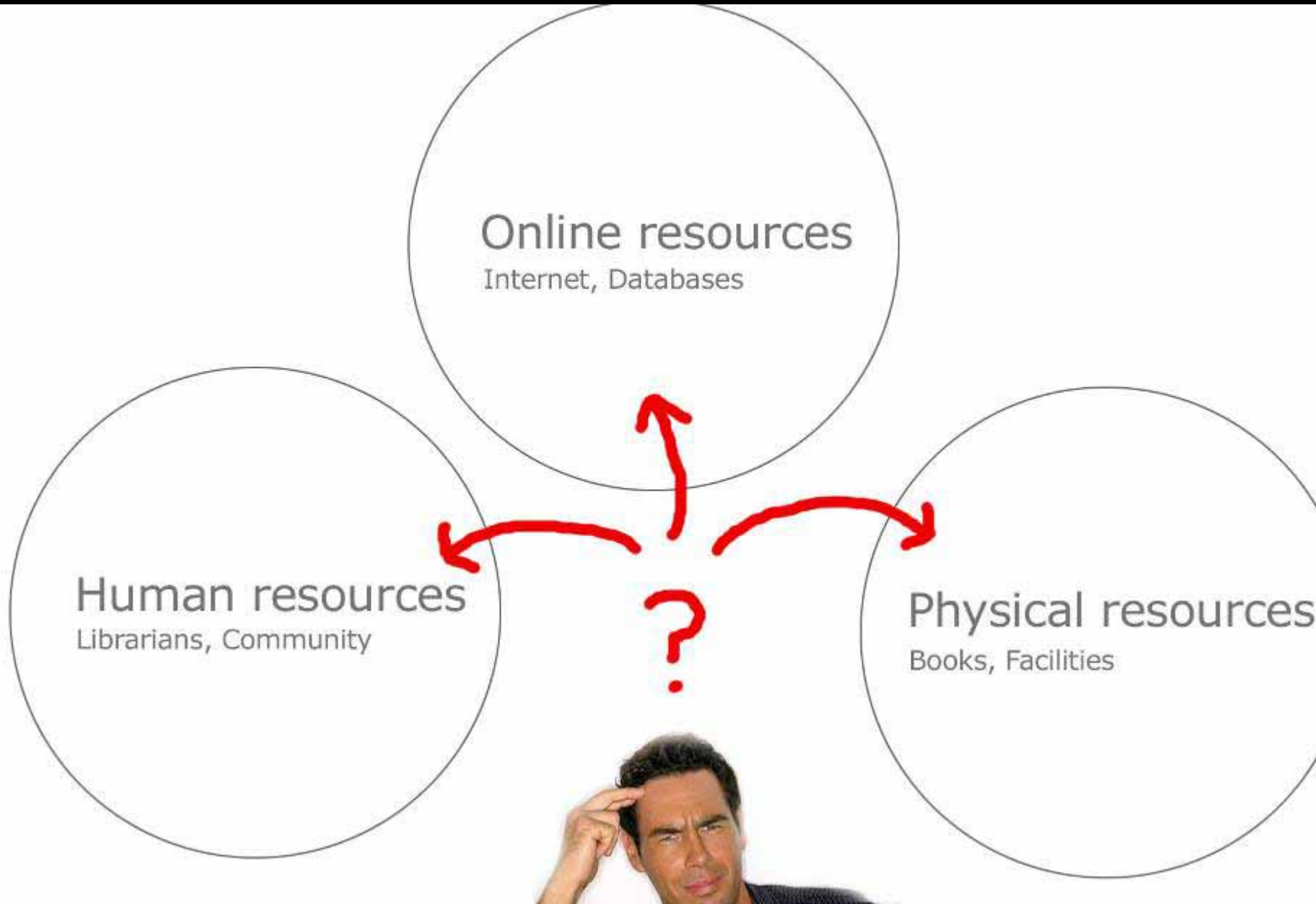




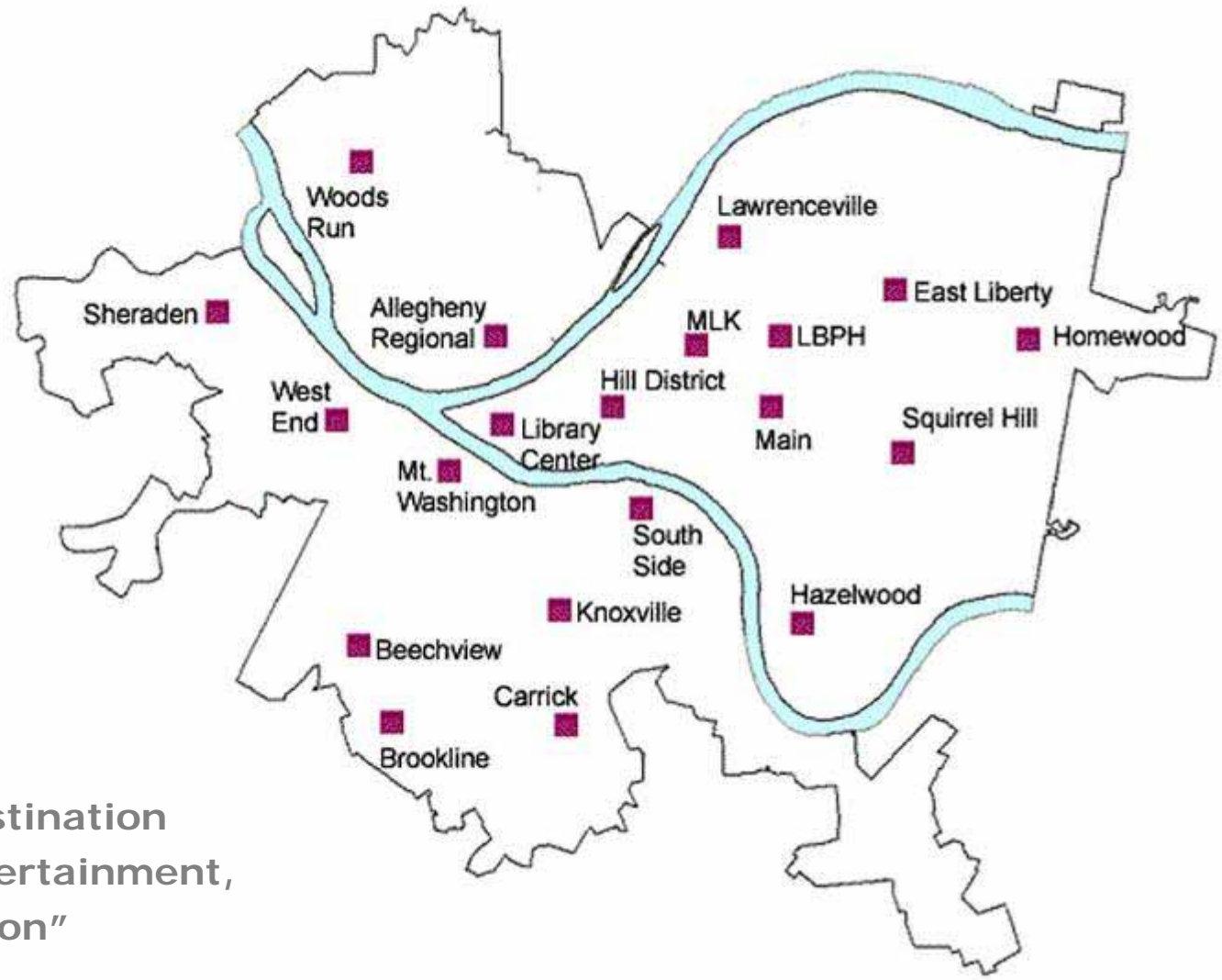
**Online resources**  
Internet, Databases

**Human resources**  
Librarians, Community

**Physical resources**  
Books, Facilities

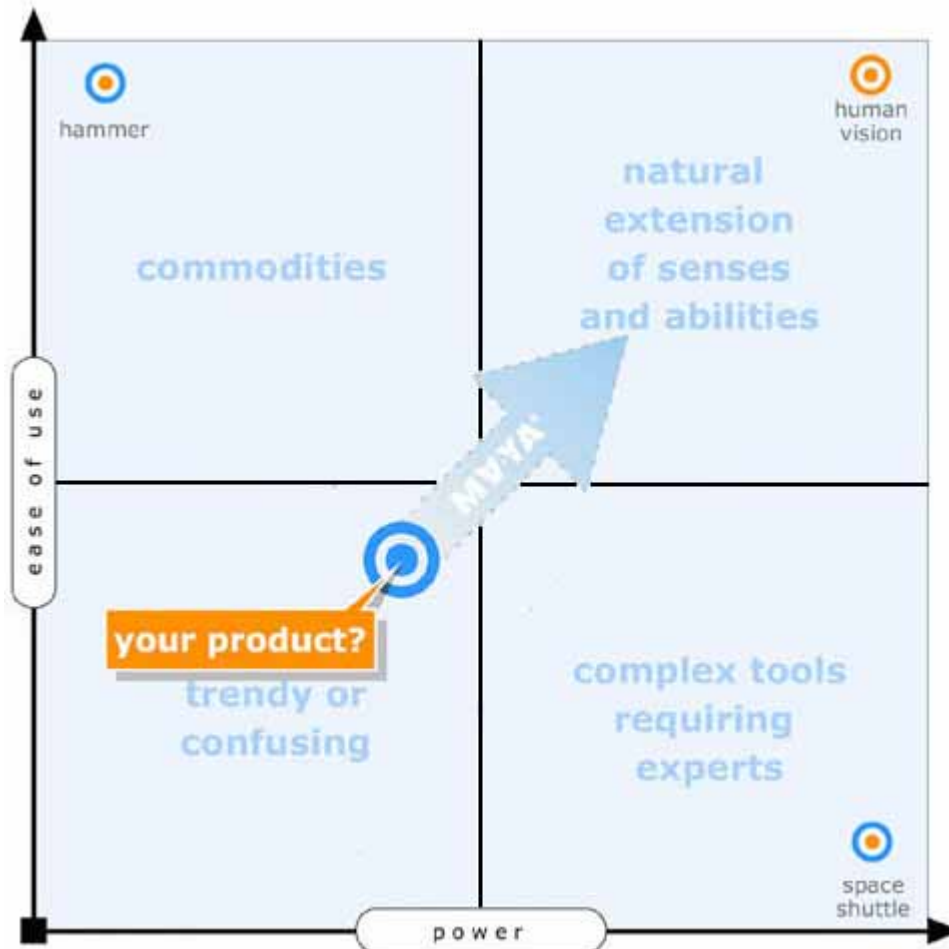


## Carnegie Library's goal



“... a preferred destination for knowledge, entertainment, and social interaction”

# Tame complexity, don't eliminate it





# Research

# Exploring, Shadowing, Documenting



BASIC WAYFINDING QUERY

"Where are the restrooms?"

TARGETED WAYFINDING QUERY

"Where can I find this book?"

BASIC QUERY

"Do you have a map of Pittsburgh?"

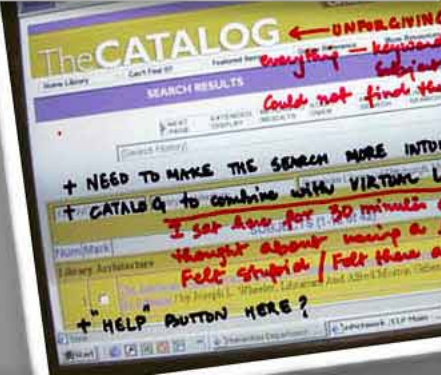
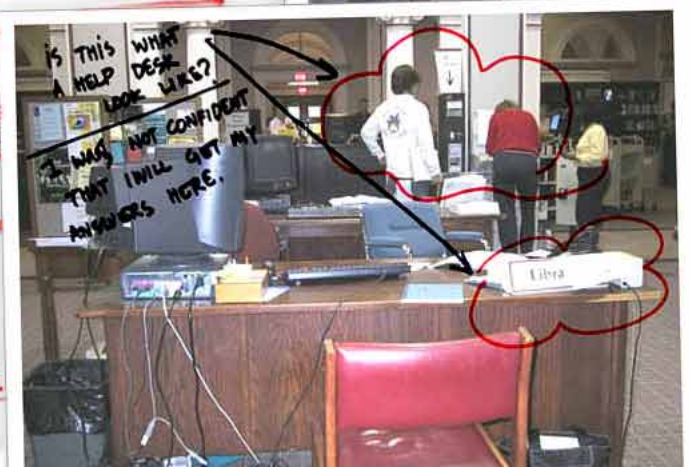
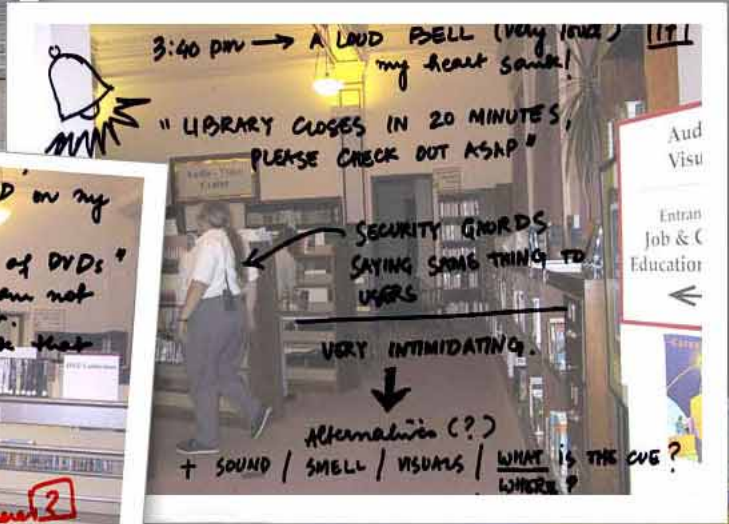
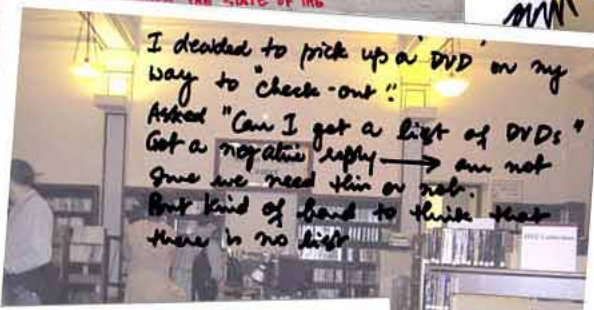
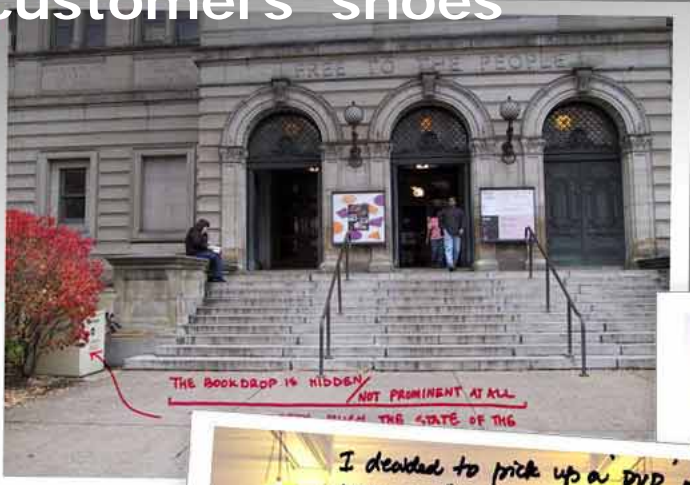
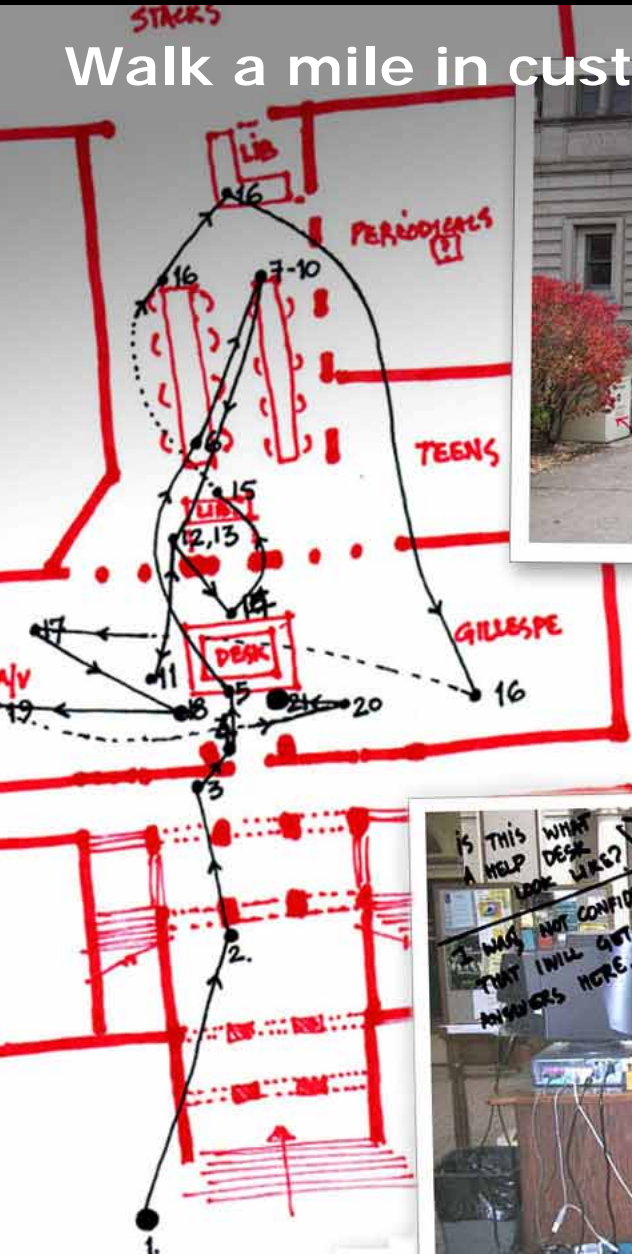
SUBSTANTIVE QUERY

"What's a good source for literary criticism about *Oliver Twist*?"





# Walk a mile in customers' shoes



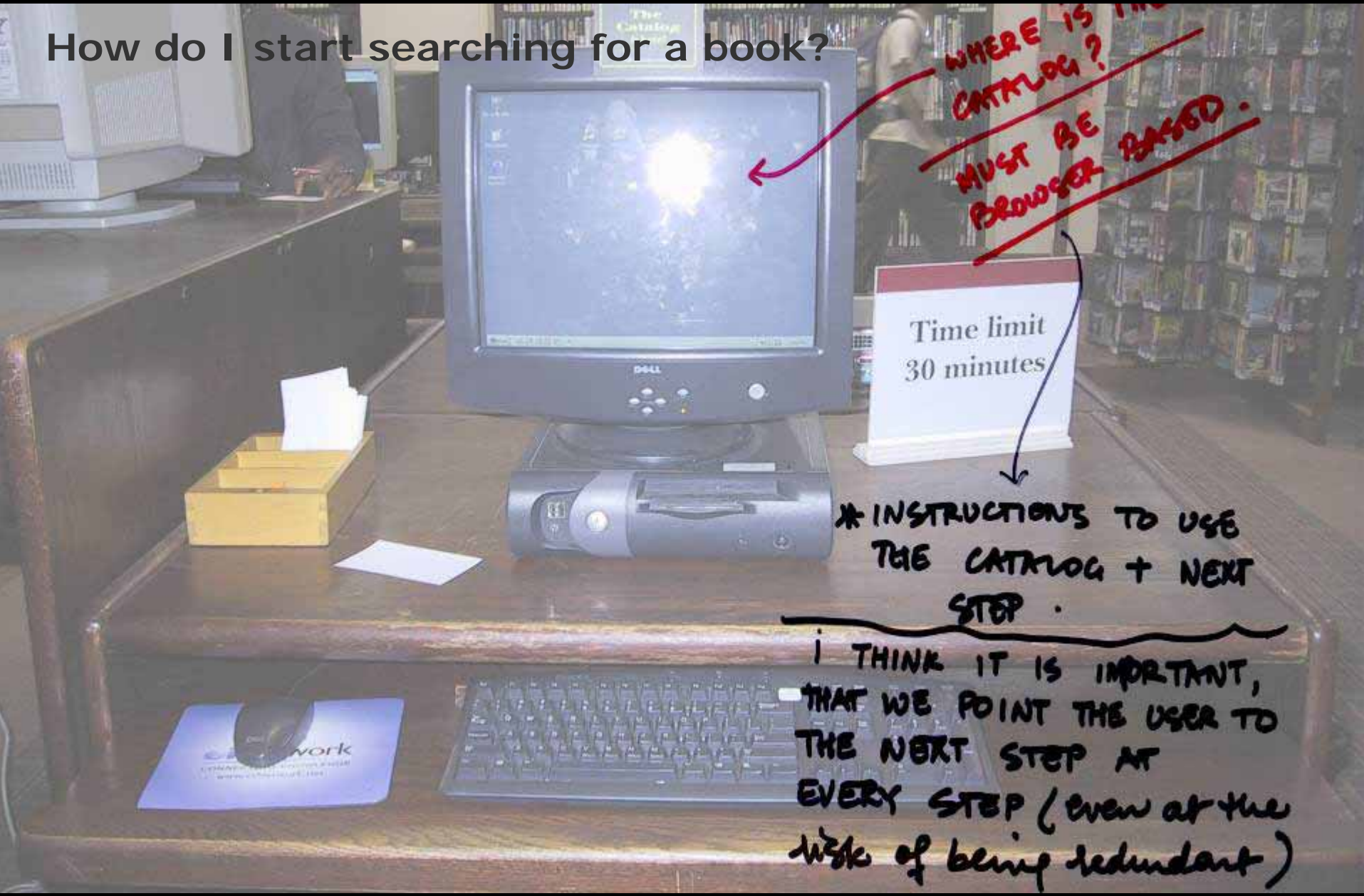
# Is the library open or closed?



THE BOOK DROP IS HIDDEN / NOT PROMINENT AT ALL

THIS IS PRETTY MUCH THE STATE OF THE LIBRARY. EVERYTHING WAS A MYSTERY AT FIRST AND IT BEGINS TO MAKE SENCE AFTER ABOUT 1 HR.

# How do I start searching for a book?



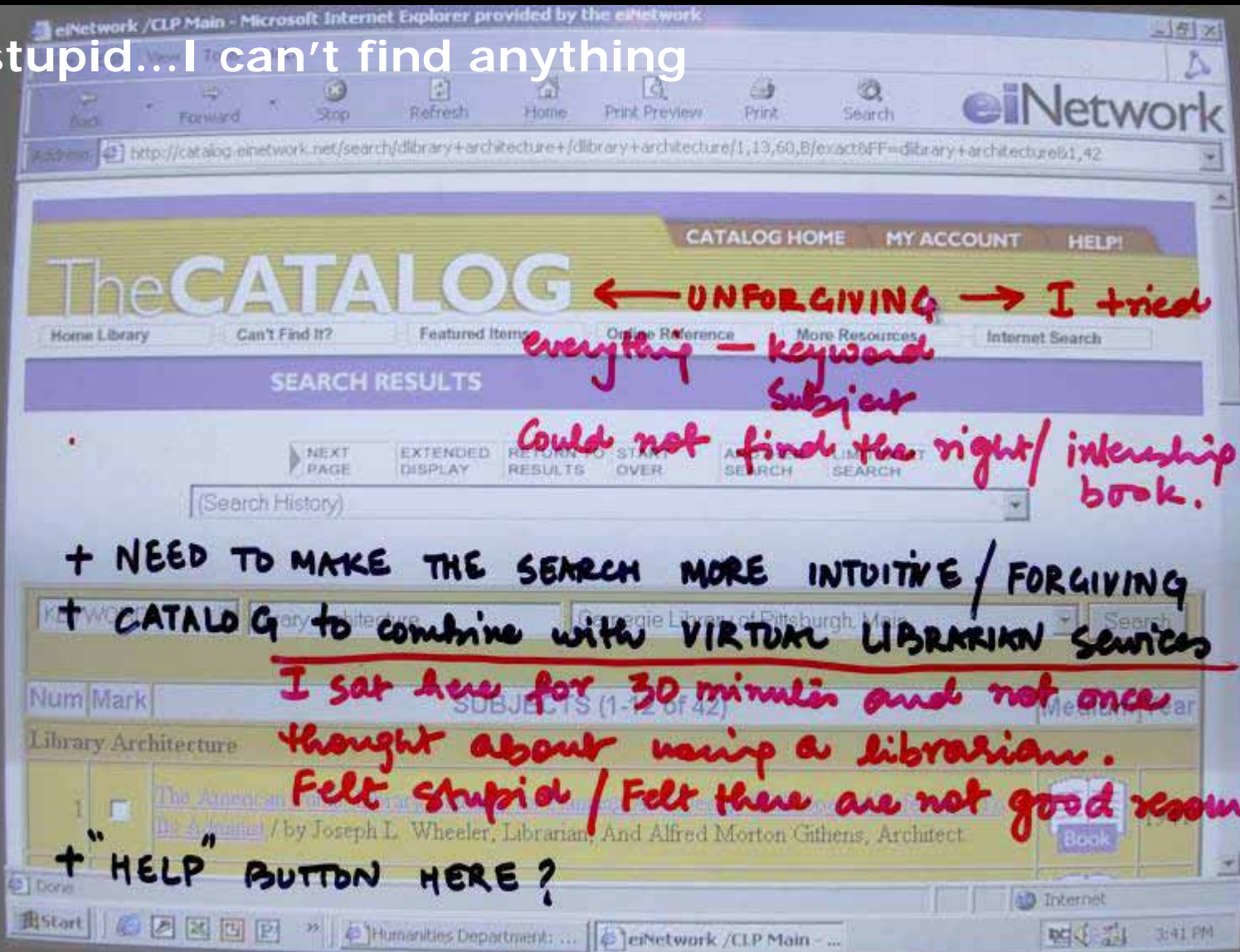
WHERE IS THE CATALOG?  
MUST BE BROWSER BASED.

Time limit  
30 minutes

\* INSTRUCTIONS TO USE THE CATALOG + NEXT STEP.

I THINK IT IS IMPORTANT, THAT WE POINT THE USER TO THE NEXT STEP AT EVERY STEP (even at the risk of being redundant)

I am stupid...I can't find anything



# What do these things mean?

**what am I supposed to do if it is not available?**

**\* TELL THE USER THE NEXT STEP. talk to librarian and reserve it... or Reserve it here**

**Here is a book I like....**

**+ SHOULD I NEED TO WRITE INFO ON PAPER LIKE THIS? IS THERE A BETTER WAY TO CAPTURE WHAT I AM INTERESTED IN?**

**+ WHY CAN'T THE LOCATION BE GEO-REFERENCED?**

**WHAT IS THIS?**

**WHERE IS THIS?**

**+ CAN I SWIPE MY LIB. CARD THROUGH SOME READER AND GET THIS INFO -> THEN IT SOMEHOW LEADS ME TO THE RIGHT STACK?**

**eiNetwork**

Address: y+architecture+&m=a&i=eng&b=8Da=2000&Db=8p=8&SORT=D&searchscope=1/1,3,3,8/frameset&FF=librar...

NEXT RECORD RETURN TO RESULTS ANOTHER SEARCH MODIFY SEARCH START OVER

(Search History)

KEYWORD  All Libraries

Limited to: Material Type "PRINTED MATL" and Language "English and Y...

Author: Lushington, Nolan, 1929-  
 Title: Libraries designed for users : a 21st century guide / Nolan Lushington  
 Publisher: New York: Neal-Schuman, c2002.  
 Description: xvi, 247 p. : ill. ; 28 cm.

LOCATION	
District Services (CLP)	General Shelves

Includes bibliography

Subject: Library architecture

1555704190

Start | Internet Explorer | Humanities Department: ... | eiNetwork / All Librarie... | 3:41 PM



IS THIS WHAT  
A HELP DESK  
LOOK LIKE?  
I WAS NOT CONFIDENT  
THAT I WILL GET MY  
ANSWERS HERE.



Is this the right place to ask? question?

LIBRARIAN HELPED ME WITH :

+ TOLD ME 'LIBRARY CENTER' was downtown Branch  
+ 'DISTRICT SERVICES' is material on Reserve

13

So all my books need to be reserved and I will  
be sent a notification by mail → to come & pick up

~~this took~~

~~20 MINUTES~~

~~[ BUSY WITH HELPING SOMEONE WITH PHOTOCOPY  
CATALOG WAS NOT FORGIVING + COULD NOT UNDERSTAND~~

ALL THIS INFO  
COULD  
HAVE  
BEEN ON  
THE  
CATALOG  
INTERFACES

+ I need a card to reserve → points me  
to the place where I can get cards made.  
MY HANDWRITING.

+ Please get the card → I will reserve for you.

Why did I repeat my steps...

This was quick!

I GOT THE LIBRARY CARD  
VERY SIMPLE

# Library Card Registration

The Carnegie Library of  
Pittsburgh is free to the  
citizens of Pittsburgh and  
Allegheny County.

Please show proof of residence when  
registering for your library card.

This is a **pure waste of time!**

→ I GET THE CARD → WE PERFORM SEARCH ALL OVER AGAIN - (10 MIN)

RESERVE MATERIAL FOR ME

By the way, I am supposed to be able to do this myself.

NOTE: IT TOOK HER 25 MINUTES TO GET MY NAME RIGHT TO BE ABLE TO RESERVE  
name feild wrong

Can I save my search?



3:45 PM → A LOUD BELL (very loud) my heart sank!

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" LIBRARY CLOSES IN 20 MINUTES, PLEASE CHECK OUT ASAP "



SECURITY GUARDS SAYING SAME THING TO USERS

VERY INTIMIDATING.

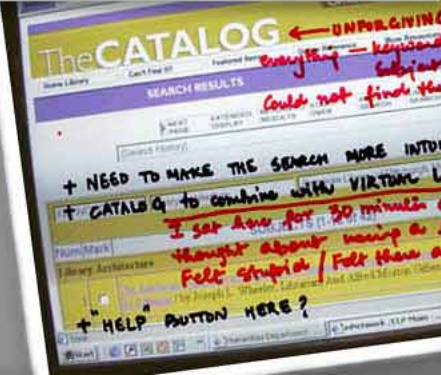
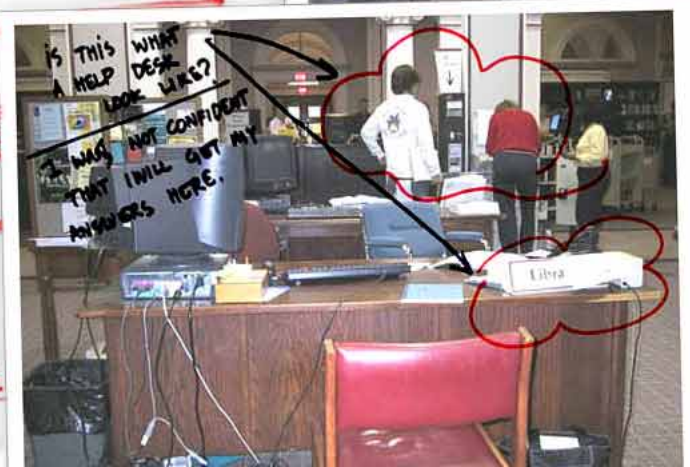
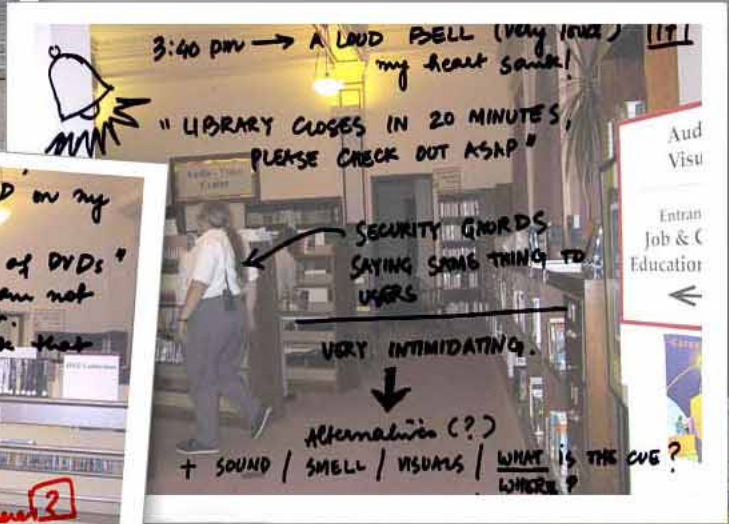
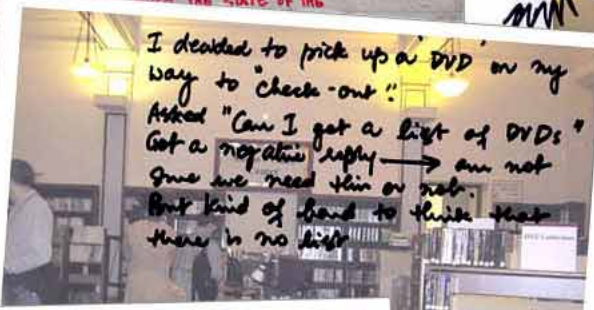
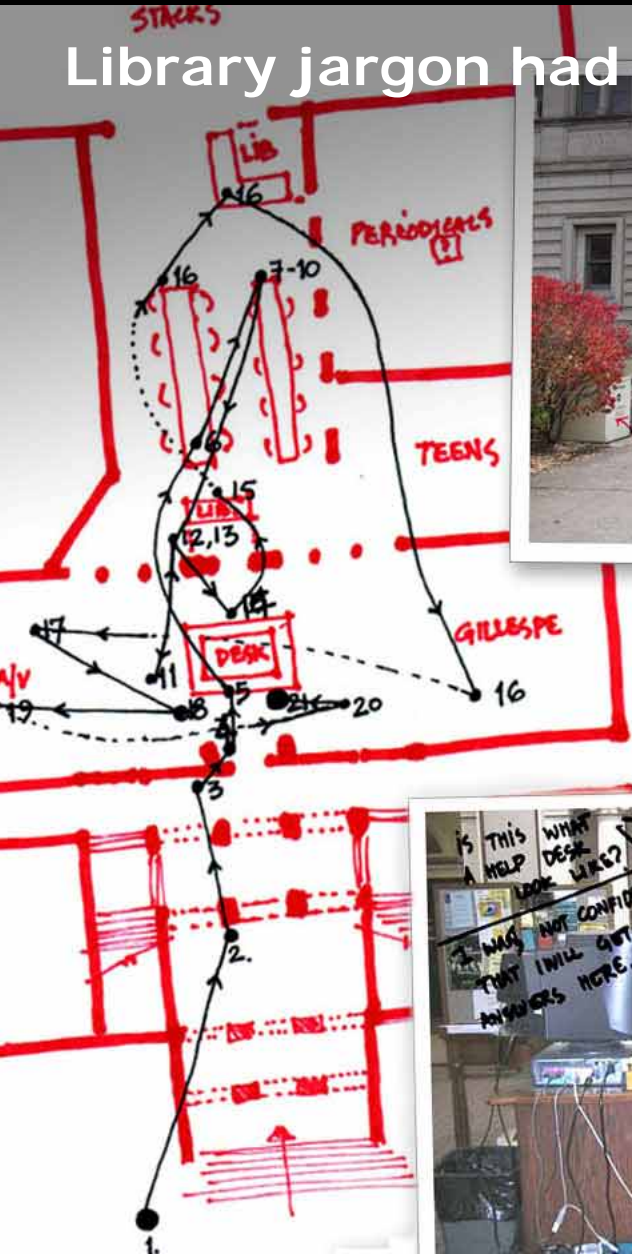


Alternatives (?)

+ SOUND / SMELL / VISUALS / WHAT is the CUE? WHERE?



# Library jargon had permeated the space



# Analysis

# Who are the customers?



G±  
Joe  
WW II  
Vet

\$  
Matters

Salutes  
the  
P.O.

Combat

Patriotic  
don't know  
competition

TRUST

Academics  
Challenged

Social

Connected  
to  
community

looks at  
all  
Mail

Selection



# Define the underlying information architecture

## Components of the Library Experience

Users go through organizers to get to materials and activities

We analyzed the users' present-day experience with the library through input sessions with stakeholders, shadowing of users and librarians, and the development of archetypal personas and scenarios. Identified here are the four major components of the library experience.



# Use this framework to describe the customer experience



## Searcher Nicolas

**Primary goal**  
Wants to publish a short story.

**Secondary goals**  
Borrow English-language titles for his wife.  
Learn more about his new hometown.

### Description

Nicolas is 44 and has recently moved to Pittsburgh from Bulgaria with his wife Daria. They live in an apartment in Oakland. Nicolas works as an electrical engineer for GenCorp and, in his spare time, writes short stories. He'd like to find out more about getting published. In addition, his wife would like to become more fluent in English.

**Frequency of visit:** Moderate  
**Half-weekdays:** Positive  
**Gender:** Male

## ORGANIZERS



Go to the library on Monday to look for advice on publishing short stories. Wonders if the library has index cards. If he should ask a librarian, and if he can use a computer to check the catalog.

*Question: How do I start? What are my choices? What steps do I need to take?*

Finds a computer and sees a Microsoft Windows desktop on the screen. Wonders if it's a coding computer and, if so, how to use it. Opens Explorer.

*Difficult to navigate: Is a computer allowed for book catalog lookups and games? How clear are the instructions?*

In the following pages, we have taken four personas and developed goal-oriented scenarios to illustrate the current experience. At each key interaction and across device barriers to a successful experience.



## Non-user Naomi

**Primary goal**  
Wants to order.

**Secondary goals**  
Check out CDs or DVDs.  
Get answers about health or family history.

### Description

Naomi is 59 and married with two children. She works full time as the Director of Sales for Shiftek Systems in Oakland. She's either traveling or at the office late into the night. She lives with her family in a renovated loft on the South Side. She often orders books and DVDs online using Amazon or Netflix, which are conveniently accessible when she's on the go.

### Library experience

Naomi has never been to the library as an adult and thinks of it only as a dusty institution from her childhood. She thinks it is unlikely that they have anything "fresh."

## ORGANIZERS



Sees an ad for a new Stephen King novel "available for free at your library." Decides to stop at the nearby CLP. Hints library after work.

*Last opportunity to take the user. How can the library anticipate user goals?*

Does at the library, she wonders, "Should I ask a librarian? Should I look it up in the catalog? Where is the catalog? I see some shelves with a sign that says 'popular fiction.' Should I check there?"

Looks through the popular fiction area, but can't find the book.



Applies for and receives a library card from the registration desk.

*Possible patronware loss of a user. Does the library lost new members with customers when they step out of the building?*

Needs to get her car before parking meter runs out. Has to return to the library to complete the request for the book. Leaves building.

Sees South Side branch on the way home and decides to stop and see if they have the book.

Clark takes her to the "new fiction" area and pulls the book off the shelf. She checks it out.

*Missing opportunity. Making assumptions: What do I return it? How can I return be easy?*

## MATERIALS



## Teen Frankie

**Primary goal**  
Wants to hang out.

**Secondary goals**  
Use computer for chat and games.  
Socialize with other peers.  
Listen to music.

### Description

Frank is 14 and is a little bit behind in his home work after 6pm. They don't want him to hang out at the library until 6.

### Library experience

Frank goes to the library several times, but if those are taken, he'll go to the multiple player strategy games on the app or helping other peers with computer.

## ORGANIZERS



Go to CLP Main in Oakland to hang out after school.

Sees an available computer and sits down to check e-mail. Then logs in to MSN and plays a computer game.

Finds invisible computer in music and art department. Browses the web. Gets bored and decides to go downstairs and look for magazines about extreme sports.

Wonders downstairs to look for magazines. Finds box of free magazines in teen department and glances through them. Doesn't find anything interesting.

*No features found that interest him?*

## ACTIVITY

## ORGANIZERS



Librarian looks it up for her. Determines that it is available at branch library (close to her neighborhood). Librarian suggests reserving the book.



Wants to request the book. She can't do so without a library card, so needs to apply for one.



Doesn't really want to ask, she likes figuring things out herself, but finally asks a librarian and asks for help.

Wonders if the library can take advantage of the problem stated? Can the user reserve an item at the same time as getting a card? Are there any marketing opportunities to hook or speak to first-time customers?

Asks at the front desk if they have the new Stephen King book.

*Wouldn't have realized this if the interface was better.*

# ORGANIZERS



Goes to the library on Sunday to look for advice on publishing short stories. Wonders if the library has index cards, if he should ask a librarian, and if he can use a computer to check the catalog.

*Orientation? How do I start? What are my choices? What steps do I need to take to achieve my goal?*

Finds a computer and sees a Microsoft Windows desktop on the screen. Wonders if it's a catalog computer and, if so, how to use it. Opens Explorer

*Difficult to maintain state on a computer shared for both catalog lookups and general use. Not clear what the computer is limited to. Not a wise use of resources.*



Gets to catalog, searches using keywords: "publish short stories." Returns no useful results.

*Next steps not obvious.*

Clicks on "virtual librarian" and conducts an online chat about what he's looking for with an online librarian. Virtual librarian returns a result showing information about an appropriate book.



Wonders what to do next now that he has a call number for an item that might answer his questions.

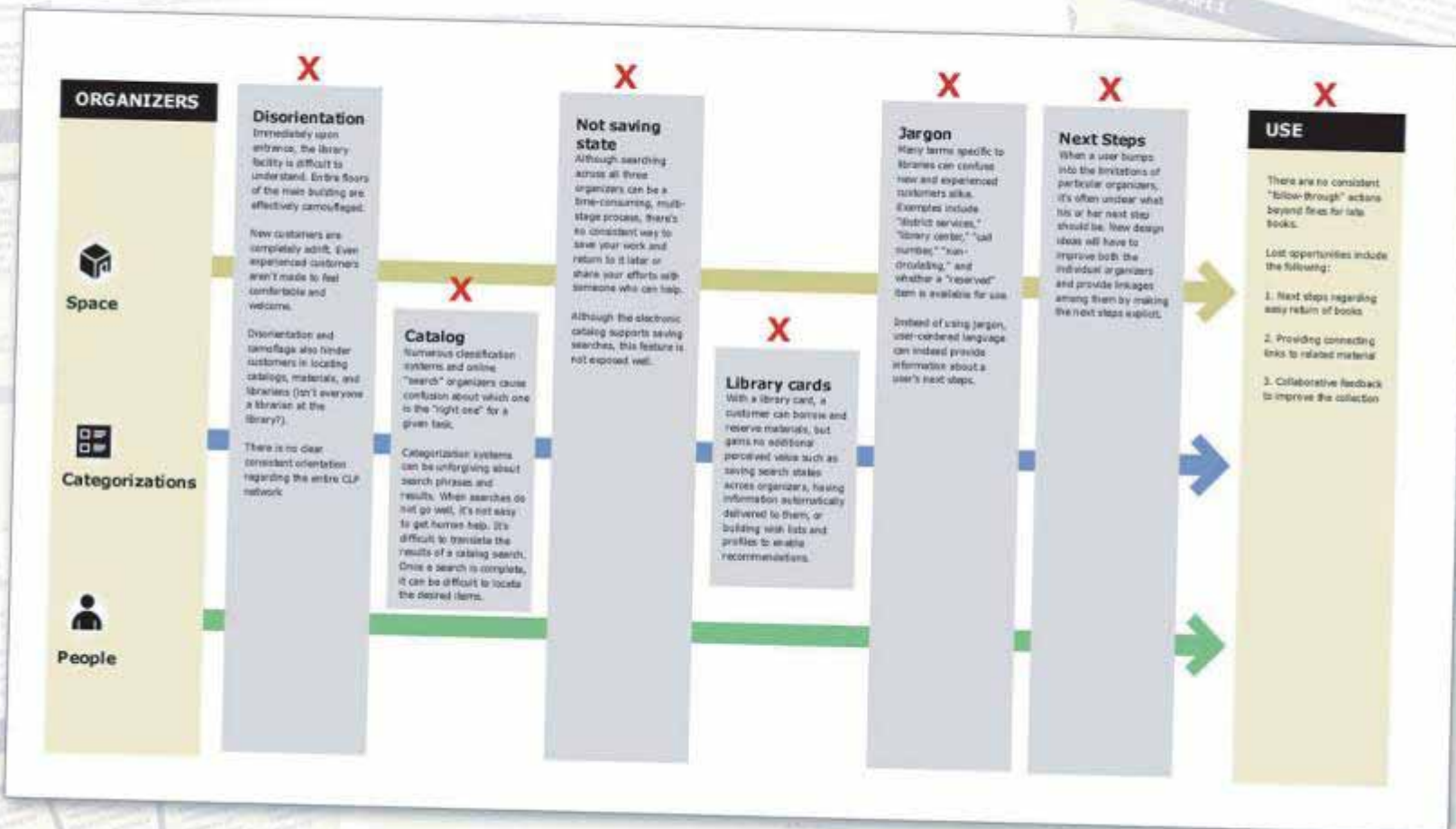
*Catalog not forgiving or intuitive.*



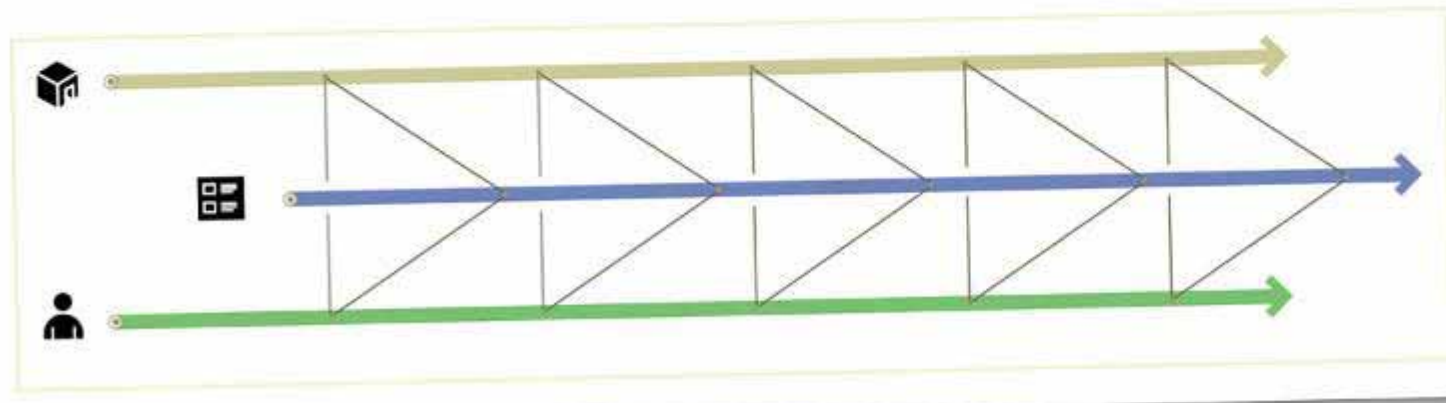
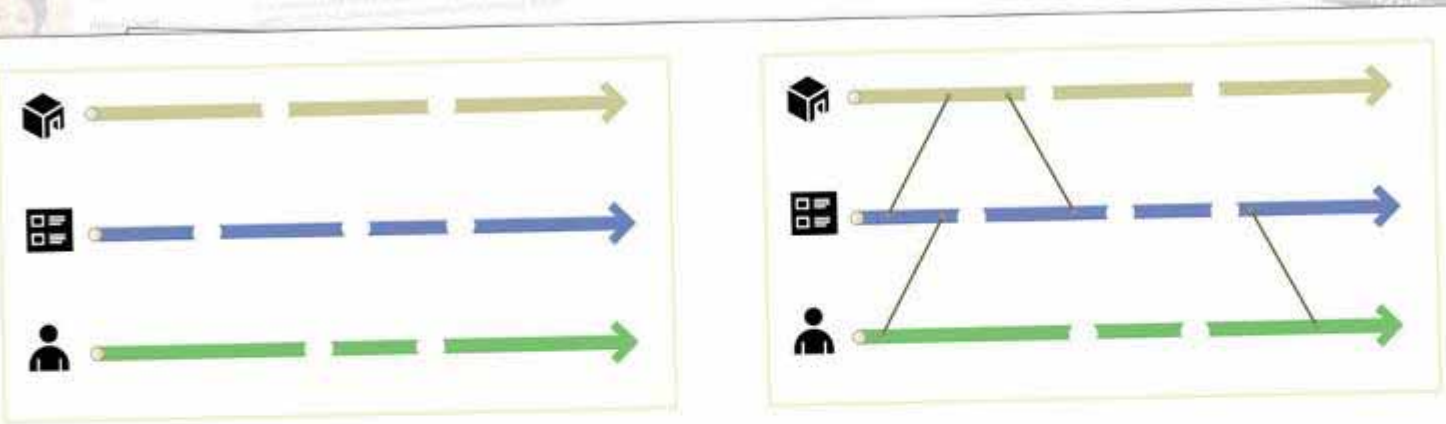
Finds the reference desk and asks a librarian for help. The librarian looks at the call number and takes him to the

Use Scenarios reveal breakpoints

# Breakpoint patterns reveal systemic issues



# Bridging the organizers helps eliminate breakpoints



**X**

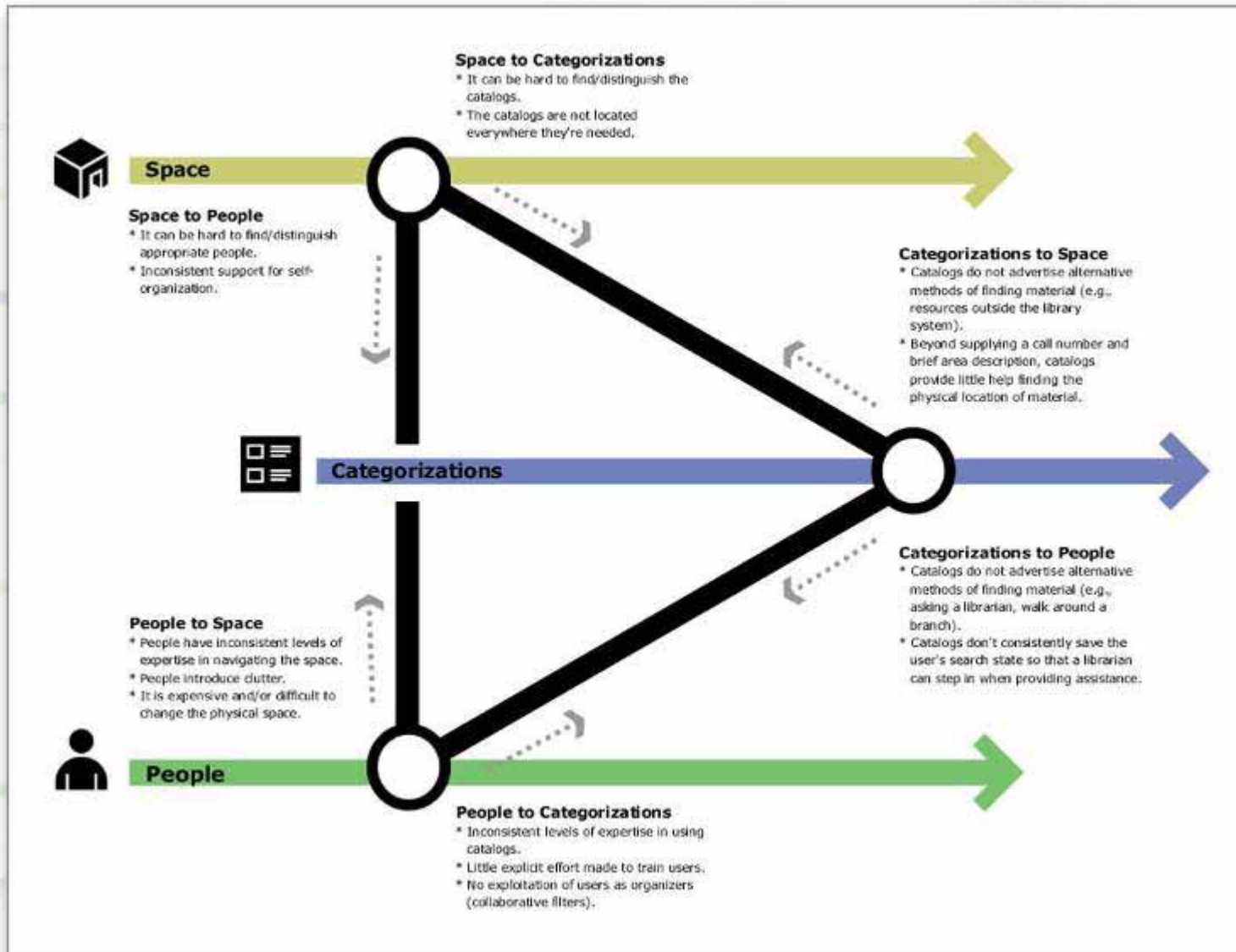
**USE**

There are no consistent "follow-through" actions beyond fees for late books.

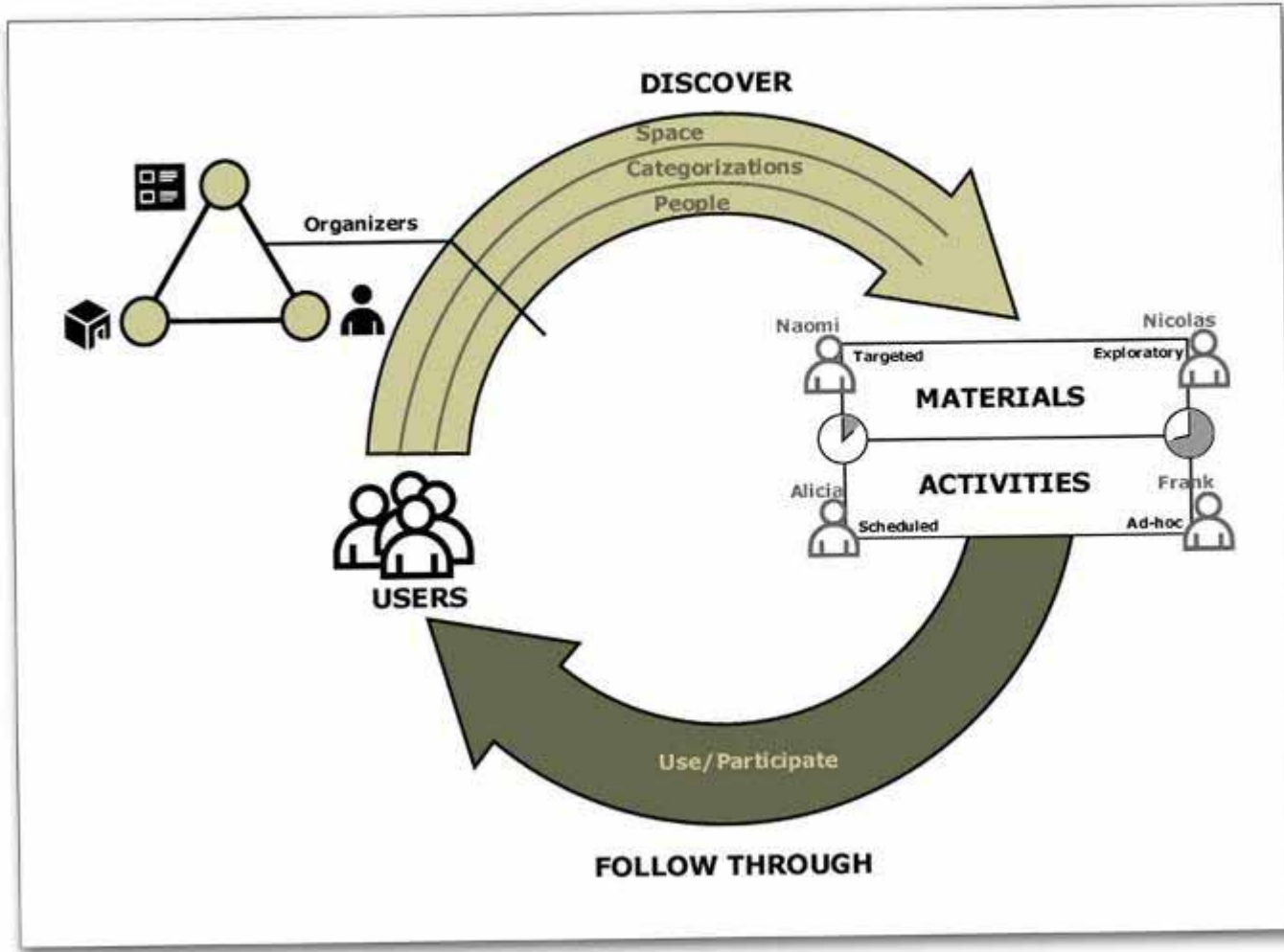
Lost opportunities include the following:

1. Next steps regarding easy return of books
2. Providing connecting links to related material
3. Collaborative feedback to improve the collection

# Principles for designing these bridges



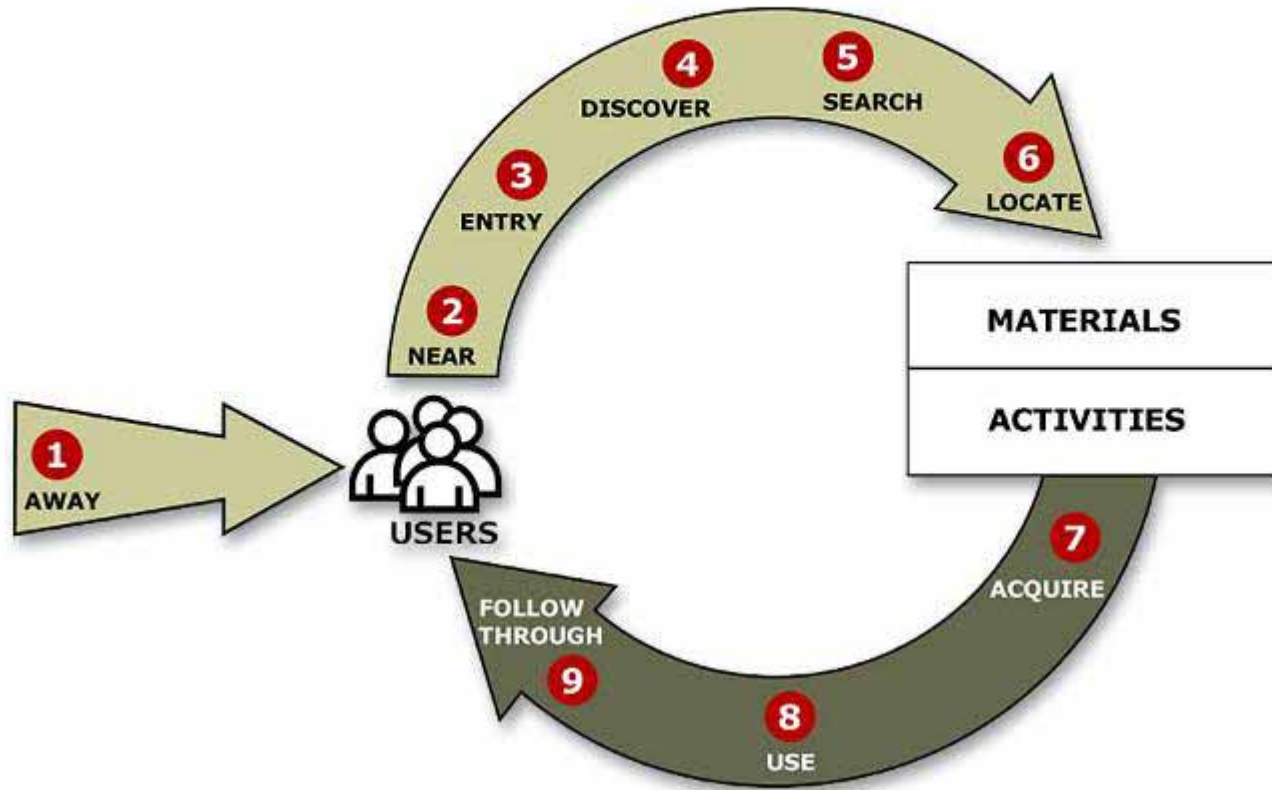
The end of every customer journey should be the beginning of a new one...



# Rapid Prototyping



# Design for complete customer experience cycle



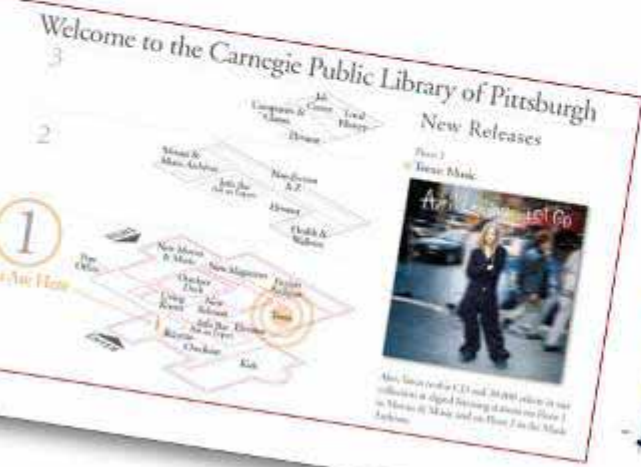
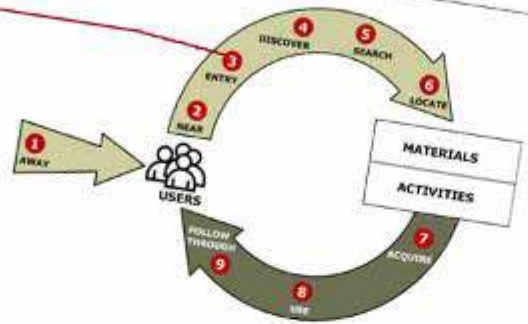
**the user is at the entry**

type of offerings inside (from user's perspective) "at a glance"  
 "you can do this now," mapped to space/time

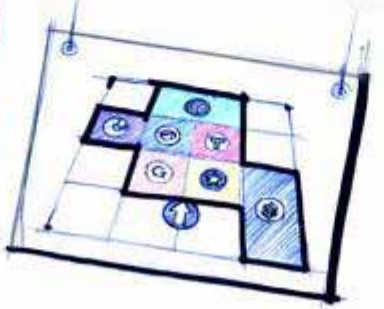
"bumpers" from the resources featured within

popular paths (New Releases, Returns, Search Tools, Expert Help)

HERE YOU ARE. HERE'S WHAT'S NEW.



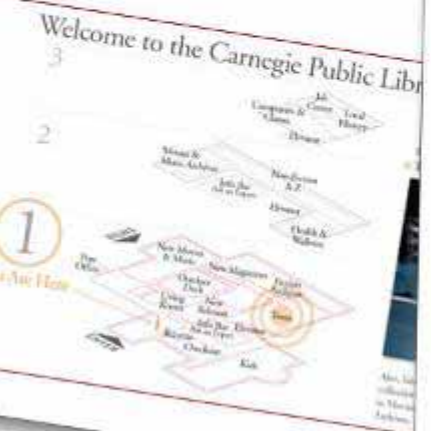
**COARSE & CONCISE ORIENTATION SIGNAGE**



the user is at the entry

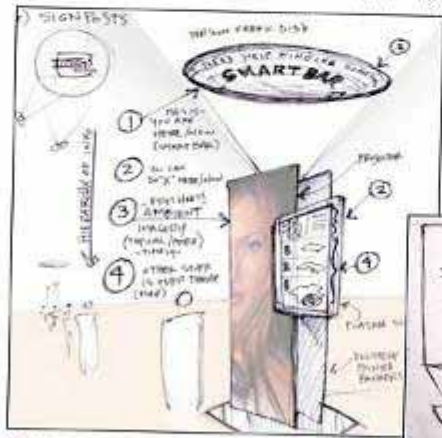
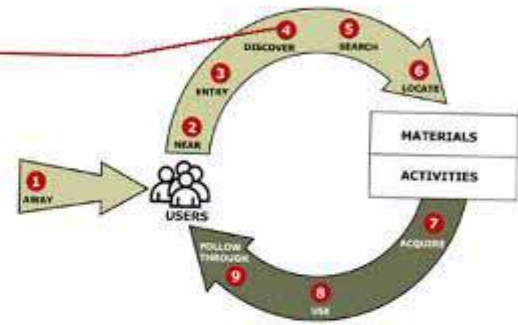
type of offerings inside (from user's perspective) "at a glance," "you can do this now," mapped to space/time)  
 "banners" from the resources featured within  
 popular paths (New Releases, Returns, Search Tools, etc.)

HERE YOU ARE. HERE'S WHAT'S NEW.



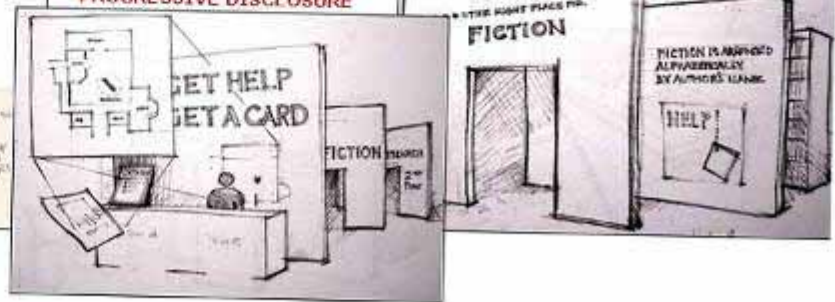
### As the user discovers scope

1. Identify the zone/area by name/ambience and landmark
2. Tell the user what top 2-3 things they can do here (you're in the right place to..)
3. Display fresh messages/imagery relevant to the zone/area in the periphery
4. Tell them how to get to other offerings (map)



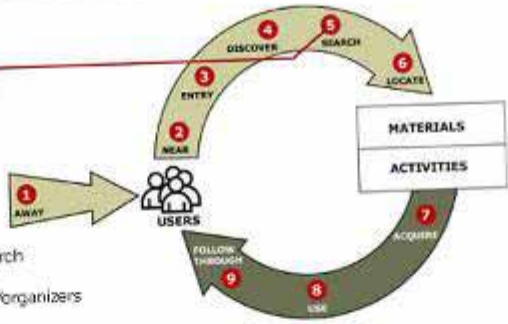
YOU ARE HERE. YOU CAN DO THIS.  
 THAT IS OVER THERE.  
 WHAT'S NEW.

### PROGRESSIVE DISCLOSURE

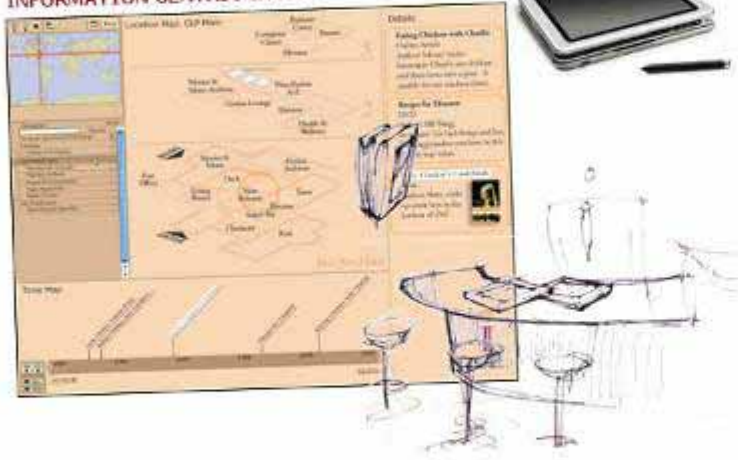


### As the user searches for his/her goal

1. Provide locations for all three organizers to intersect/bridge
2. Provide goal-centric (not department-centric) search tools
3. Highlight method to save user's state
4. Identify paths and remove barriers to Librarians to foster collaborative search
5. Collect feedback to identify and correct information "drift" within connections/organizers



#### INFORMATION CENTRIC INTERFACE



REVEAL CONNECTIONS ACROSS PHYSICAL AND DIGITAL BOUNDARIES

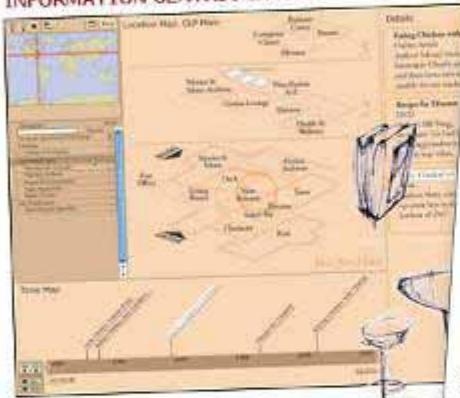


YOU ARE HERE. YOU CAN DO THIS. THAT IS OVER THERE. WHAT'S NEW.

### As the user searches for his/her

1. Provide locations for all three organizers to intersect
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5. Collect feedback to identify and correct information

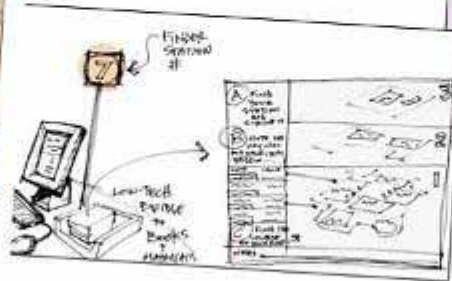
#### INFORMATION CENTRIC INTERFACE



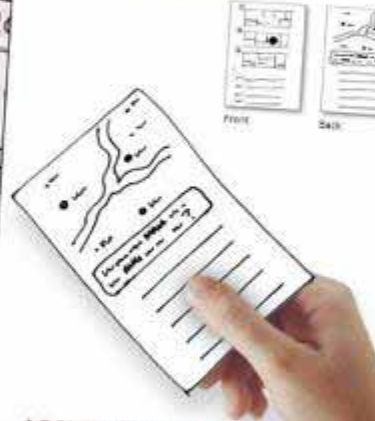
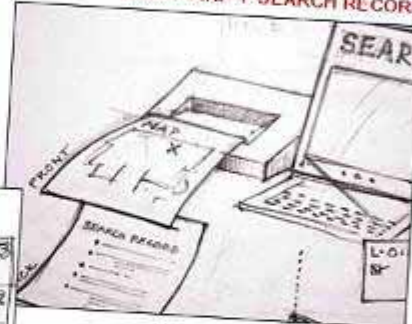
### When the user locates his/her goal

1. Display the availability of (location in time) and distance to (locate in space) the selected resource
2. Map a clear pathway from here to there
3. Support graceful recovery at or near the point of failure (distributed FindIt tools, HelpMe buttons, printed maps)
4. Collect feedback to identify and correct missing or misplaced resources

#### FINDER STATIONS + MAP NOTEPADS



#### PRINT MAP + SEARCH RECORD



YOU ARE HERE. YOU CAN DO THIS.  
THAT IS OVER THERE.  
WHAT'S NEW.

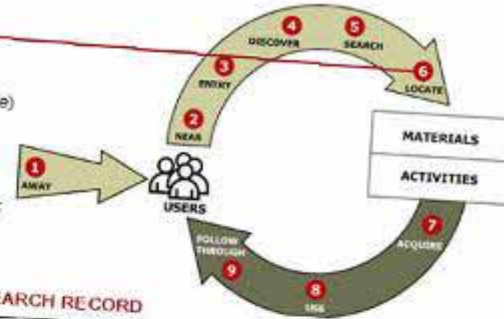


### As the user **searches** for his/her

1. Provide locations for all three organizers to intersect
2. Provide goal-centric (not department-centric) search
3. Highlight method to save user's state
4. Identify paths and remove barriers to Librarians to
5. Collect feedback to identify and correct information "d

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1. Display the availability of (location in time) and distance to (locate in space) the selected resource
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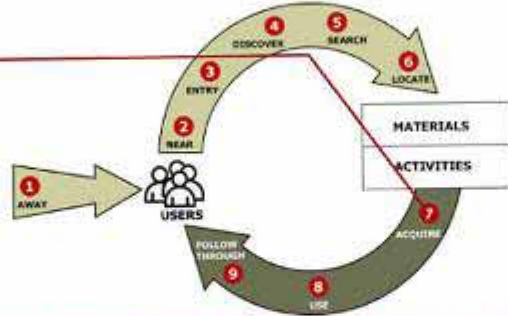


the user is a

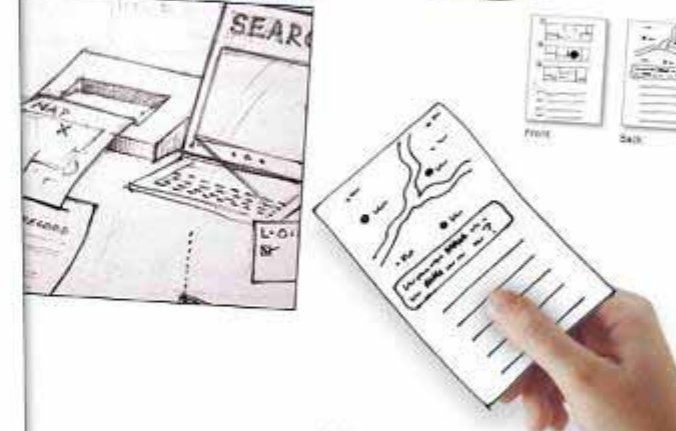
type of offerings inside  
"you can do this now"  
"pockets" from the resource  
popular paths (New D...

### When the user **acquires** material

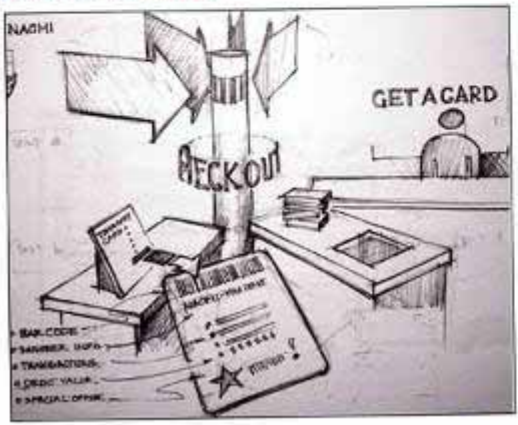
1. Identify acquisition location/actions/steps (your account/check-out, get a card, sign-up, etc.)
2. Confirm usage (when to return, where to return, renewal options)
3. Highlight/Reveal related resources (preprinted bookmarks, mini-marques, barcode scanning tool, etc.)
4. Collect feedback



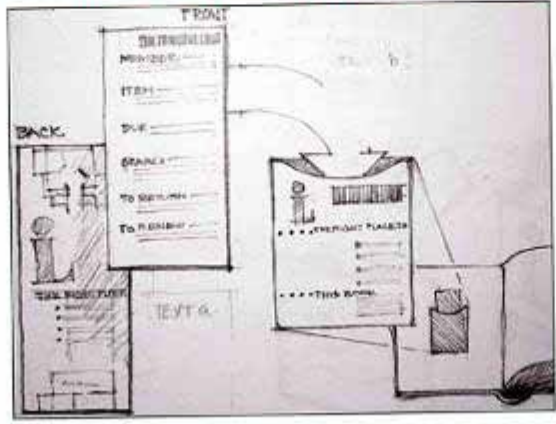
PRINT MAP + SEARCH RECORD



### SEAMLESS CHECKOUT



### BOOKMARK THAT REVEALS RELATED INFO/RESOURCES

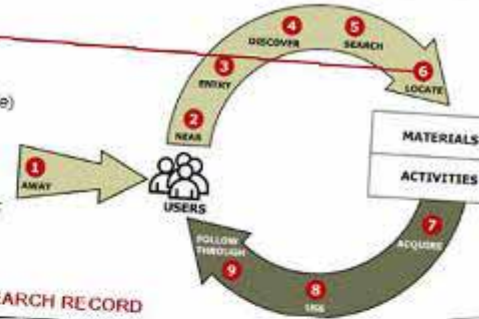


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4. Collect feedback to identify and correct missing or mislabeled resources



the user is a

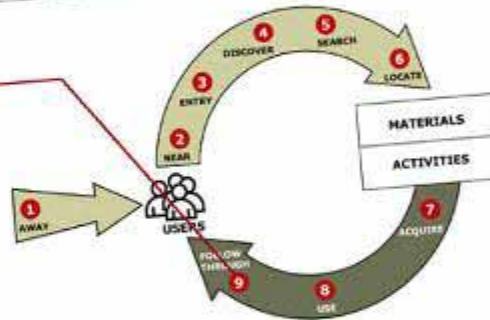
type of offerings inside  
"you can do this now"  
"pockets" from the resource  
popular paths (New De

### When the user **acquires** material

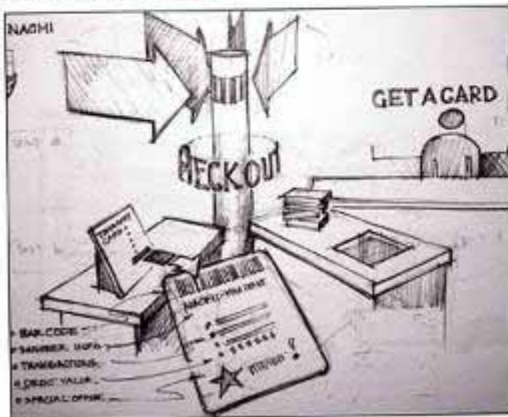
1. Identify acquisition location/actions/steps (your account/check-out, get a card, sign-up, etc.)
2. Confirm usage (when to return, where to return, renewal options)
3. Highlight/Reveal related resources (preprinted bookmarks, mini-marques, barcode scanning tool, etc.)
4. Collect feedback

### When the library **follows through...**

1. Provide usage reminders/options (all reminder style interaction should be "opt-in")
2. Identify convenient return/re-entry locations
3. Gather/support contribution of related information to Library resources (comments, reviews, connections)



#### SEAMLESS CHECKOUT



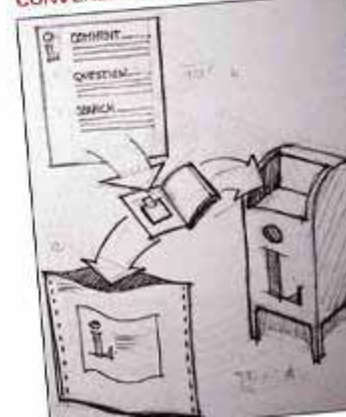
#### BOOKM



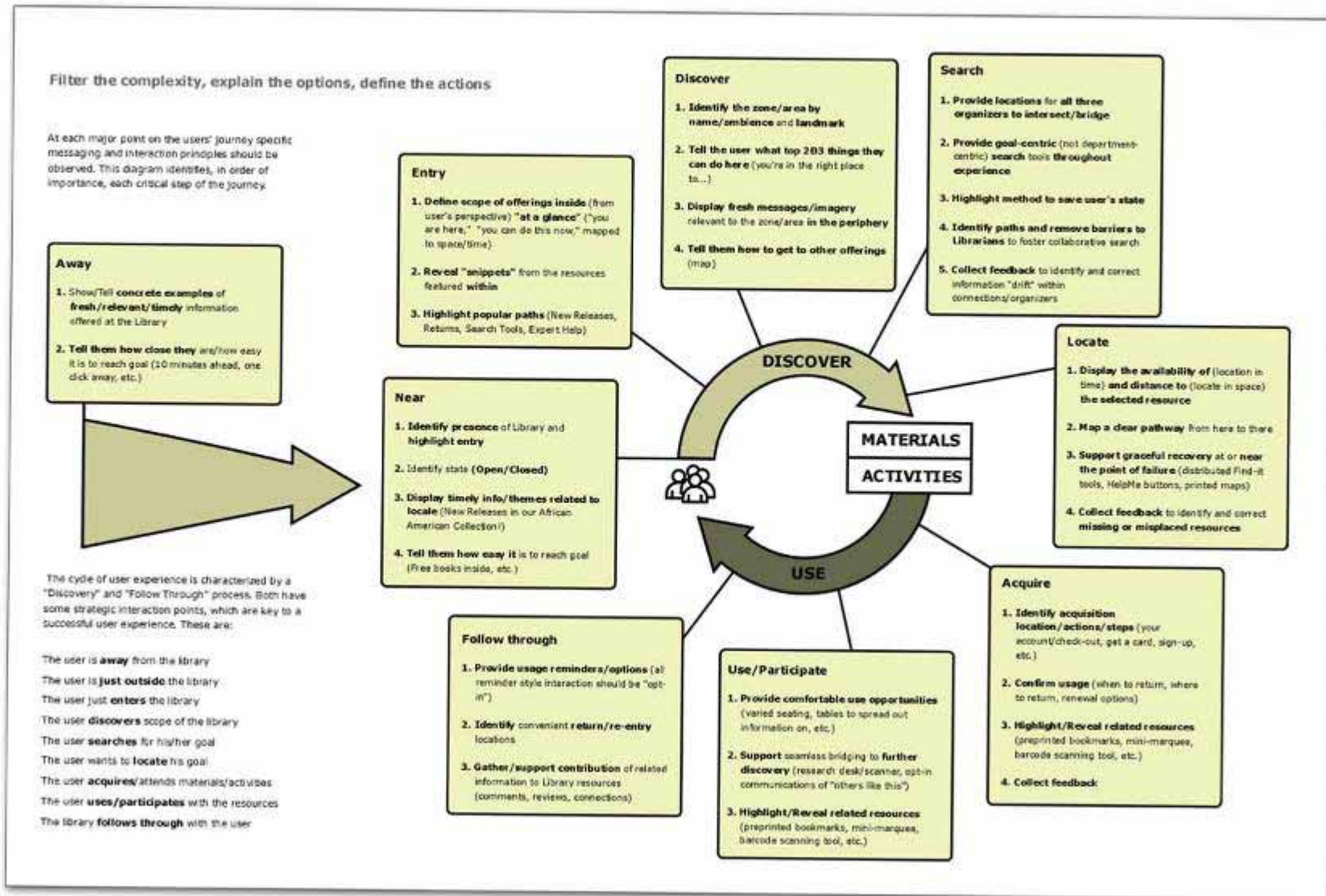
#### IDENTIFY NETWORK CONNECTIONS FOR CONVENIENCE



#### CONVENIENT RETURNS

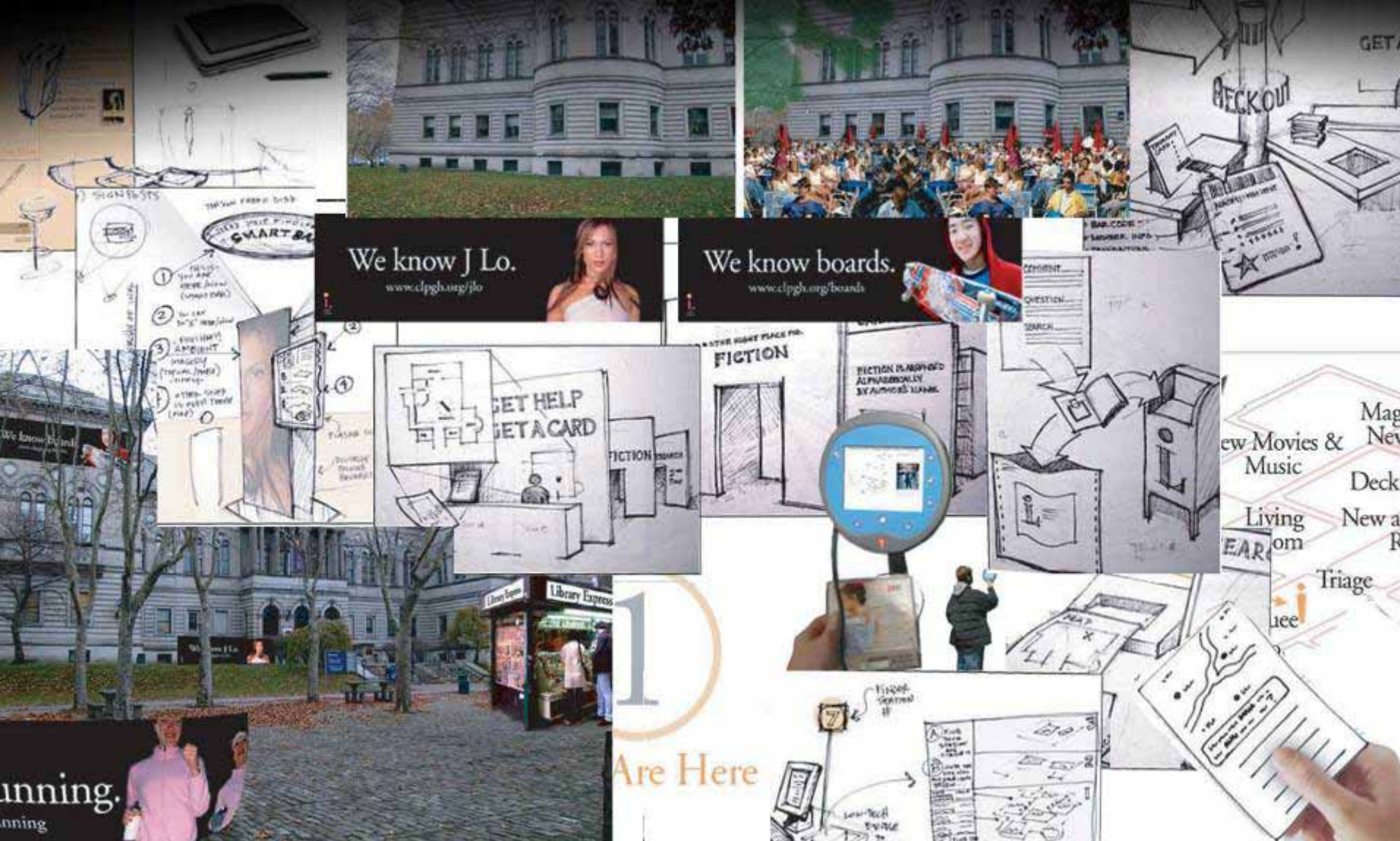


# Design principles





# Rapid prototypes help to explore options quickly



# Return on Investment (ROI)

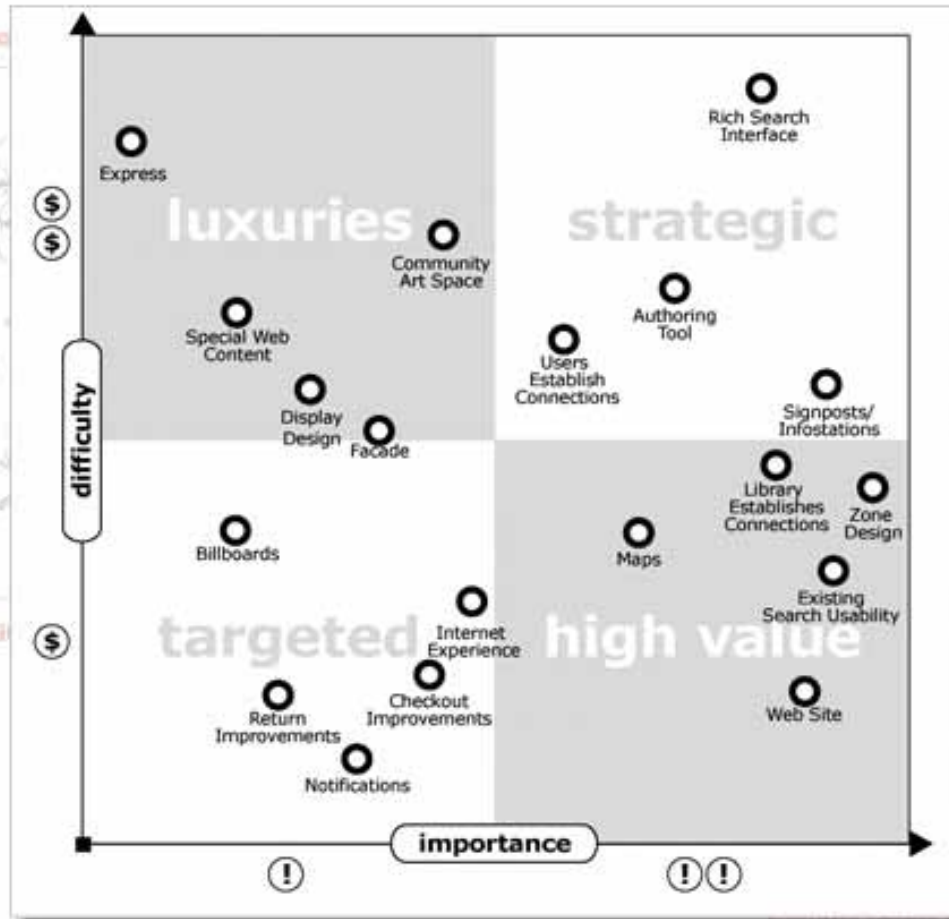
Authoring Tool

A system that allows library staff to generate signs and web-based material easily and consistently.

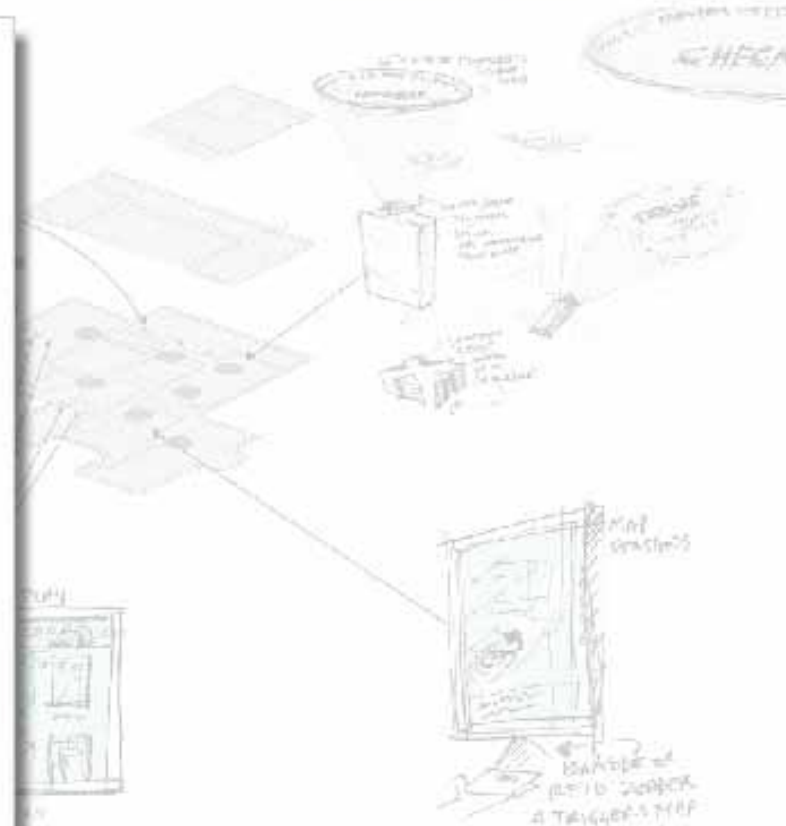
Drag-and-dro



Handheld edit



Infostations signage



Wayfinders



various outputs all driven by the same system

# How to spend wisely

## Next Steps...

### Exploring

- \$\$\$\$ Rich Information-Centric Find-it Tool
- \$\$ Interface that allows Library & Users to make connections
- \$ Traditional but more usable Find-it Tool

### Wayfinding

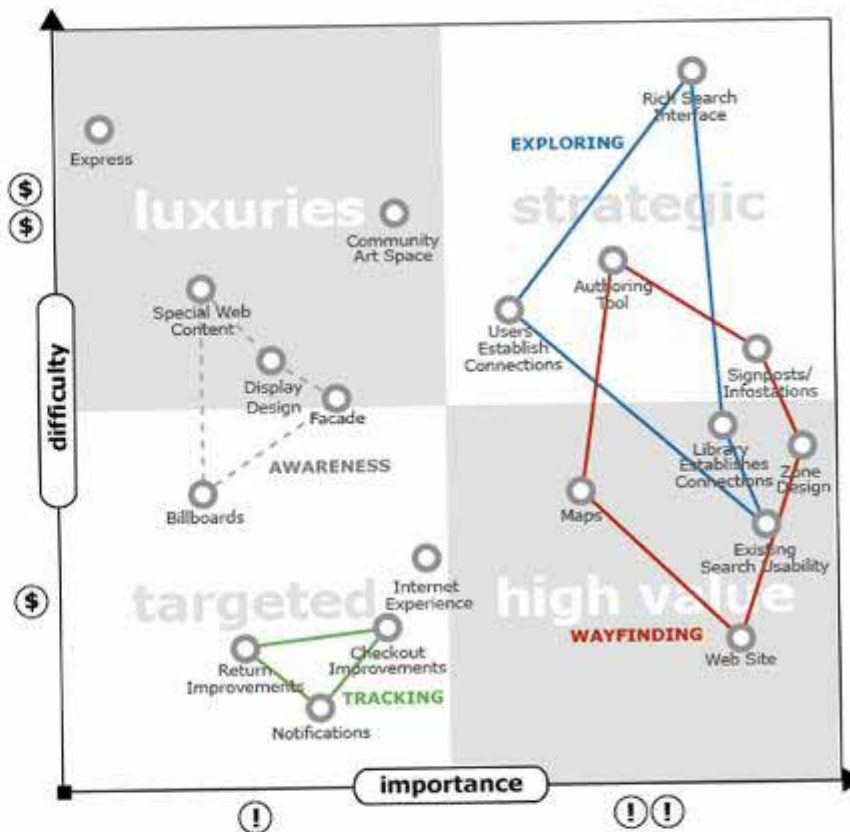
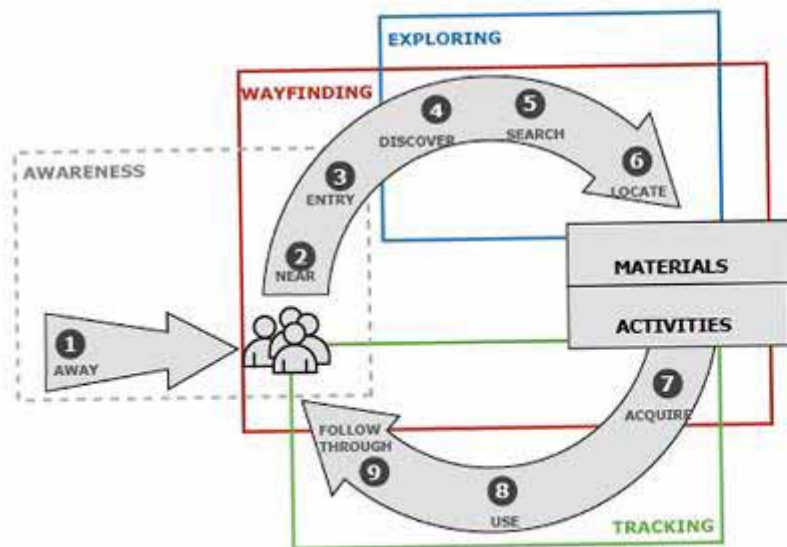
- \$\$\$\$ Publishing across building using an authoring system
- \$\$\$ Dynamic signage system
- \$\$ Low tech. signage system
- \$ Fixing the CLP web site

### Tracking

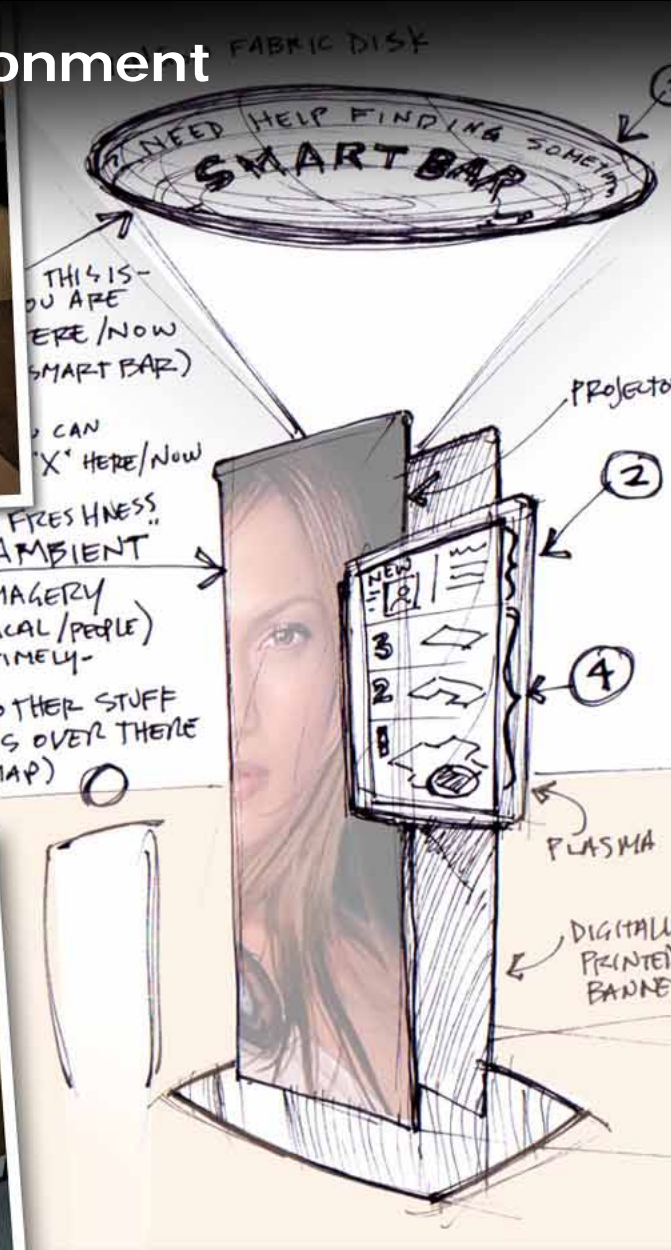
- \$\$ Designing the follow-through process with improvements on how to borrow, how to return, what data to collect, how to keep in touch with the user, and how to use the library card.

### Design Agent

- \$ Evaluating and Testing CLP's progress.



# Project 1: A dynamic information environment



# Project 2: A consistent online experience



Existing web site



User-centered web site

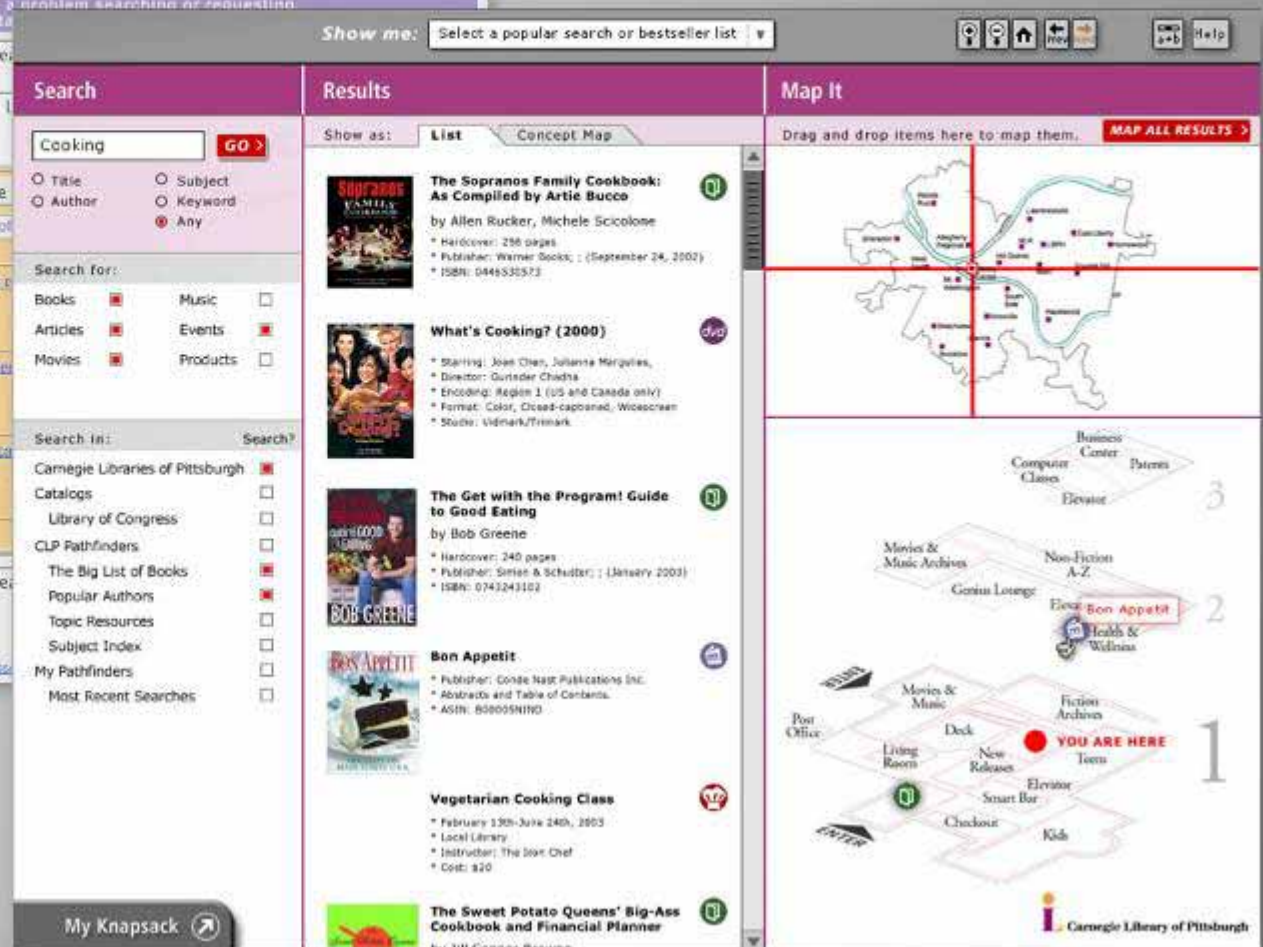


# Project 3: An intuitive catalogue



Current catalog interface

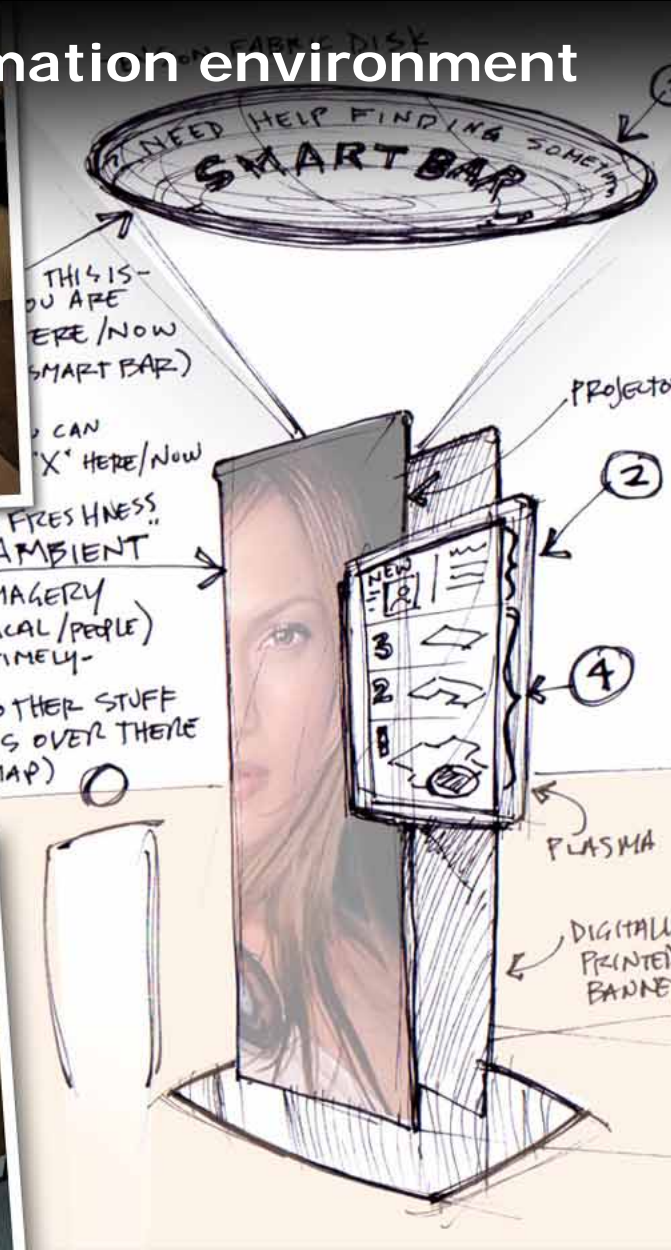
Information-centric interface



Design



# Taming complexity with dynamic information environment



# What is the hierarchy of information?

## Classification Scheme

Orientation, Identification, Education, and Connection

We've organized signs into five broad categories. This will help guide visual design, allowing sign designers to create consistent styles and templates. It will also help us make decisions about the relative importance of signs and how much of the user's attention should be devoted to each kind of communication. Each category is further divided into sub-categories, and examples of each are provided.

### Orient/Wayfinding [A]

Display the scope of physical spaces, time-based events and provide directions to major areas.

#### Spatial [A-1]

- \* Library map
- \* Area map
- \* Directory
- \* Directions

#### Temporal [A-2]

- \* Event calendar

#### Status [A-3]

- \* Open/Closed
- \* Hours of operation
- \* Holiday schedule

### Identify Area [B]

Identify building, areas, stacks, and facilities within the library system.

#### Major Areas [B-1]

- \* Carnegie Library of Pittsburgh
- \* Entrance/Exit
- \* New and Featured
- \* Coffee Bar
- \* Lounge
- \* Teens
- \* Childrens'
- \* Magazines and Newspapers
- \* Movies, Music & Audiobooks

#### Stacks [B-2]

- \* \_\_\_\_\_ Collection (Open Shelves)
- \* \_\_\_\_\_ Collection (Closed Shelves)
- \* LOC Subject (e.g., U.S. History)
- \* Subtopic (e.g., Vegetarian cookbooks)
- \* Location (e.g., Stack 16)

#### Facilities [B-3]

- \* Meeting room
- \* Restrooms
- \* Elevator

#### CLP Network and Beyond [B-4]

- \* Immediate neighborhood

### Identify Action [C]

Identify actions that take place in the library.

#### Actions [C-1]

- \* Ask a Librarian
- \* Find It Here
- \* Explore the Internet
- \* Browse (Open/Closed Shelves)
- \* Customer Services
- \* Self-Checkout
- \* Returns
- \* Device-based actions (Photocopier, microfilm, listening booths, etc.)

### Educate [D]

Instruct, explain and inform library users to encourage self-sufficiency and help them become expert users.

#### Instruct: "Just-in-time help to get results" [D-1]

How to...

- \* Sign up for an event
- \* Use online databases
- \* Access online databases

#### Explain: "Transforming 1st-time-user into power-user" [D-2]

Did you know?

- \* Fiction is shelved by author's last name
- FAQ
- \* How is fiction organized?

#### Inform: "What CLP and its users expect of each other?" [D-3]

- \* Usage policies (Internet time limit: 30 min)
- \* Behavior expectations (No smoking)
- \* Legal disclaimers and disclosures

### Connect [E]

Establish connections between library's activities and resources in order to reveal them to the users serendipitously.

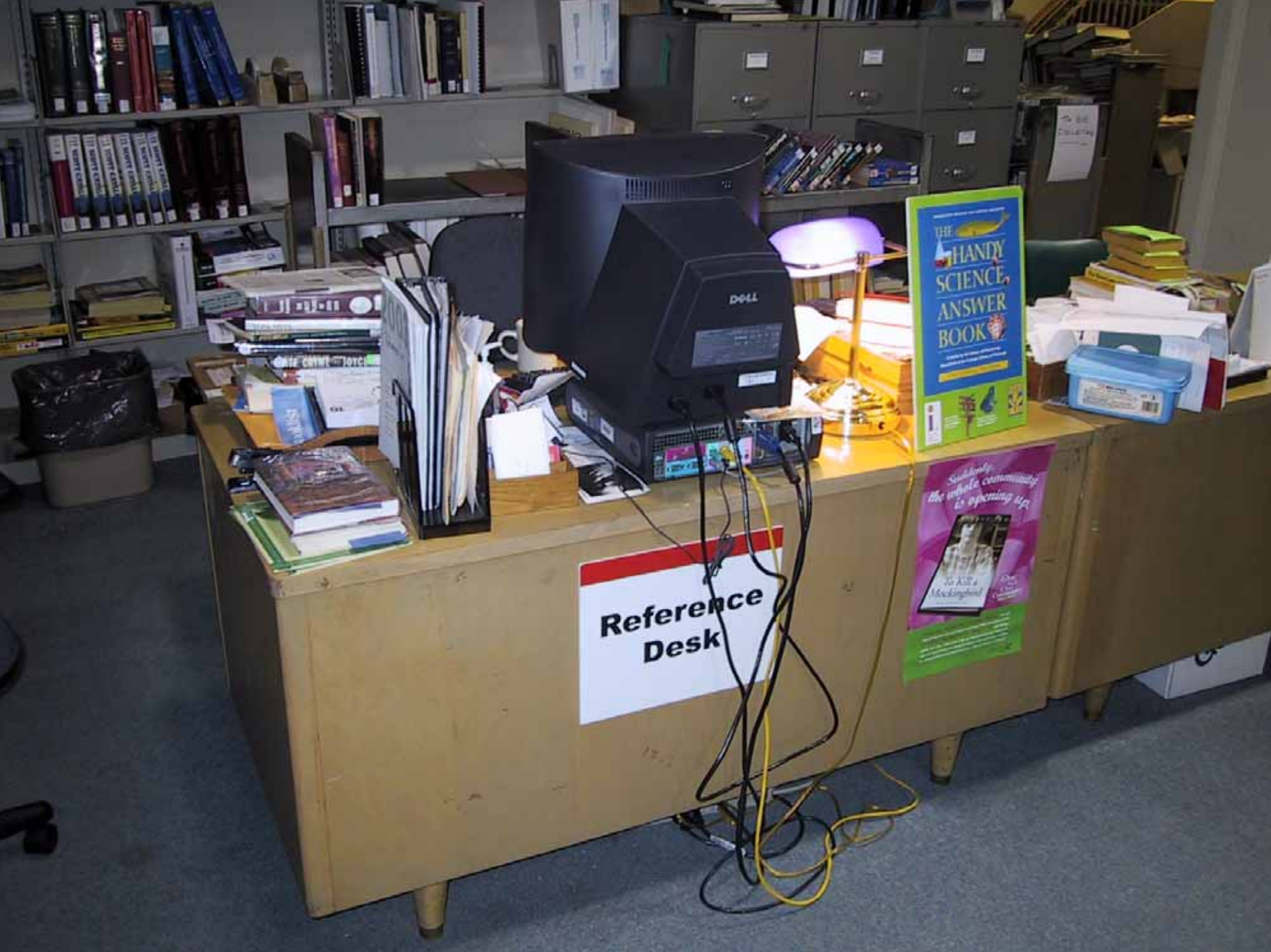
#### Related connections (map directly to user actions/goal) [E-1]

- \* Sponsored by the library
- \* Sponsored/Cosponsored by a trusted third party (e.g., regional library initiatives or partnership with hospital)
- \* Sponsored by the community (e.g., James Turrell lecture at CMU)

#### Random connections (serendipitous in nature) [E-2]

- \* Sponsored by the library
- \* Sponsored/Cosponsored by a trusted 3rd party (e.g., regional library initiatives or partnership with hospital)
- \* Sponsored by the community (e.g., neighborhood meeting, bulletin boards)





**Reference  
Desk**

**THE  
HANDY  
SCIENCE  
ANSWER  
BOOK**

*Scotland's  
whole community  
is opening up.*

**To Kill a Mockingbird**

# ask a librarian



Lexicon shifts to user-centered  
(not system-centered) language

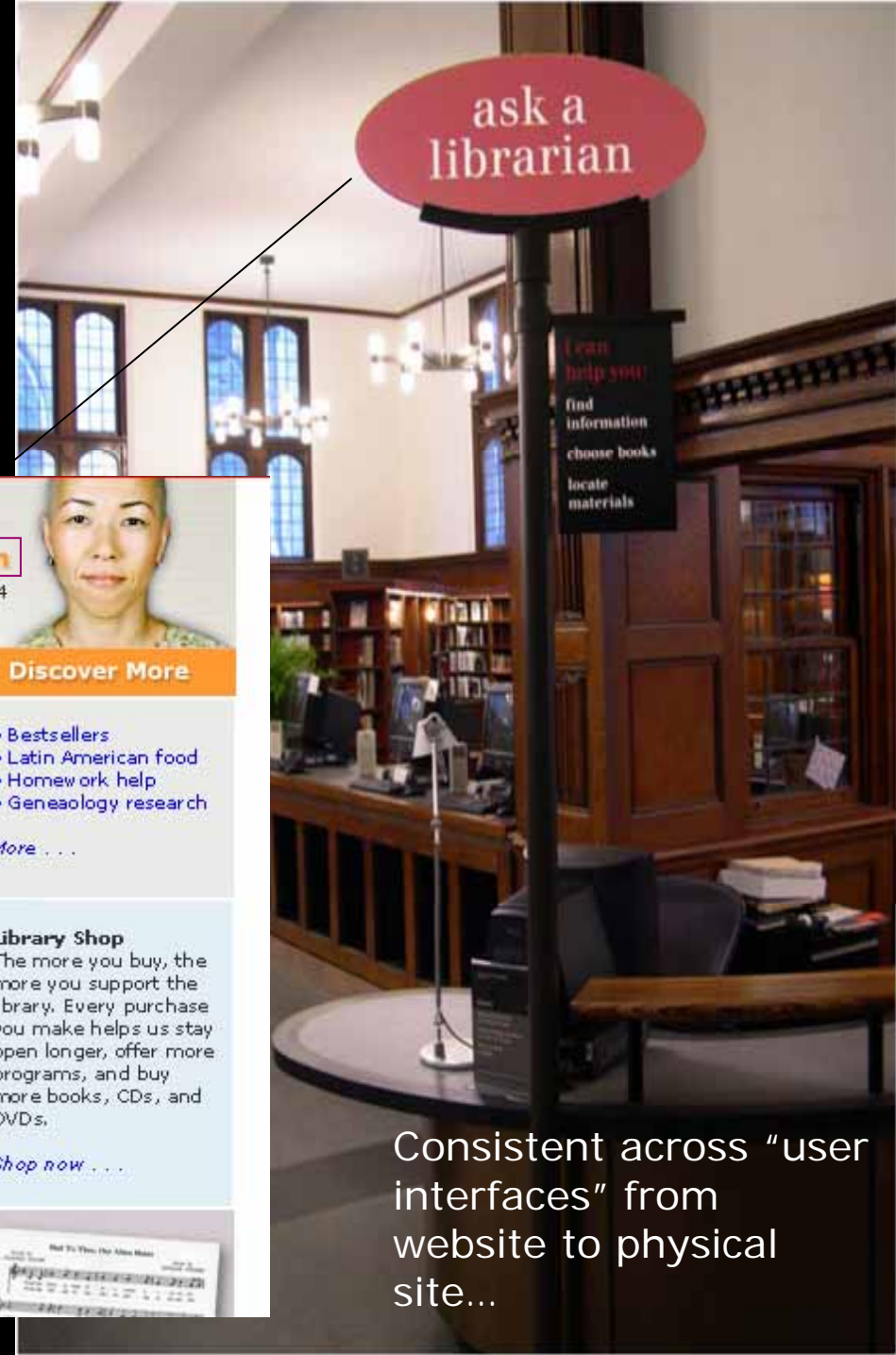
Reference desk = Ask a Librarian



# ask a librarian

Lexicon shifts to user-centered (not system-centered) language

Reference desk = Ask a Librarian



University of Pittsburgh Library

**Ask a Librarian**  
E-mail | Chat | 412-622-3114

About the Library	What's Happening	Customer Services	Discover More
<ul style="list-style-type: none"><li>Hours and locations</li><li>Library shop</li><li>Donate/Volunteer</li><li>Employment</li></ul> <p>More . . .</p>	<ul style="list-style-type: none"><li>Today's events</li><li>Event calendar</li><li>Class listings</li><li>Library renovations</li></ul> <p>More . . .</p>	<ul style="list-style-type: none"><li>Your account</li><li>Get a library card</li><li>Borrowing policies</li><li>Renew materials</li></ul> <p>More . . .</p>	<ul style="list-style-type: none"><li>Bestsellers</li><li>Latin American food</li><li>Homework help</li><li>Genealogy research</li></ul> <p>More . . .</p>

**News**

- Lorem ipsum dolor sit amet, consectetur adipiscing elit sed diam nonummy nibh.** Euismod tincidunt ut laoreet dolore magna aliquam erat volutpat. Ut wisi enim ad minim veniam, quis nostrud exercitation ullam corper. Sic transorum un descriptit ven visilis.
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- Li European lingues. Es membres del sam familie.**

**Library Shop**  
The more you buy, the more you support the library. Every purchase you make helps us stay open longer, offer more programs, and buy more books, CDs, and DVDs.  
[Shop now . . .](#)

**Did You Know?**  
Borrow from our collection of more than 12,700 musical scores

Consistent across "user interfaces" from website to physical site...



at least  
Remember:  
TABLE COUNT  
Must be worked at  
the start!

**Partners for a healthy Pittsburgh**  
Presents:  
Expert Advice  
**BIOTERRORISM -**  
Things you should know  
March 13, 7 - 8:30 PM  
Carnegie Museum of Art Theater

Presented by the 2002-2003 Biodefense Center for the University of Pittsburgh and the University of Pittsburgh Medical Center in partnership with the University of Pittsburgh Graduate School of Public Health and the University of Pittsburgh School of Medicine.

Registration is free. Space is limited. Seating is on a first-come, first-served basis. For more information, contact the University of Pittsburgh at 412-624-2000 or visit the website at [www.pitt.edu/~biodefense](http://www.pitt.edu/~biodefense).

University of Pittsburgh  
Merry

**The Online Reference Center**  
All you need is an internet connection.  
Simple to use by:  
ePatronize

**Chess**  
TOURNAMENT

About the Book  
[Image of a book cover]

For your convenience  
we now accept  
**MasterCard**  
**VISA**

**LEVENT**  
CALENDAR  
FEBRUARY 2003

Adults	Children
10:00 a.m. - 12:00 p.m.	10:00 a.m. - 12:00 p.m.
1:00 p.m. - 3:00 p.m.	1:00 p.m. - 3:00 p.m.
4:00 p.m. - 6:00 p.m.	4:00 p.m. - 6:00 p.m.

**BROOKLINE  
BRANCH LIBRARY**  
Monday - Thursday  
10 a.m. - 8 p.m.  
Saturday  
9 a.m. - 5 p.m.  
Friday and Sunday  
CLOSED



Circulation desk = Customer Services



customer services



get a library card

check out & return

pay fees

**Carnegie Library of Pittsburgh**

Ask a Librarian  
E-mail | Chat | 412-622-3114

Find it Here	About the Library	What's Happening	Customer Services	Discover More
<p>Search</p> <input type="text"/> <p><input checked="" type="radio"/> This web site <input type="radio"/> Catalog <b>Go</b></p>	<ul style="list-style-type: none"><li>Hours and locations</li><li>Library shop</li><li>Donate/Volunteer</li><li>Employment</li></ul> <p>More . . .</p>	<ul style="list-style-type: none"><li>Today's events</li><li>Event calendar</li><li>Class listings</li><li>Library renovations</li></ul> <p>More . . .</p>	<ul style="list-style-type: none"><li>Your account</li><li>Get a library card</li><li>Borrowing policies</li><li>Renew materials</li></ul> <p>More . . .</p>	<ul style="list-style-type: none"><li>Bestsellers</li><li>Latin American food</li><li>Homework help</li><li>Genealogy research</li></ul> <p>More . . .</p>
<p><b>Resources</b></p> <ul style="list-style-type: none"><li>Catalog</li><li>Databases</li><li>Topic guides</li><li>Lists</li></ul> <p><b>Special sites</b></p> <ul style="list-style-type: none"><li>Kids</li><li>Teens</li></ul> <p><b>Departments</b></p> <ul style="list-style-type: none"><li>Job and Career Education Center</li><li>Pennsylvania Department</li><li>Business and Foundation Center</li></ul>	<p><b>News</b></p> <ul style="list-style-type: none"><li><b>Lorem ipsum dolor sit amet, consectetur adipiscing elit sed diam nonummy nibh.</b> Euismod tincidunt ut laoreet dolore magna aliquam erat volutpat. Ut wisi enim ad minim veniam, quis nostrud exercitation ullam corper. Sic transorum un descriptit ven visilis.</li><li><b>Ex ea commodo consequat.</b> Duis autem. Veleum iriure dolor in hendrerit in vulputate velit esse molestie consequat, vel willum lunombro dolore eu feugiat nulla facilisis at vero eros et accumsan et odio dignissim qui blandit.</li><li><b>Li European lingues. Es membres del sam familie.</b></li></ul>		<p><b>Library Shop</b></p> <p>The more you buy, the more you support the library. Every purchase you make helps us stay open longer, offer more programs, and buy more books, CDs, and DVDs.</p> <p>Shop now . . .</p>	<p><b>Did You Know?</b></p> <p>Borrow from our collection of more than 19,000 . . .</p>

# Content management system



Web-based content management system...

...that you can look up the latest articles in health publications in our online subscription databases?

We have thousands of magazines you can read online on topics including:

- Addictions
- Aging
- Alternative Medicine
- Cancer Resources
- Sports Fitness
- Heart Health
- Medicines and Supplements
- Men's, Women's, and Children's Health
- Preventative Care & Diagnostic Tests
- Surgery
- Thousands more ...

These resources are available at no cost only in your library!

You can't find this kind of accurate, dependable information for free by just searching the web.

+ database of sign templates

+ preprinted paper

want to know more? ask a librarian.



...that you can look up the latest articles in our online subscription databases?

We have thousands of magazines you can read online on topics including:

- Biographical Resources
- Business
- Current Topics & Controversies
- Genealogy
- Health
- Jobs, Careers, & Education
- Literature
- Music & Art
- Science & Technology
- Sports

These resources are available at no cost only in your library!

You can't find this kind of accurate, dependable information for free by just searching the web.

= self-service, consistent signs.

want to know more? ask a librarian.

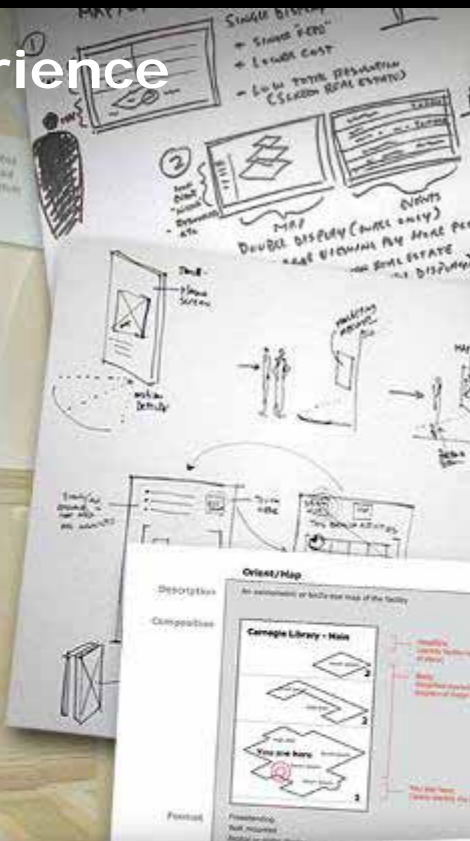
# Information can be published on demand



# Orient/Direct people to the scope of the experience



Book Booth  
Book Office  
Book & Journals  
Elevator  
Children  
Customer Service  
Get a book and check out a new one too.  
Book for Ticket & Admission on Upper Deck



### Welcome to the Carnegie Public Library of Pittsburgh

**1 You Are Here**

**2**

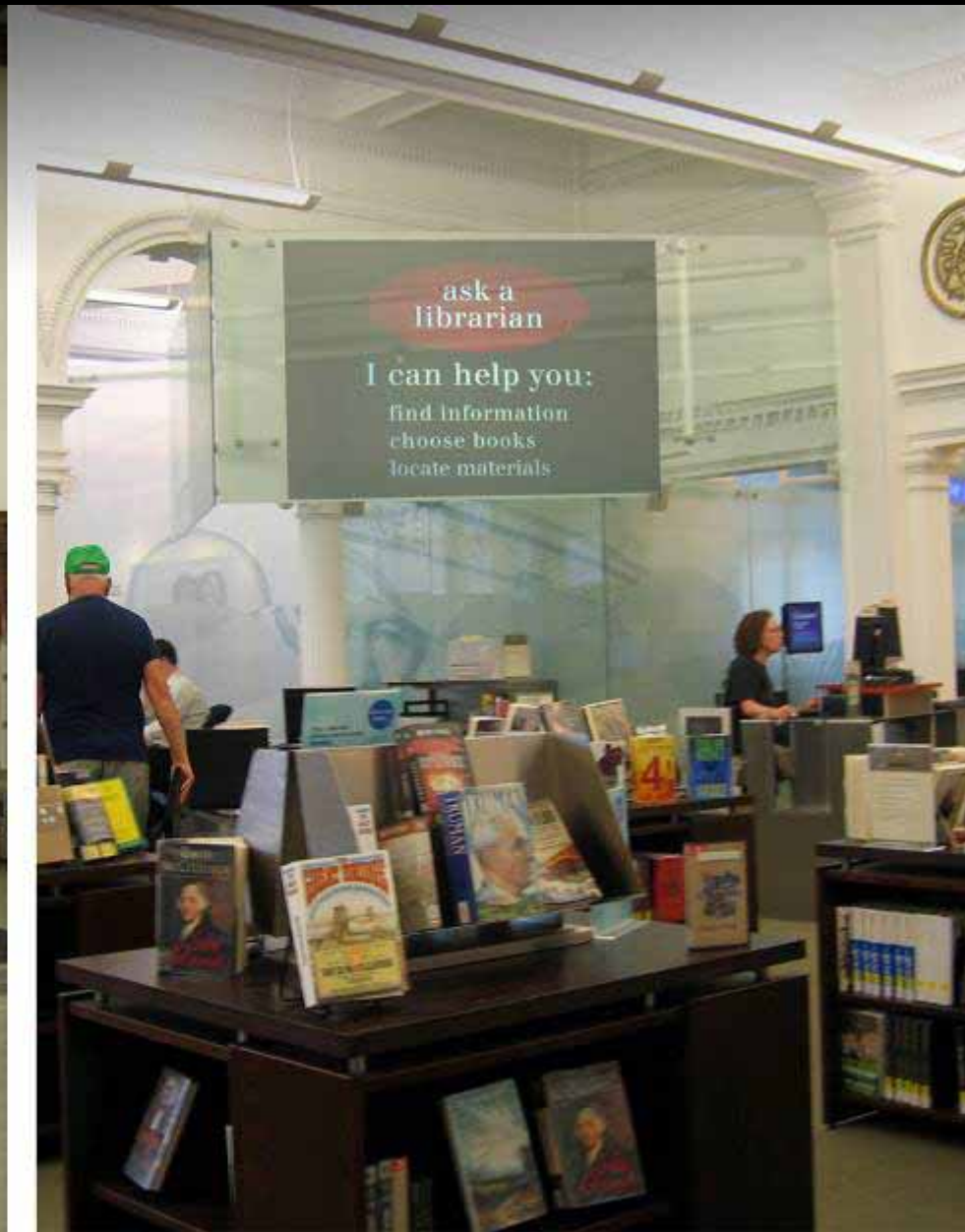
**3**

**Location**

Floor 3  
Computer Classroom

Points of computer available for scheduled classes and instruction. In rooms of the Career and Education center. Ask us for help desk for class schedules and registration information.

# Identify to reinforce



# Educate to encourage self-sufficiency

## How-to + Usage Policy (for Actions)

Complex devices or actions within the library require detailed instructions in the form of "How-to...". These are just-in-time help for new users. While these instructions provide a first tier of explanation, on-line help and librarians can provide additional support.

These are usually coupled with the library's usage policies.

### How-to:

**Start** **How-to Catalog Search?**

1. Lorem ipsum dolor.
2. Uburim tequit numis sonsequat.
3. Epsum num ipsum.
4. ...

**Finish**

*Ask a Librarian for more info*

### Usage Policy:

[Usage Policy]  
**Time Limit**  
 15 minutes when other people are waiting

### Time/Flowchart

Identify any major time-consuming tasks or the overall amount of time usually required to complete the How-to.

relate usage policy where applicable

Type  
 Indicat  
 Headli  
 Succin  
 attract

## Description

## Composition

## Did you know? + Behavior

Areas within the library can also use "Did you know?" and "FAQ" signs provide this, helping users understand which the library is organized.

### Did You Know?:

#### Did you know?

Fiction is organized by author's last name.  
 Non-fiction is organized by location (call) numbers.

*Ask a Librarian for more info*

### Frequently Asked Questions:

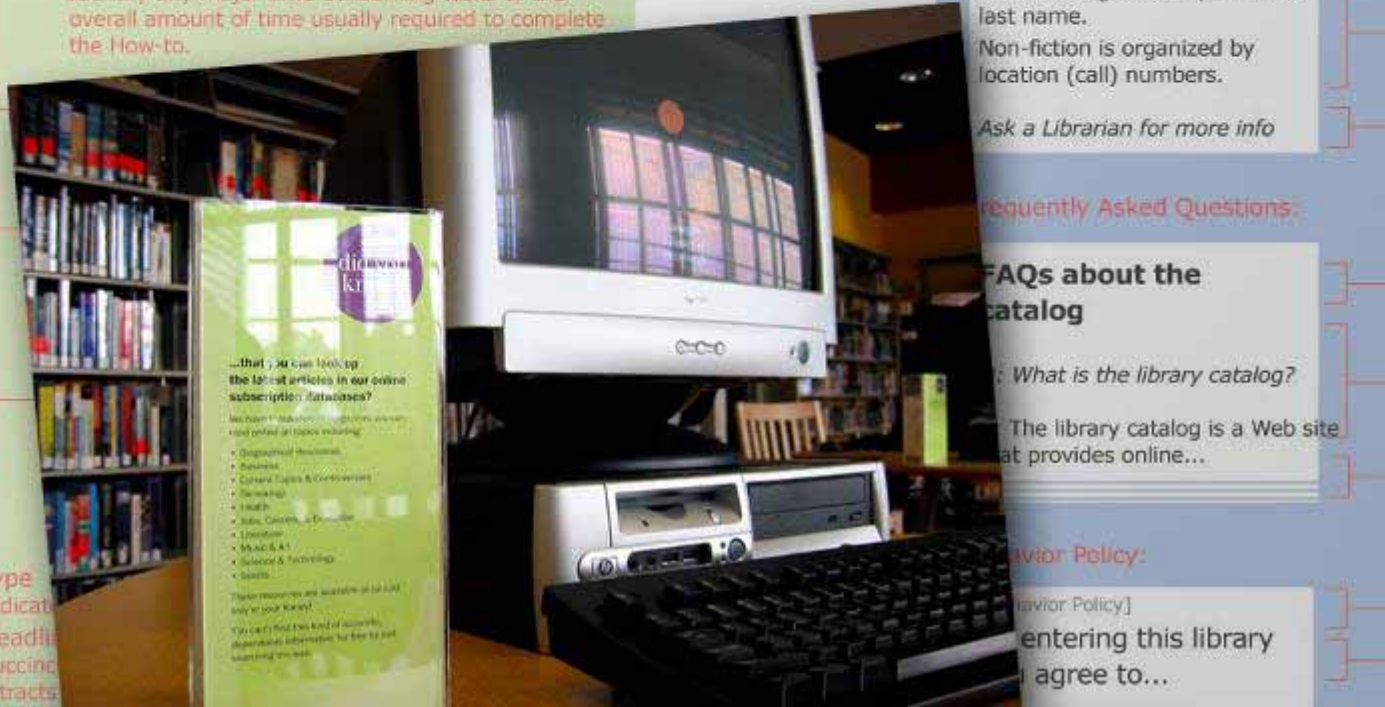
#### FAQs about the catalog

*What is the library catalog?*

The library catalog is a Web site that provides online...

### Behavior Policy:

Behavior Policy]  
 entering this library  
 I agree to...



# Connect to hidden or relevant information



University  
schools  
cater interests

**Start Points**

Semi-digital connection (random interactions)

Related connection (can be bi-directional)

**Actions**

- Ask a Librarian
- Find a Book
- Browse
- Customer Service
- Get Checked Out
- Return

Also understanding what a user does to mention it, users need to determine if they can get from "where they are" to "where they want to be" to take advantage of the connection. Often a user will be surprised in a given activity or resource that it is also eligible to use [ACHT] some functions should be related to the user's distance from their starting point as they can have not connections that don't bypass them and consider connections that are close enough to have some. Sometimes a user may want to know about end points that are further away but closer to their goal to either drop-off point

**End Points**

End points have three major types of Sponsorship:

- Sponsored by the library
- Sponsored by a third party (e.g. regional history societies or publishers) with requests
- Sponsored by the community (e.g. Anne Brink Library at CMU)

**Resources as end points**  
Resources are items, devices, locations, or people that provide unique information, services, or capabilities, related to a library, via an external partner or via an associated external host.

**Events & Activities as end points**  
Events & Activities involve the participation of people at a library, an external partner, or an associated external host. Events can be isolated occurrences, part of a short-term series, or part of an ongoing cycle. Events & Activities generally fit into three main categories: Teach and Learn, Inform and Entertain, Contribute and Create.

**Permanence/Timing**

	Always	Today	This week	This month
Introduction of mobile technology				
Team that created this report				
Introduction of mobile technology				
Mobile Festival Display				
How about providing it				
Scrum/Agile/Lean				

Handwritten notes in red ink on the diagram include: "Team that created this report" (circled), "Introduction of mobile technology" (circled), "Mobile Festival Display" (circled), and "How about providing it" (circled).

welcome

Fiction Writer  
**TORIAS WOLFF**  
OCTOBER 11TH

**The DRUE HEINZ LECTURES**

Today's most important and influential authors, innovators, and commentators come to Carnegie Library.

Hosted at Pittsburgh's Arts & Library Office, West Branch.

- Introduction to Windows at 10:30 am on Saturday PC Center - Main
- Baby Lap-sit at 11:00 am on Saturday Children's - Main
- Baby Lap-sit at 10:15 am on Monday Children's - Main

coming up

# Testing



# Close the loop by testing



**Lynn: Non-User Mom**



Age: 38 years

Education/Profession: Office Manager

Family: Three kids (one seven-year-old, two teenagers)

Library Use: Uses the Homestead Branch once in a year; has not been to the Oakland library in more than 10 years.

Goals:

- Learn about activities for her kids
- Sign up for an activity
- Find one or more books of interest
- Get a library card
- Check out

**Sandy: User Mom**



Age: 40 years old

Education/Profession: High school graduate; attended Art Institute; hasn't been employed for the past seven years

Family: One child (daughter, age seven)

Library Use: Occasionally uses other libraries, but has not been to Main

Goals:

- Return books and DVDs
- Find and use the Career Center
- Browse for fiction books
- Check out

**Marian: Non-User (Older) Adult**



Age: 60 years old

Education/Profession: High school graduate, no college; employed in a government agency

Family: Lives with her husband (kids have moved away)

Library Use: Uses the Carrick branch, visited Main prior to renovation

Goals:

- Browse New and Featured
- Find a specific book and movie
- Locate a book discussion
- Check out

**Jill: Non-User Searcher**



Age: 30 years old

Education/Profession: Graduate Student

Family: Lives with her boyfriend

Library Use: Frequent library user, visited Main prior to renovation; Legally blind, does not use a screen reader (problem is visual-field-related, not acuity)

Goals:

- Find the necessary material (multiple media format)
- Browse the catalog and stack
- Navigate between the catalog, her reading corner, and the stacks

**Sophie: User Teen**



Age: 15 years old

Education/Profession: High school student interested in politics, French, France, sewing

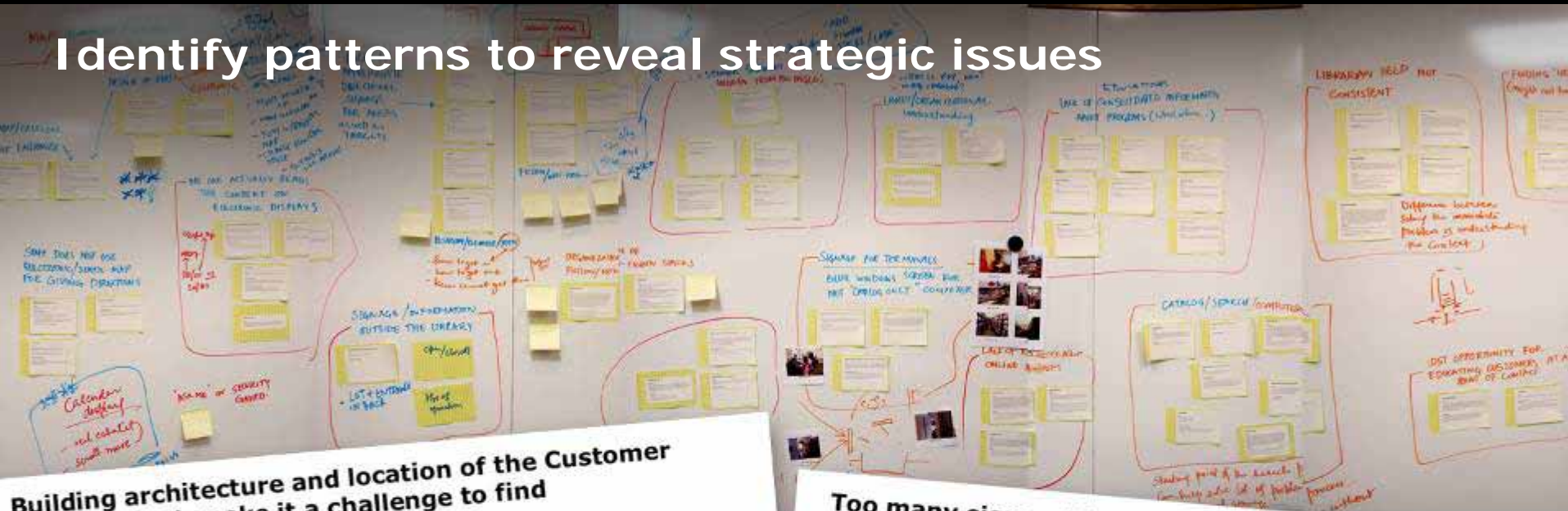
Family: Lives with her parents

Library Use: Uses the library for homework research, hanging out before mom picks her up

Goals:

- Check email
- Chat with friends
- Find French books, CDs, and DVDs
- Find current, popular music and video

# Identify patterns to reveal strategic issues



## Building architecture and location of the Customer Services desk make it a challenge to find



**Not easy to locate from entry**  
 This directional sign to the Customer Services is lost in space because of reasons outlined previously. Moreover, there is no visual cue that Customer Services Desk is just around the corner (as has been attempted with the "return" signs).



**Not easy to locate from inside**  
 Customers are unable to locate or identify the customer services desk, even when they are looking directly at it (as seen in this picture). The columns in this space do not allow for a good viewing angle. Lack of identification signage does not help either.

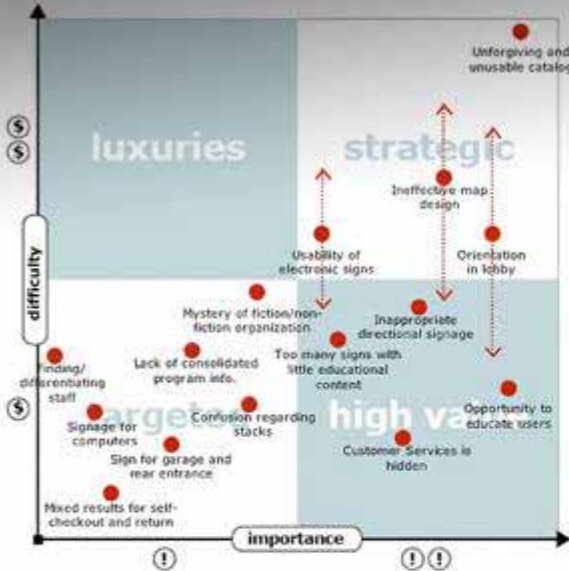
## Too many signs with too little educational content



**Findings**  
 There is an over-abundance of marketing signs (i.e., discover-more, don't-miss-this) at the expense of educational signs (i.e., did-you-know, how-to). Our tests and observations found no educational signs. This is true for both static and dynamic signage.

- Recommendations**
- Do not add signs. Instead, replace existing signs with educational signs.
  - Customers could use educational help with:
  - How to renew
  - How to reserve
  - Did you know about our online databases?

# Next steps...



- Issues organized by anticipated return on investment (ROI):**
1. Unforgiving and troublesome catalog
  2. Opportunity to educate users
  3. Orientation in lobby
  4. Ineffective map design
  5. Inappropriate directional signage
  6. Customer Services is hidden
  7. Too many signs with little educational content
  8. Usability of electronic signs
  9. Mystery of fiction/non-fiction organization
  10. Confusion regarding stacks
  11. Lack of consolidated program info.
  12. Sign for garage and rear entrance
  13. Mixed results for self-checkout and return
  14. Signage for computers
  15. Finding/differentiating staff

## Provide direction at decision making points and reinforce it with identification at the target area



**Findings**  
 This sign for "Restrooms" and "Children's" is too far to read as a direction sign. It placed near the restroom itself.  
 The font, size, and color add to it non-readability.

**Recommendations**

- Locate direction signs at the point of decision, rather than near the target area. And locate identification sign near the target area itself as a positive reinforcement for the customers.
- Call out the most sought-after locations: Restrooms, Children's, Elevator, Return, Customer Services

## Change the mix of trivial and non-trivial information



**Recommendation**  
 Change the content ratios. Continue to display marketing information, but limit it to 20% (both screen time and real estate). Boost educational information to 80%.

## Revise and test alternative map designs



- Recommendations**  
 Address issues such as:
- 2D vs. 3D view
  - Highlight circulation paths and key landmarks.
  - Static vs. changing information (essential information should never be animated unless the user can be given more control)
  - Better organizational dandy. (For digital maps, use animation to explain the organization scheme.)
  - Paper (near catalogs and librarians): Make these more like a worksheet that can be annotated. These will help to bridge the gap from catalog to the stacks.
  - Paper (take-away): Put these next to the glass



**Results so far?**

**"I am going to hug the librarian. If I could hug the whole library, I would."**

*7-year old Monica Salime of Beaver*



### Tracking the Impact of Capital Improvements

With recent Capital Improvements, Teens & Children's circulation continues to grow. This chart explores **Juvenile/Young Adult Circulation** growth. Check inside for more information regarding overall circulation increases at these locations.

Juvenile/Young Adult Circulation



**Homewood\***      **Brookline\***      **Hazelwood\***

\*See graph (page 2) for measurement periods outlined.

Orange = Print Circulation Only      Green = Overall Circulation

### Meaningful Results: Overall Circulation Increases

Customers are checking out more and more materials from these newly revitalized libraries.

Overall Circulation



**Homewood**

Closed for Renovation in 2003  
Jan - Sept. 2003 vs.  
Jan - Sept. 2004

**Brookline**

Reopened Feb. 2004  
Feb. - Sept. 2003 & Sept. - Sept. 2003  
vs. Feb. - Sept. 2004

**Hazelwood**

New Location 2004  
April - Sept. 2003  
vs. April - Sept. 2004

Orange = Print Circulation Only

Green = Overall Circulation



## Results so far?

Brookline STAFF

We would Love your Comments About our  
New Library

Good work

It's awesome

look's great!

This is the coolest thing I have every  
seen ever in a library!, ~~Danny~~ S  
Also the chairs seats & computers are  
really nice & comfy, (Danny) S.

It's hard to believe it's the same bldg.  
Thanks to all who made it possible.  
It's an asset to our community.

Good Job!!  
go,



Let's  
take a  
break



Part two:  
“Design for experience” tools





## Our tools so far

- Rich persona, documenting the variety of journeys people have across many systems and interactions
- Annotated point-of-view photographs
- Breakpoint analysis
- Models that map information needs to a model of people's experience

Thanks, Aradhana!



Tools for integrating understanding  
of many dimensions of experience

## VasSol CANVAS

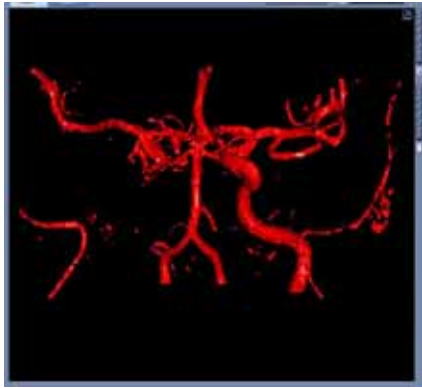
Alignment wall

Task annotation sheets

Interactions between roles

Sticky storm

*A detailed description of this project was  
presented at DUX 2003. It can be downloaded at  
[www.marcrettig.com/writings/DUX\\_Herzfeldt\\_Rettig.pdf](http://www.marcrettig.com/writings/DUX_Herzfeldt_Rettig.pdf)*



**CANVAS**  
measures  
blood flow  
without invasive  
procedures.

## **Goal**

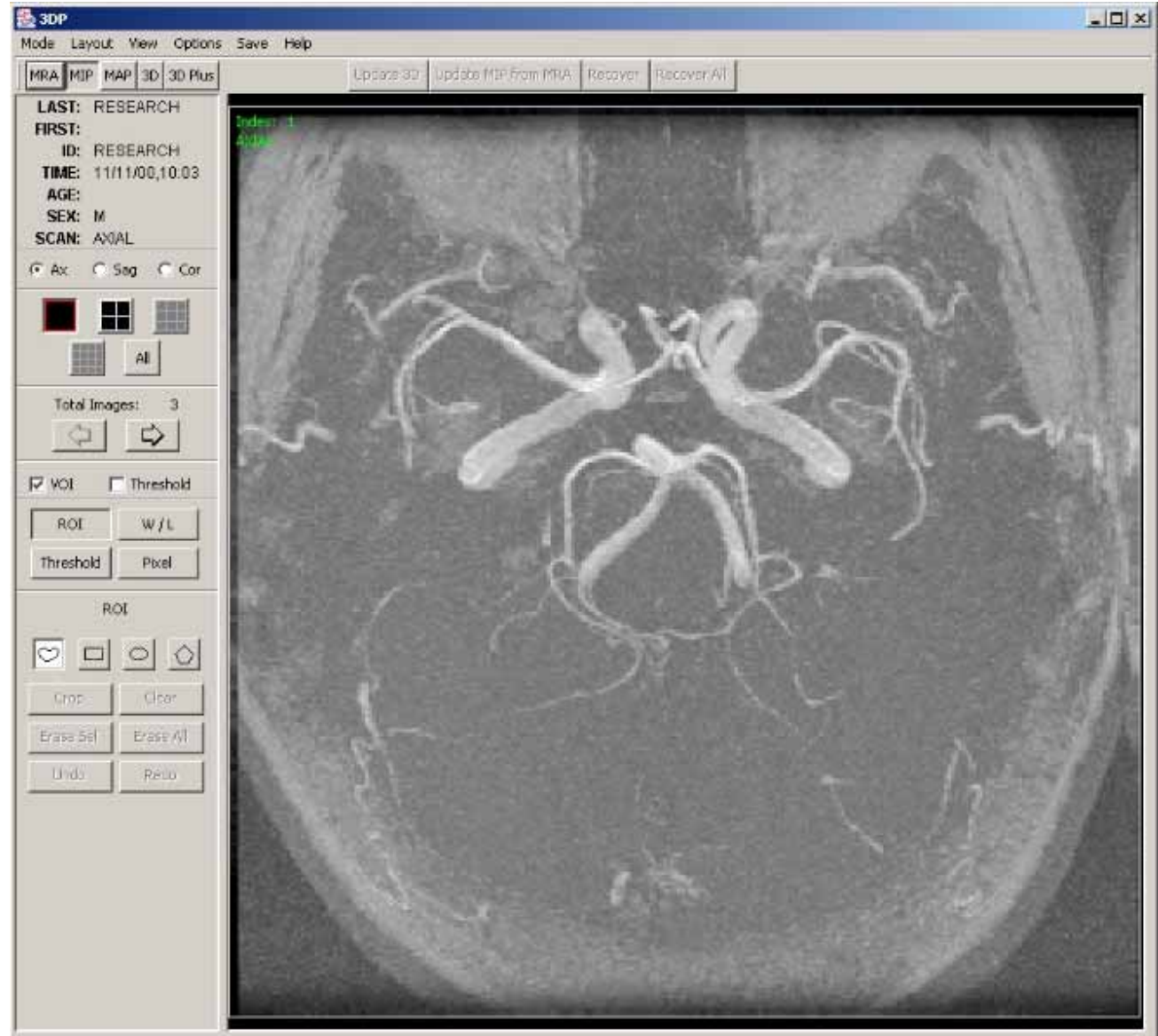
Create a commercially viable product based on a government-approved science & engineering prototype

## **Problems**

- Scientifically amazing but unusable prototype
- No design awareness, pure tech culture
- Ease of learning and error-free use were critical to the business model

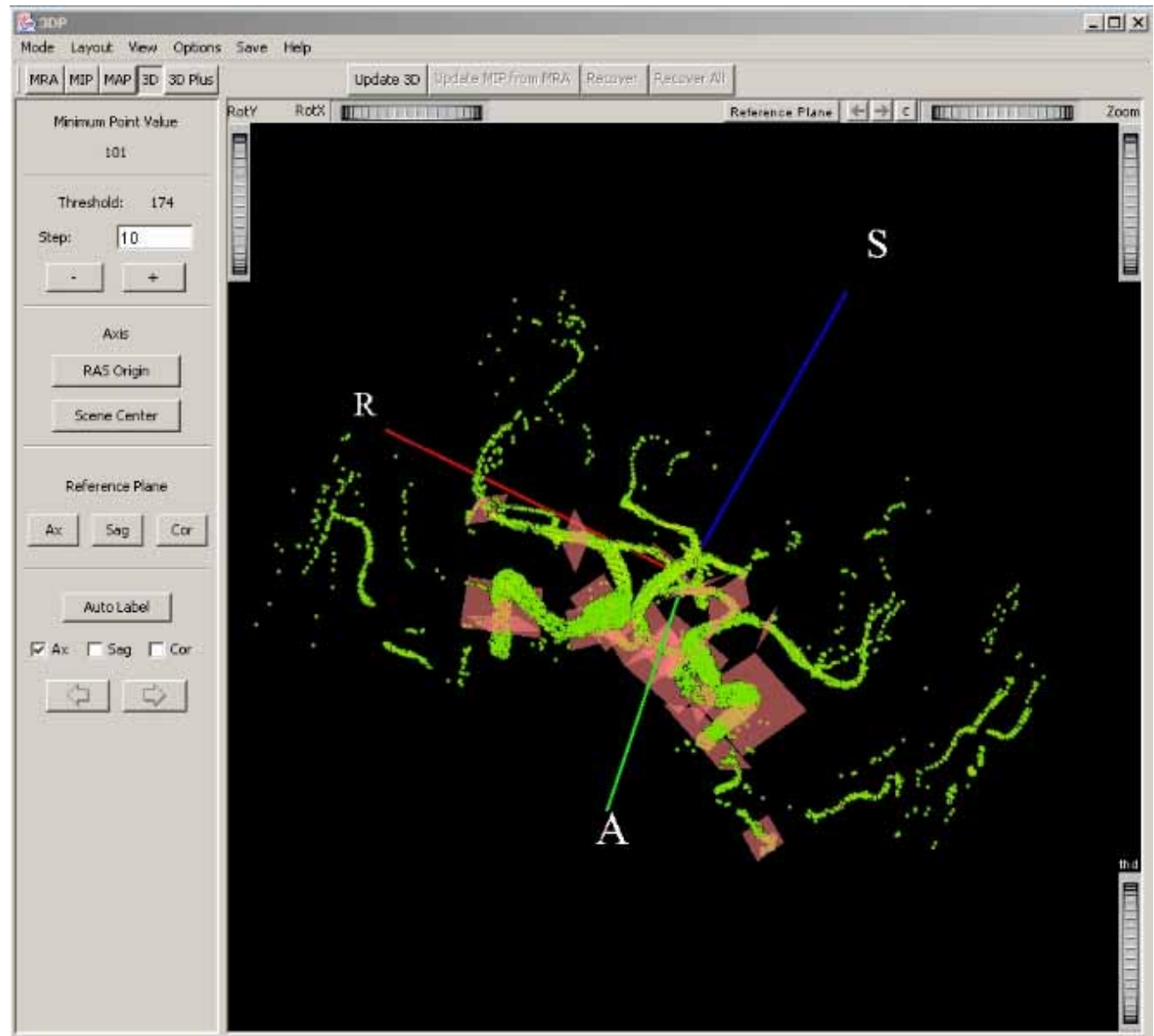
# Task complexity, shown in the working prototype

A screen from the working product prototype, before redesign.

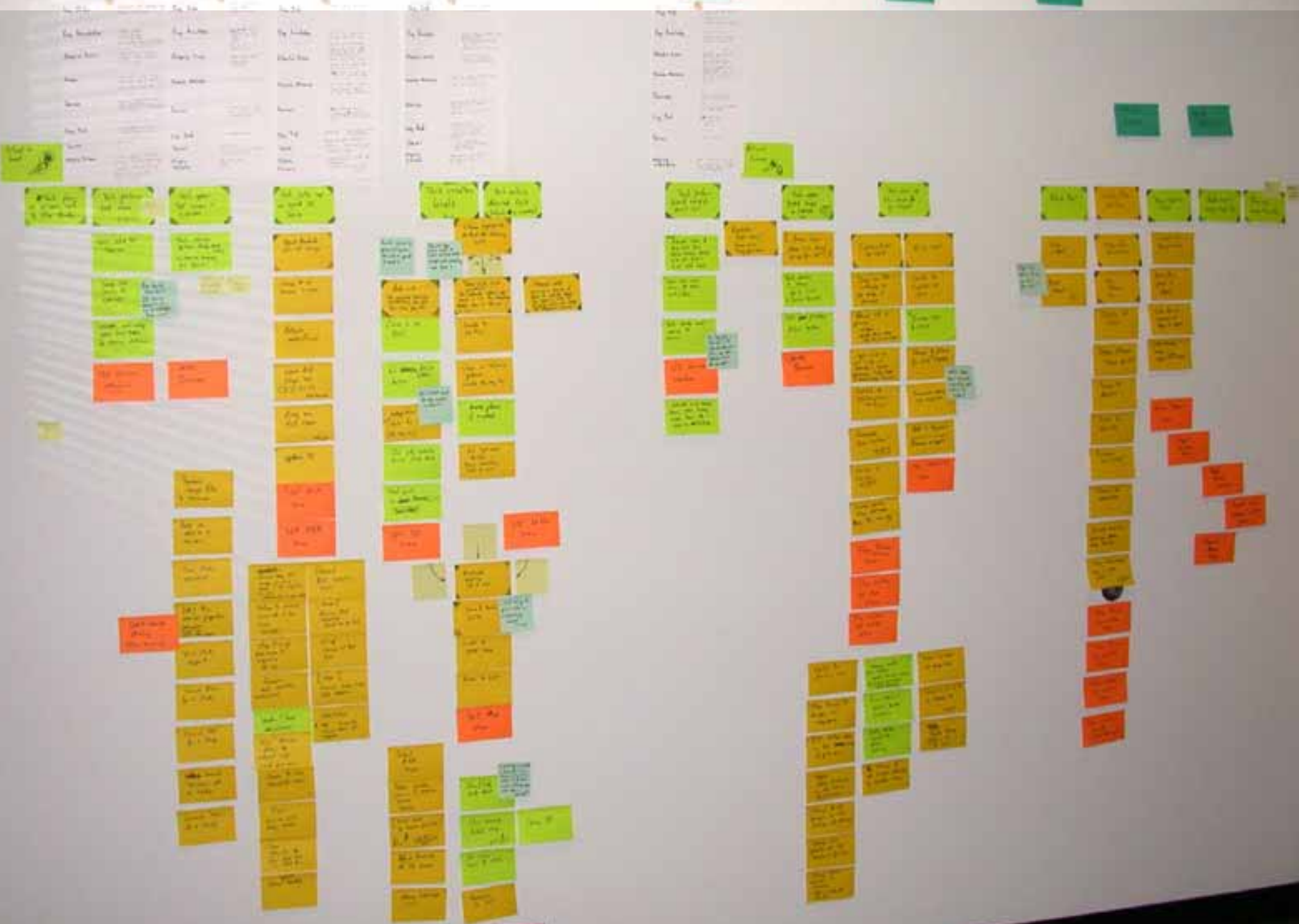


# Technology + human anatomy

A screen from the working product prototype, before redesign.

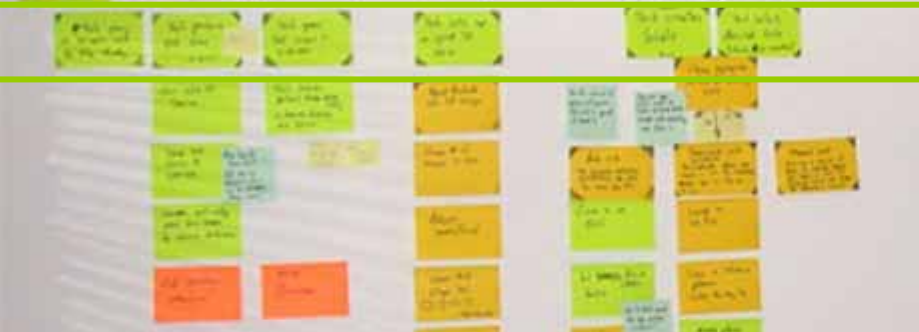


# The "alignment wall"

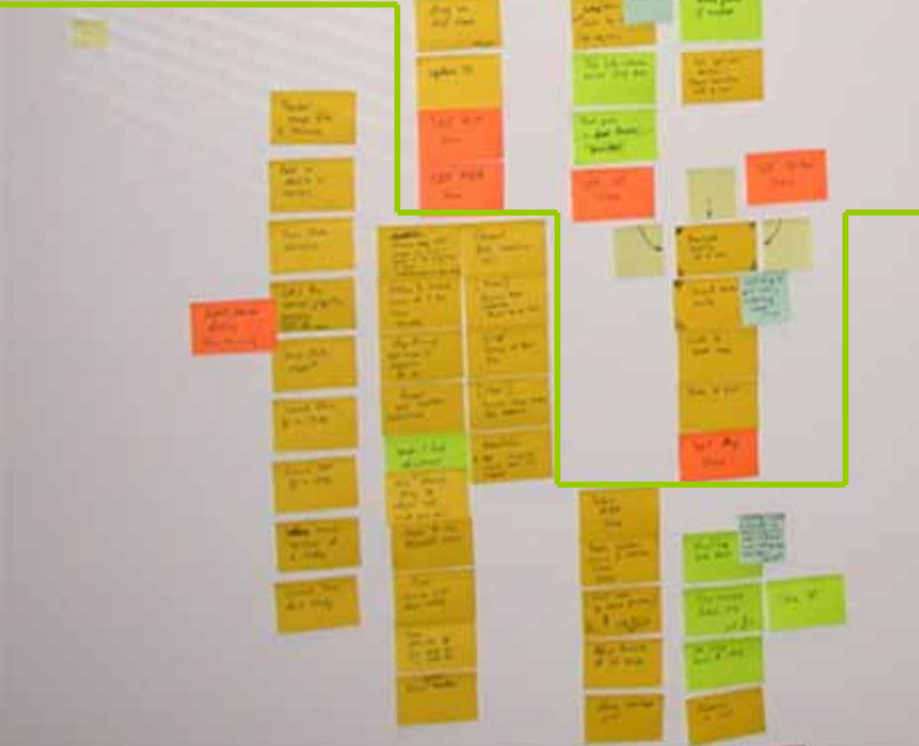




sequence of activities



notes about each task



tasks

actions / steps /

views or screens



additional functionality  
(unnecessary!)

# Task sheets

Visual / Region of Interest

Req. Info

Req. Knowledge

- How to set window/level to get good 3D image
- How to use selection tool
- Meaning of images 
- How to use  on 3D image plane

Potential Errors

- Bad window/level setting
- Forget to hit 'APPLY' get 3D of whole image
- ~~Image~~ proceed to next step with an unusable image

Success Measures

- 3D image appears satisfactory
- Image process satisfactory in next step - label creation

Barriers

- ~~Bad~~ untrained eye
- inexperience in process - use of 3D for creating good cuts

Cog. Task

- iterative? - adjust, generate, view, reset, try again
- (harder for smaller vessels)

Terms

- reflection - "So the good enough?"
- threshold, etc. 40%

Ongoing Concerns

- speed - patient is on the table
- Confidence
- low error rates / low # of iterations

For each step of each task,  
we captured:

required information

required knowledge or skills

people, relationships

measures of success

barriers to success

terminology

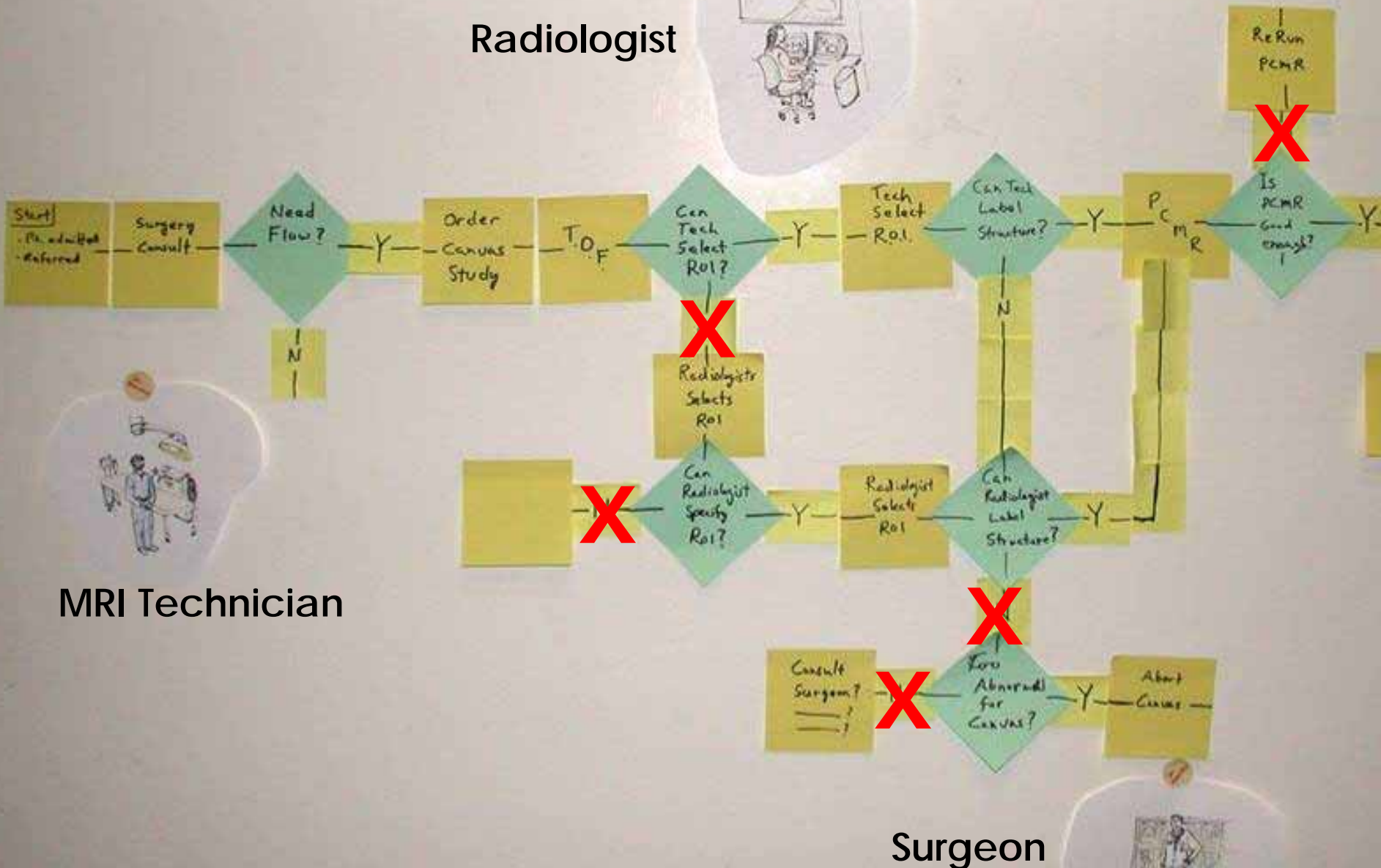
mental task

underlying concerns



# Working to understand interaction between roles

Radiologist

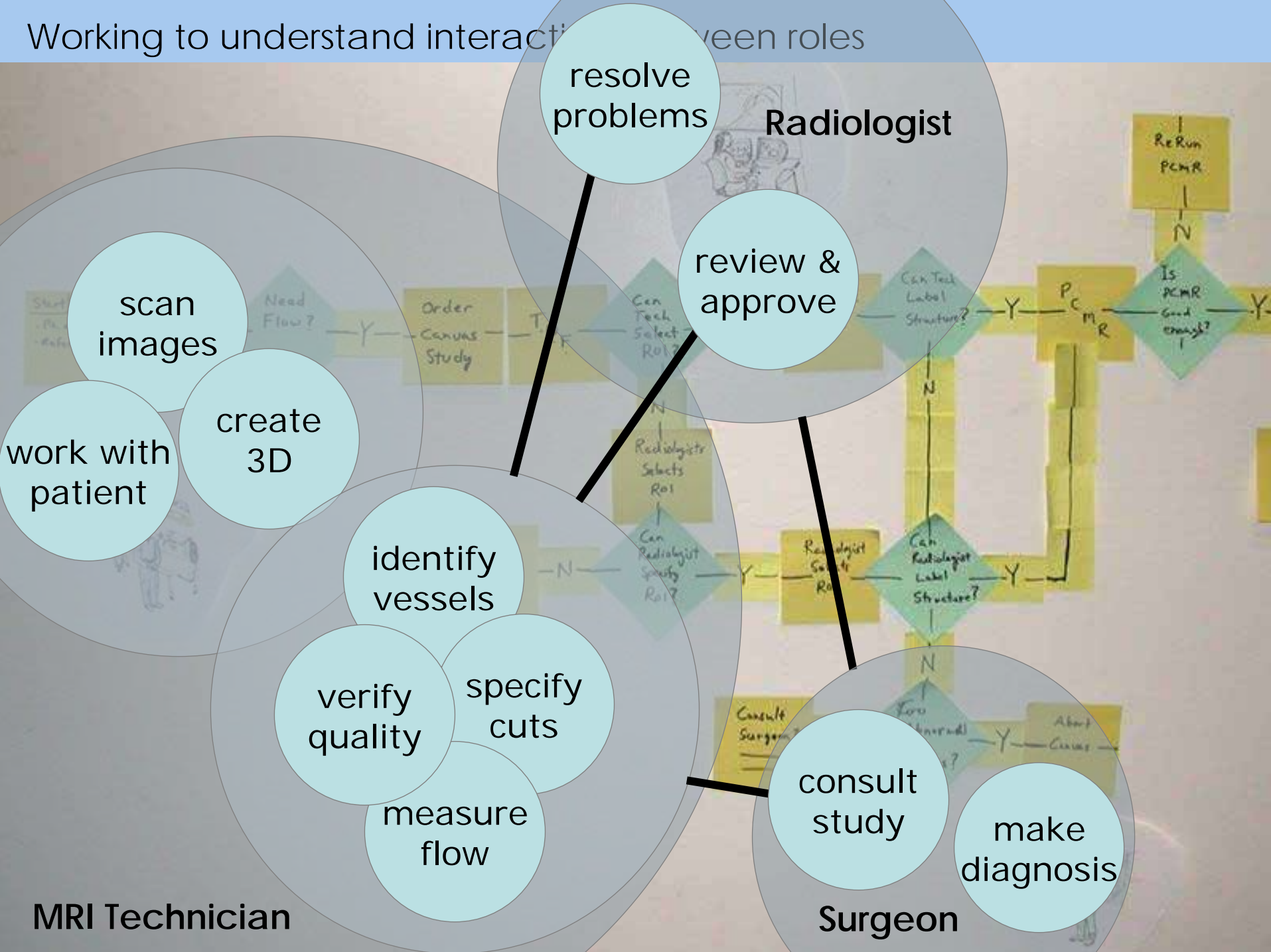


MRI Technician

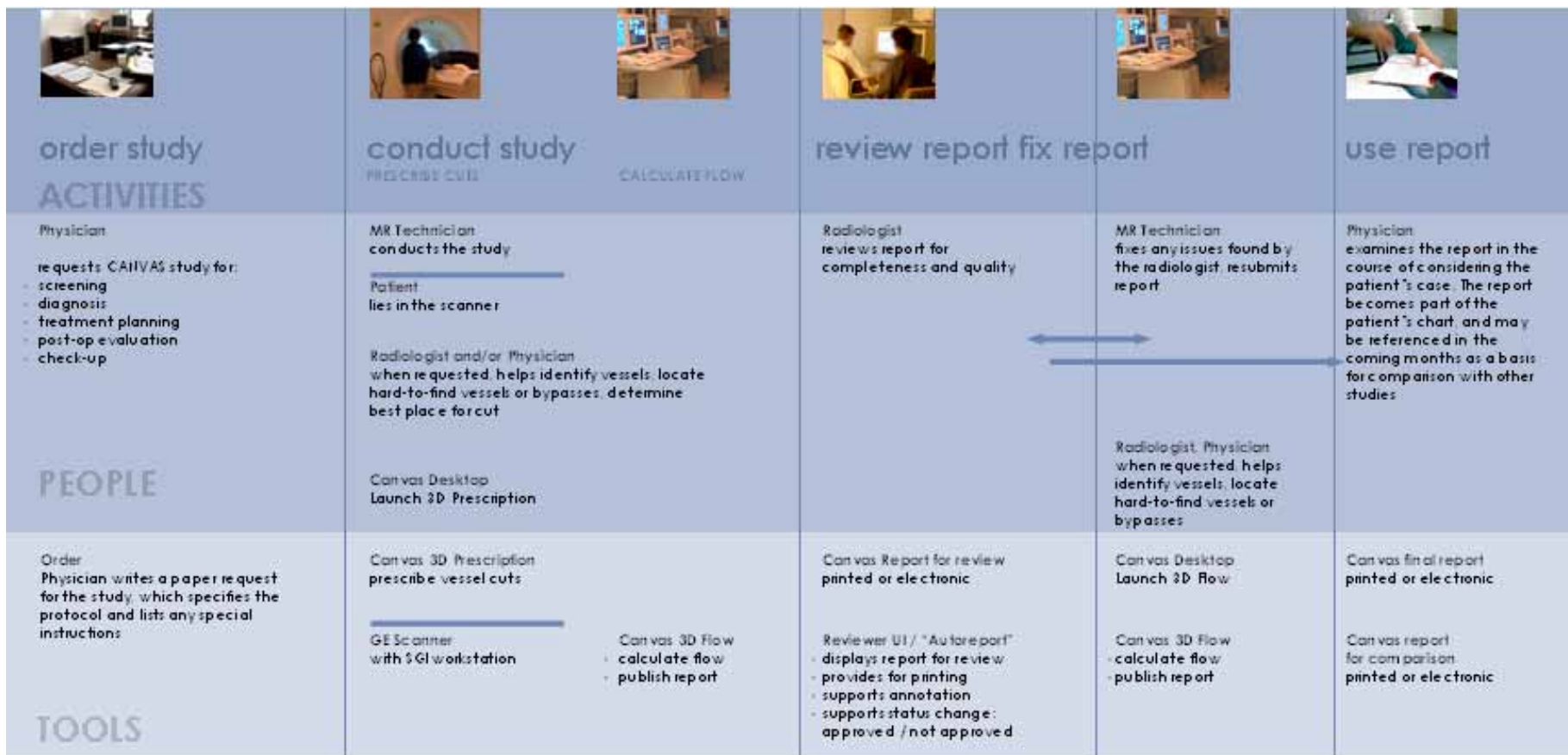
Surgeon



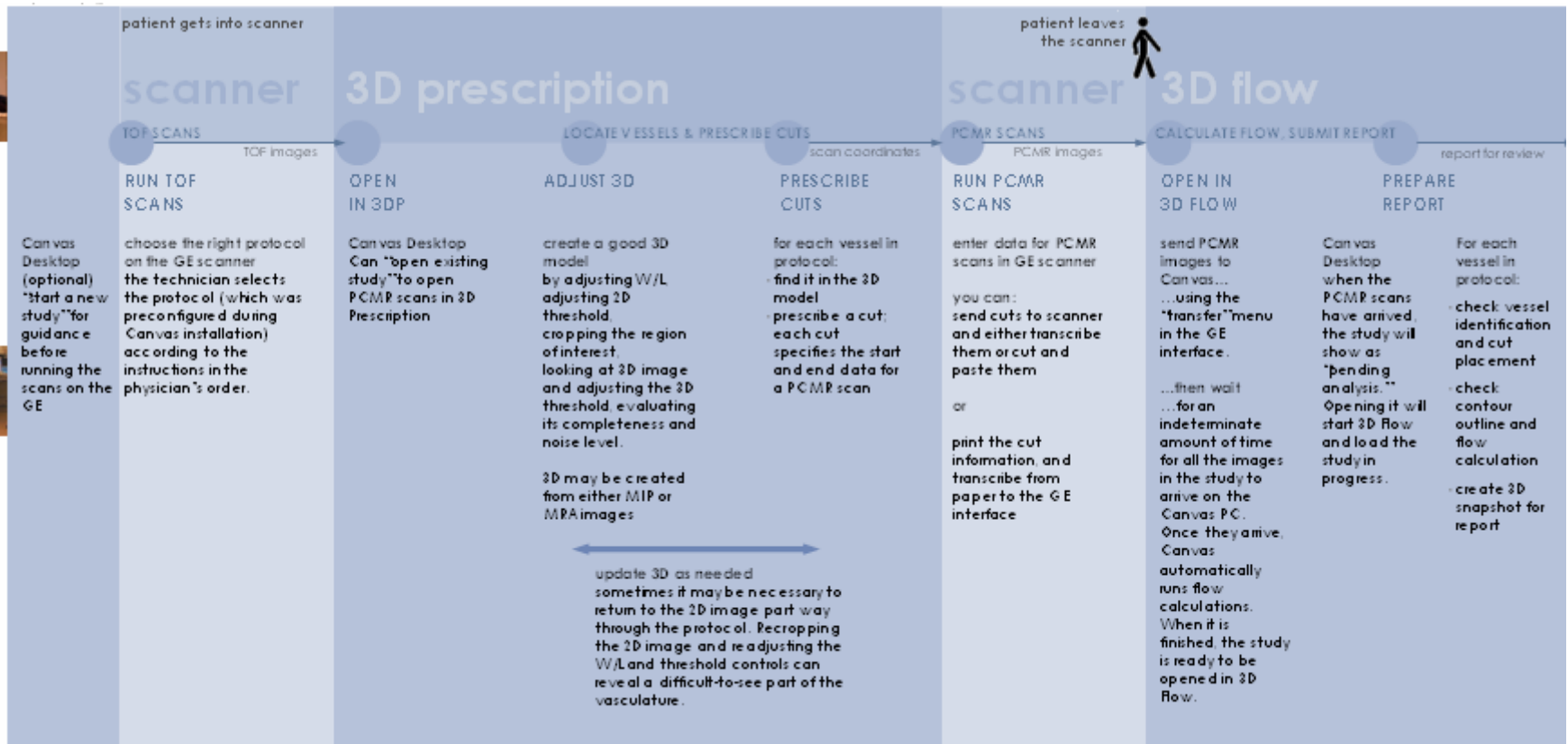
# Working to understand interactions between roles



# Activities, people, tools



# Critical task in more detail



# "Sticky-storming" the first mockup of the new design

2  
ToF scans arrive @ CANVAS machine

See 2b for case when scans don't arrive.

Alert:  
New series available  
Use it?  
(Yes) (No)

Patient Info

CANVAS process steps

Step 1: ToF is checked off ?

Step 2: Identify ~~desired~~ vessel cuts A. Gen 30

Image level controls

Axial (see all three?) MIP Image (Is this the right one?)

o Ax  
o Sag  
o Cor  
o All

threshold controls

ROI Controls which? (?)

crop - what else? undo/reset? deselect uncrop? (?)

Reset level & threshold

Control to see 3D

Pixel Controls? why?

- Adjust w/l until happy.
- ~~Adjust~~ Select Rot, crop (or whichever)
- Adjust ~~threshold~~ threshold.
- Select 3D (3)

Need both w/l & threshold?

Should threshold always be on, or should you have to turn it on?

important crop?  
do we do No that?  
part of the story, or just get of skull/surround

Pat Williams  
MRI Technician

## in process

start & analyze new studies

### incoming studies

Williams, Sophie	Neck	○
Zimmer, Don	Head Left	○

### ready for processing

Williams, Sophie	Head
Antonio, Drew	PCMR
Antonio, Laura	PCMR
Olechowski, Alicia	PCMR

open in 3D Flow

open in 3DP

## pending

revise or approve studies

### pending correction

Antonio, Laura	6/23/03
Murphy, Joseph	6/23/03

### pending approval

Antonio, Laura	6/23/03
Murphy, Joseph	6/23/03

open in 3D Flow

preview report

## completed

browse or print reports

### most recently approved studies

Antonio, Laura	6/23/03
Antonio, Drew	6/23/03
Billingham, Thurston	6/22/03
Delwood, Delmar	6/22/03
Murphy, Joseph	6/22/03
Antonio, Laura	6/21/03
Murphy, Joseph	6/20/03
Murphy, Joseph	6/18/03
Westwood, Red	6/18/03
Samson, Delilah	6/17/03

send

print

browse



Patient Name, Jr.  
004570246  
Standard protocol

head neck

3D home stereo

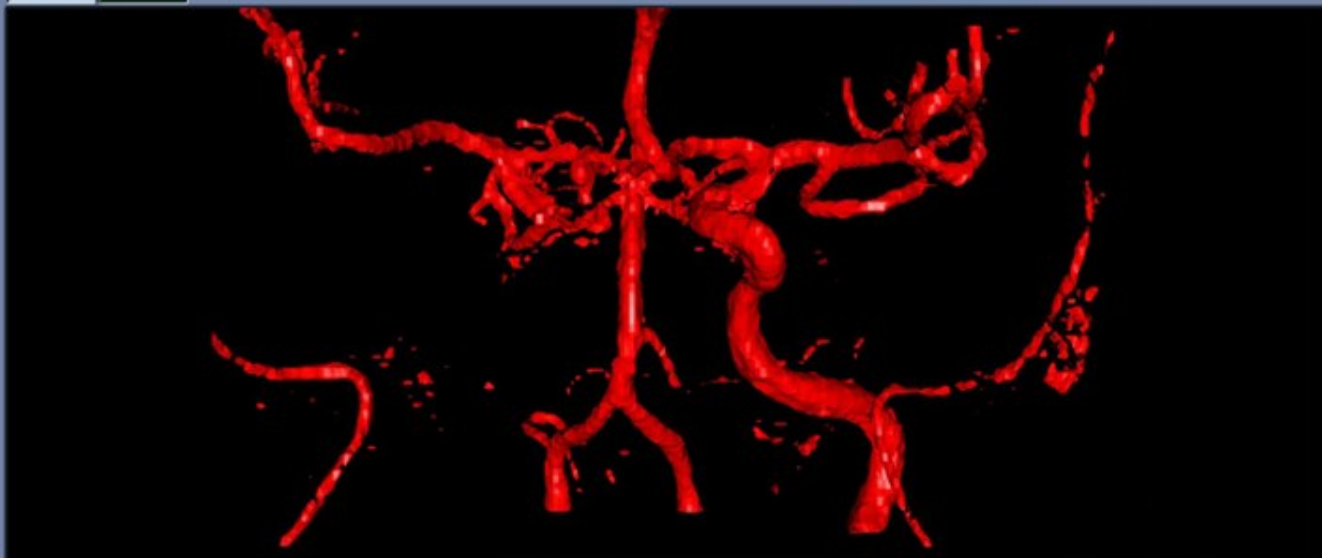
# LMCA

add a note?

- not circular
- wavelength irregular
- velocity aliasing
- other

confirm ID

unable to confirm



ID Contour

### head left

RMCA

**LMCA**

RPCA  -N

LPCA

RACA -N

LACA

BA

### neck

RCCA

LCCA

RVA

LVA

RICA

LICA

### non protocol

[Add vessel]

BYPASS

selected vessel:

rename

copy to...

preview report

submit study

### issues

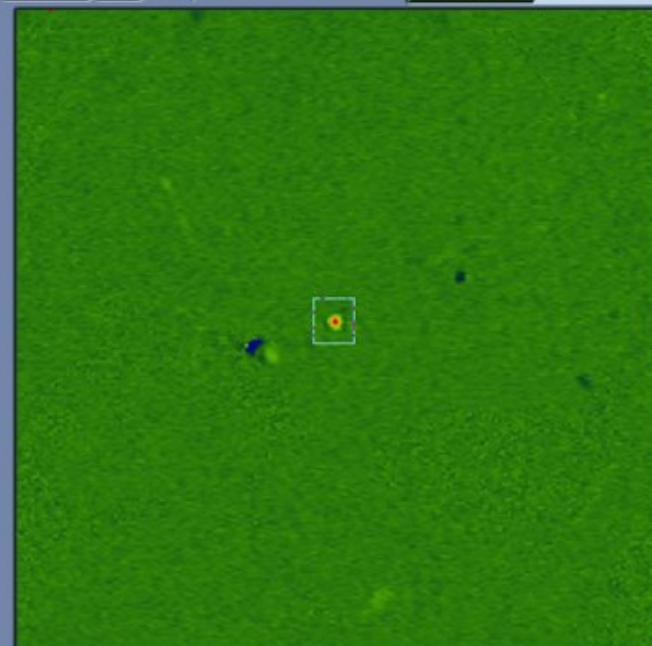
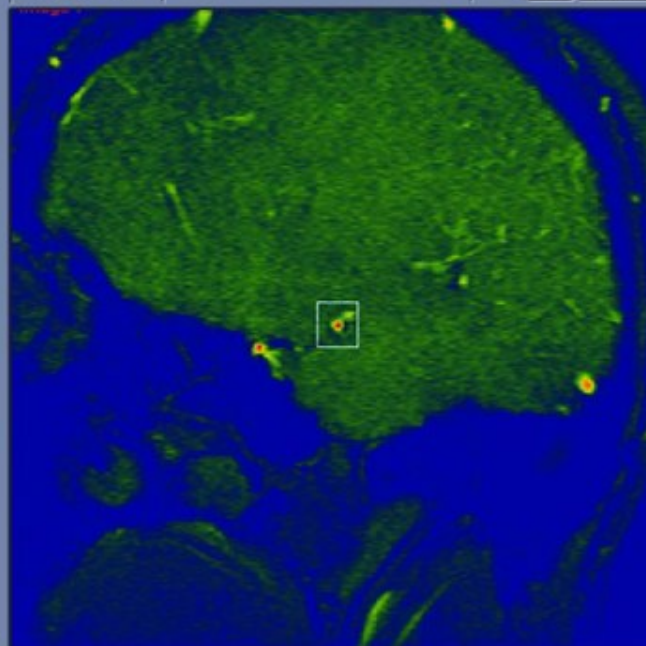
3D Flow:  
contour 75% circular,  
>85% recommended  
[explain](#)

magnitude

Q captions rest ROI P

phase

velocity





# LMCA

3D

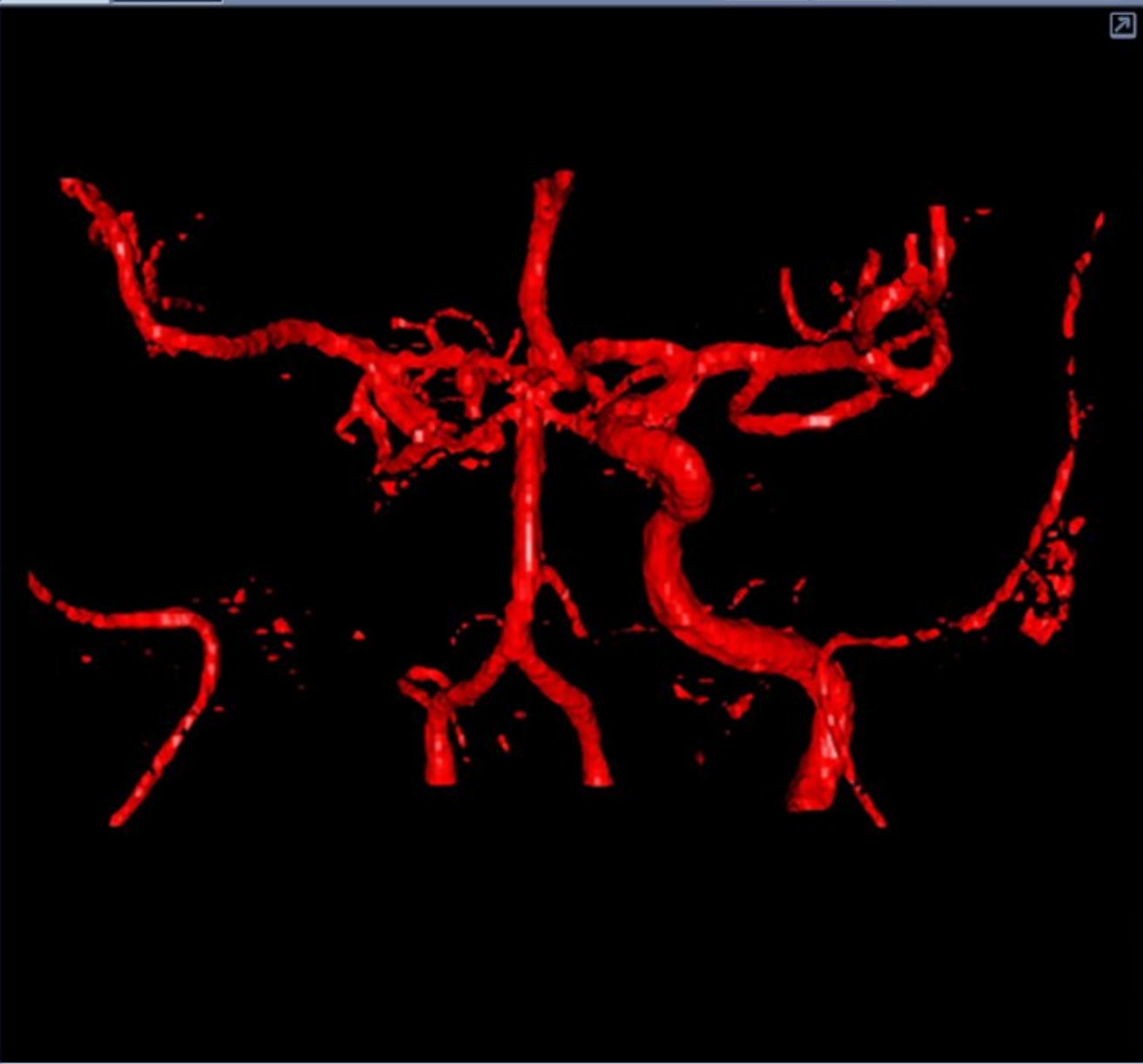
- map
- 3D**
- baseline
- waveforms
- notes

- head
- neck**

- 3D home
- stereo
- 
- 

Patient Name, Jr.  
004570246  
Standard protocol

- head left
- RMCA
- LMCA**
- RPCA  *N*
- LPCA
- RACA
- LACA
- BA
- neck
- RCCA
- LCCA
- RVA
- LVA
- RICA
- LICA
- non protocol
- [Add vessel]
- BYPASS



print report



Tools for integrating understanding  
of many dimensions of experience

# Appliance manufacturer

Bucket-analysis spreadsheet

Learning model

Persona based on “dimensions of  
significant difference”

# Bucket-analysis spreadsheet

“Buckets:” categories of interest, themes, actions,... →

← Research participants

The image shows a large, dense spreadsheet grid representing bucket analysis data. The grid is oriented vertically, with 'Research participants' on the left and 'Buckets' on the top. A central yellow box highlights the text 'Field data: quotes, observations, actions'. The grid contains numerous small text entries, likely representing individual observations or quotes, organized into columns and rows. The text is too small to read clearly, but the overall structure is a complex matrix of data points.

# Zooming in...

	Estimated Time	How did you learn	Capacity	Tray	Products	HE
<b>Debora</b>	22:04 - I can come in here, and I love that it tells me how many minutes you have left.	21:00 -- read her manual. A "stickler" for that. Always reads appliance manuals before using them. Wants to know what it will do, and worried she might do something wrong. The washer "is pretty self-explanatory." Looked up whitest whites, because she wanted to see what it did extra to get things white.	24:40 -- I usually fill it about half to three quarters the height of the washing machine [i.e., to the top of the drum]. When I first started washing clothes, I would fill it too full, and some clothes wouldn't even get wet. So I learned over the years. I fill my top load same as this, half to 3/4.  51:25 -- this is a little bit smaller than my 20-year old top load. I wish it had just a bit more capacity.	22:50 -- I miss rinsing my cup out! Before I would always run a little water before putting in detergent and fabric softener. So there was water in there, and I could rinse my detergent cup out. I miss rinsing my cup out.  There have been a couple of times when I started the machine and forgot to put detergent in.  26:00 -- fills with detergent, and again, "I want to rinse my cup out!" every four or five loads I take the cup to the bathroom and rinse it out.  26:35 -- clip of her filling with bleach. Points how how it would be hard to lift big bleach bottle and pour if you were shorter than her.  You have to be careful when you close the tray, or you'll splash products out.  27:09 -- I don't have problem with tray. But I worry that my 14 year old would snap it off if he was doing laundry, because it's just plastic.	25:40 -- Uses All Free & Clear detergent. Son has allergies. She would "be in big trouble" if she didn't use free and clear.  26:10 Uses Snuggle fabric softener. 36:20 --Only thing she can use with her son's allergies. Doesn't use it on towels.  Occasionally uses clorox 2, has stain pre-treatment products.	37:0 havi Was Usin hap  I'm to u reac wou recc som mac
<b>Beth</b>	20:20 -- time left is a really cool feature. It's been accurate for the most part. I know how long a cycle will take, so I can tell if I have time to do something else before it's done. I've got an hour to run to the store. A very cool feature.	22:30 -- I had the most common cycles on my other washer, or something like them. Mosly I do laundry just to do laundry. I don't need a ton of fancy features. I read the manual, but I don't remember everything. I'm sure there are uses for some of these cycles, but I don't have the time.	1:40 -- Not as many loads with these as I used to do. I'm really happy with the capacity. Cuts down on my work a lot.  50:40 -- If I stick my hand in there and it feels a little tight -- touching the clothes and the top of the washer. that's	15:20 -- my favorite thing about this is that I can put my fabric softener and everything in right at the beginning, and it puts it in at the right time.  16:00 -- I don't use bleach. I'm afraid. I get stains out of white in the sink, with a little bit of bleach. I <i>have</i> bleach, but I don't think I've ever done a load that was all white.	55:10 -- I'm a Cheer girl, I only use Cheer. What I grew up with. Cheer makes a free & gentle, that's my favorite, but not HE yet.  Shout. Pre-treat stains.	52:4 dete recc is. C recc diffe  Dow line.



# The value of the bucket-analysis spreadsheet



**Yes, it takes time to populate. But then:**

Reading up and down columns quickly tells you everyone's story for a particular slice of the data.

Arranging columns together makes it easy to synthesize several categories as you read.

Reading across a row tells you a single person's whole story.

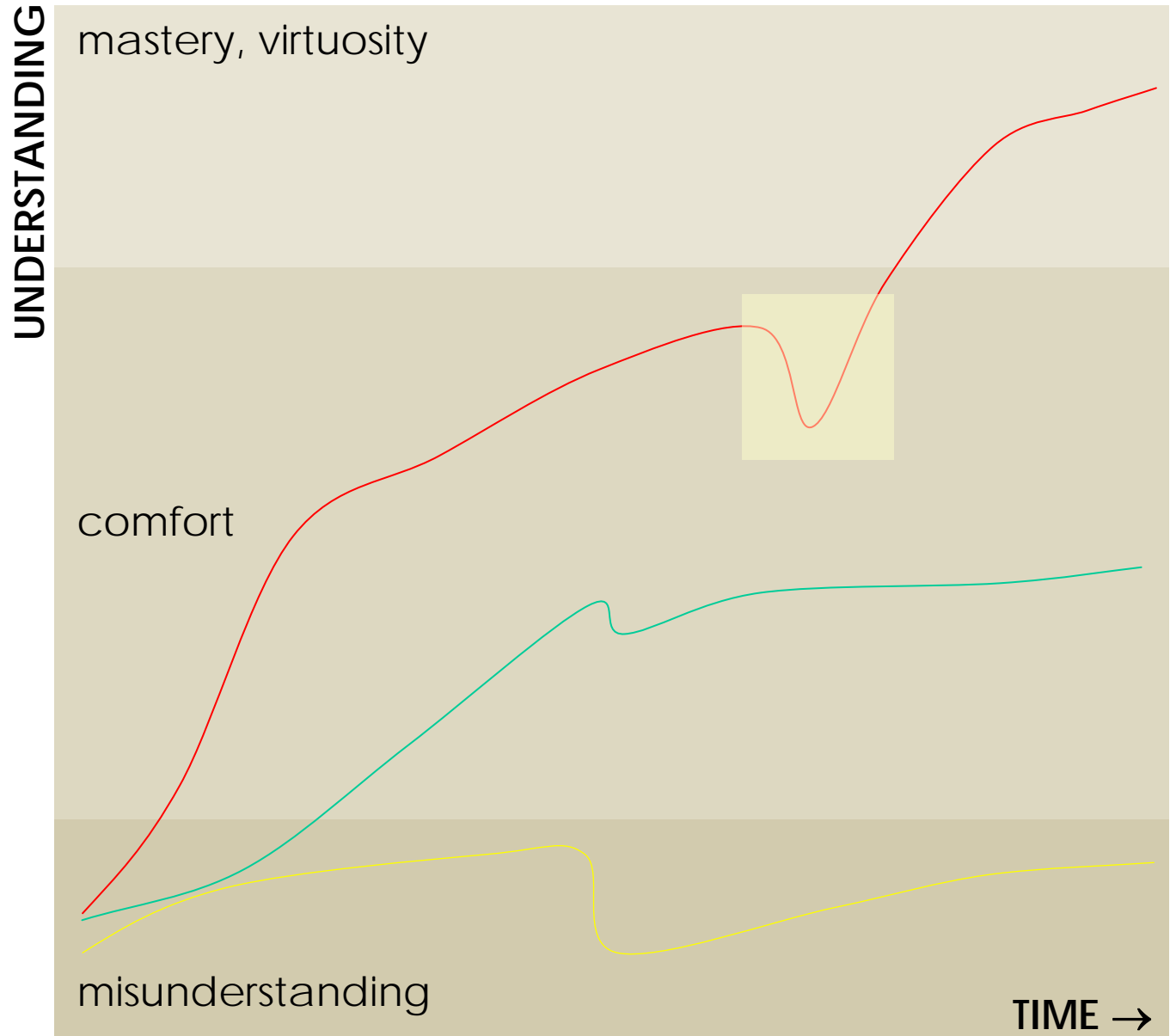
Arranging rows together helps you see commonalities and differences.

Tip: make a blank one of these prior to a prototype test, have observers capture directly into it.

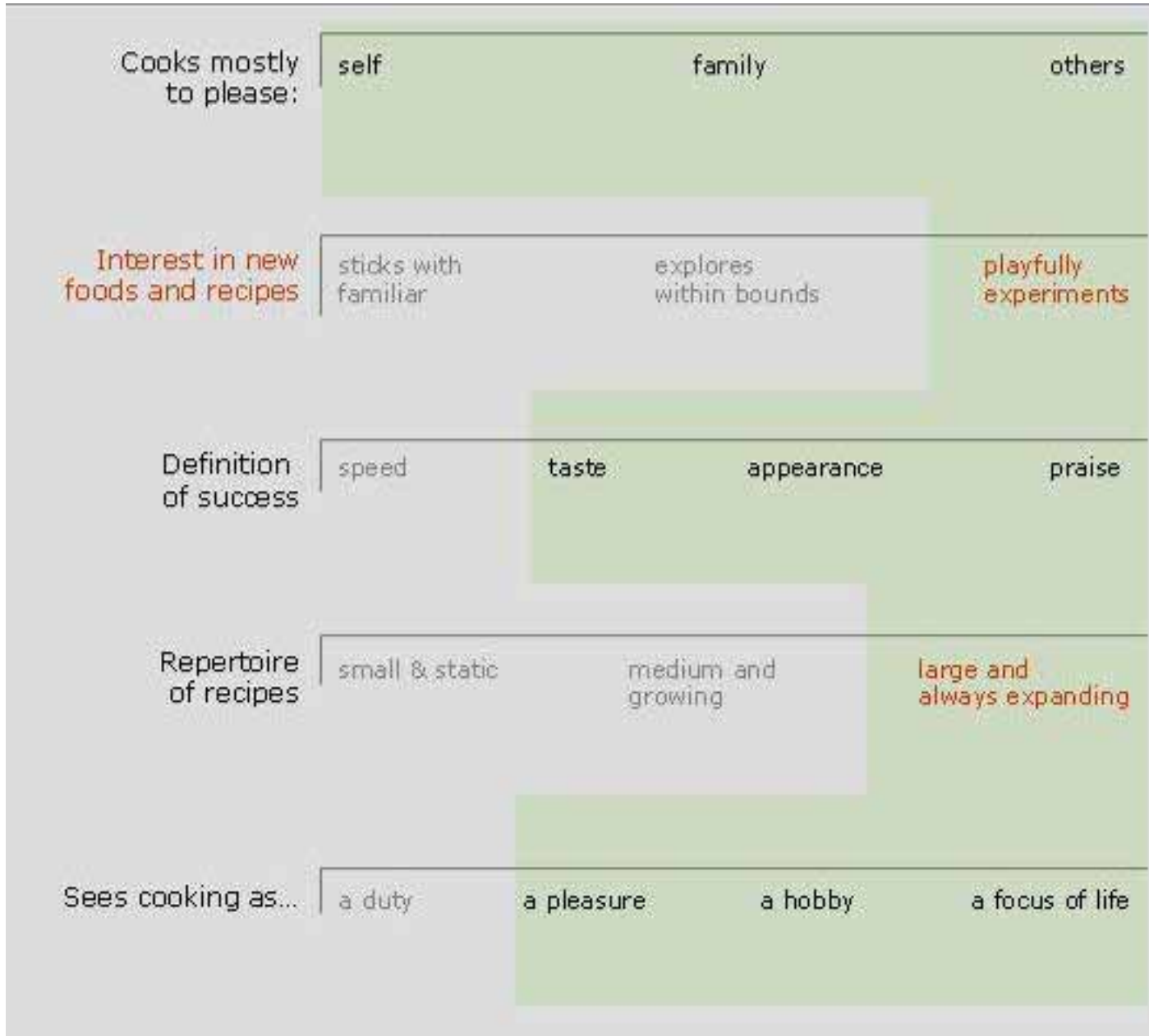
# One result: behavioral segments based on learning patterns



**Insight:** successful recovery from mistakes is related to growing mastery of the appliance and its controls.



# Meaningful dimensions of difference



For my money, a set of these that shows variation in people's behavior across an observed set of dimensions is far more useful to the team than a set of narrative "persona."



Tools for integrating understanding of many dimensions of experience

# **goArmy.com** **guiding strategy**

Decision-making timelines

Data among the cubicles

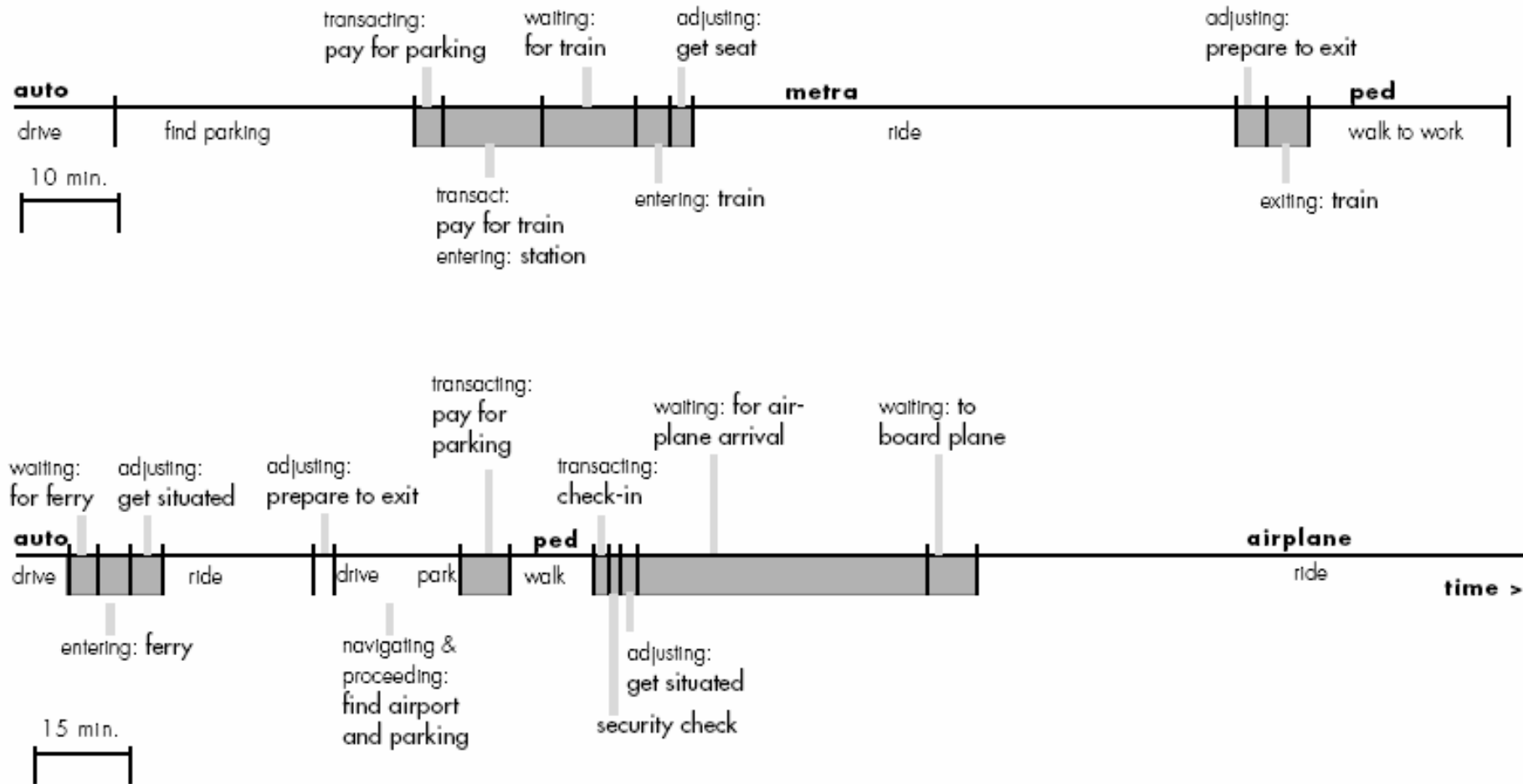
Immersion workshops







# From another project: timelines synthesized into genres of experience



## Making data manipulable (and public)



During analysis (here, affinity clustering and a few different attempts at models) we surrounded the team's cubicle area with data from teenagers, mothers, recruiters and soldiers. This has the side effect of beginning to expose everyone to the voice of the people who use the site.

## Immersing extended team in the data



This work session exposed the extended team and stakeholders to artifacts from the research, as well as the themes that had begun to emerge. Quotes, photographs, letters home, military documents, and more lined the walls.

## A little dramatic reading



To give everyone a sense of what it is like to be a teenager facing a life decision, and considering the Army as one choice, we read quotes from our research participants to this gathering of the extended team and stakeholders.

## Scores and scores of (mostly bad) ideas



We then had people brainstorm: “In light of the themes emerging from the data, how would you do your work differently?” The point was not so much to generate the shape of the web site, it was to get this group of people thinking differently about their work, in light of new understanding about people who use it.





# Story about possible future, as catalyst – a “Vision prototype!”

A vision prototype, technically conservative but organizationally ambitious, showed what it might be like in three years if all the strategic directions were pursued.

The image shows a hand-drawn document titled "mos data sheet" for "31S SATELLITE COMMUNICATIONS SYSTEMS". The document is organized into several sections:

- Top Left:** A box containing a star logo and the text "U.S. ARMY". To its right, the text "ARMY OF ONE" is written vertically.
- Top Center:** The title "mos data sheet" and "31S SATELLITE COMMUNICATIONS SYSTEMS".
- Top Right:** Three columns labeled "TIMELINE VIEW", "AVIAB REQS", and "CHAF".
- Left Column (Notes):**
  - A box with the text: "Put this data sheet in your stuff".
  - A section titled "NOTES" containing the text: "Kevin: If you do this, make sure to get GCCS training. It's the future, and it's fun. - Pfc. Pesto, 9/17/08, 11:24:24".
- Center Column:**
  - "What they do" with several horizontal lines and "(more)".
  - "Training" with a bulleted list of three horizontal lines and "(more)".
  - "Civilian Counterparts" with several horizontal lines.
- Right Column:**
  - "Career Poth" with a diagram showing three boxes connected by lines, with "EXPAND" written to the right.
  - "Variations / Choices" with several horizontal lines and "(more)".
  - "Strategic" with several horizontal lines and "(more)".
  - "Tactical" with several horizontal lines and "(more)".
- Far Right Column:** A vertical stack of boxes containing:
  - A small portrait and the name "NICKIE-JE".
  - Another small portrait and the name "CHAPIN".
  - The number "57".
  - The text "4YR 2RSV".
  - The word "BONUS".

# The team translates the research

The image displays a collection of research artifacts used in a design process. On the left, a hand-drawn sketch features the text "Immediate Soldier Connection" with an arrow pointing to a photo of a soldier's face. Below this, a list of insights is written in blue ink:

- Simplicity
- "Sophisticated" (with a note: "tah 'cool' or 'military' etc")
- Making army/Army life REAL
- Textures of being a soldier
- touch the experience

In the center, a vertical wireframe for a "3 YEARS" page is shown, with a sketch of a soldier's face below it. To the right of the wireframe, a list of notes is written:

- Army
- PATH
- What is
- Flip the through

On the far right, a screenshot of the Army's recruitment website is shown. The page features a navigation bar with "HOME", "ABOUT", "CONTACT", and "SUPPORT". Below the navigation bar, there are four main sections:

1. HOW DO YOU WANT TO JOIN THE ARMY? ACTIVE DUTY RESERVE
2. HOW LONG WOULD YOU WANT TO BE IN THE ARMY?
3. WHAT WOULD YOU WANT TO DO?
4. WHAT DO YOU WANT FROM THE ARMY?

The website screenshot also includes a large photo of a soldier's face and the text "IF YOU JOINED THE ARMY..."

Insights from the research begin to shape the next iteration of the site.

# BBC Digital Curriculum: Posters of design guidelines



Whenever an interface makes a shift in content, controls, or modes, there is potential for people to become confused, or even experience a sense of loss of control. This is especially true for children, especially when they are using something new.

There are several types of transitions to consider:

**The learner is waiting for the system to complete work that lasts longer than three seconds** (for example, waiting for something to download). Such transitions should accurately portray progress, show at a consistent rate, provide a clear way to cancel the operation, and ideally be entertaining to visually engage.

**The learner is entering an area of content intended for a different audience.** For example, he or she is about to view content intended for parents, or for a different age group. Such transitions should make the nature of the change very clear, and act as a sort of detour, giving people the chance to proceed into the new content or choose not to enter.

**The learner is moving between "screens" within a larger content structure.** For example, moving from one item to a sequence of similar, or moving between levels in a hierarchy. It is harder to give clear guidelines for such transitions than for the two previous, because the right thing to do depends on context.

### IMPLICATIONS for the Digital Curriculum

- Design guidelines should include recommended solutions for common transitions: into content, away from content, between age groups, between major sections of content, etc. Good solutions will be simple, undistracting, meaningful, and true to the overall personality.
- Transitions that involve a wait longer than three seconds should also be covered by a solution in the guidelines. (The three second figure comes from human factors studies which set thresholds for attention drift.)
- DC designers should be aware of the language of transitions between chunks of content. And the content development environment should provide standard behaviours for meaningful transitions.







The perceived complexity and difficulty of a product is directly related to the number of choices it presents at one time. Presenting many choices increases the likelihood that someone will make an unselected choice, and increase the chance that they will lose their way. Each time a user makes a choice, they become more frustrated and uncertain, and a little less likely to use the product again.

**The path: carefully manage and limit features, content, paths, branching, and tools.** A large set of parallel, equal-weight content items can be exciting (see "offer opportunities to explore"). A large set of decisions to make, each with uncertain consequences, can be overwhelming.

**For very young children (age 3 - 7),** either stick to a single sequence (which amounts to one or two choices, "next" and "previous") or an array of things to explore, each with its own consequence (for example, each triggers a small animation or short activity), and equal in consequence (if at all, it doesn't really matter which one you choose).

**For later ages (or adults)** it becomes more appropriate to include a larger number of choices. Assuming of course, good practices for clearly communicating the meaning of each choice, the consequence of making each choice, and setting expectations for what will happen next.

### IMPLICATIONS for the Digital Curriculum

- Design guidelines should include a "simplicity metric" – a recommendation for the maximum number of controls, links, or decision-points on the screen at any one time, by age groups.
- Design reviews should check for violations of this simplicity metric.
- Protocols for usability tests should include ways to evaluate whether learners saw and considered all the possibilities available to them, as well as some measure (perhaps subjective and qualitative) of their perception of the product's complexity.




An attempt to make design principles from research a part of the daily work culture.



## Summary

Designing for experience is *hard*

My recommended recipe:

- a simple, powerful, generally applicable process
- a big bag of methods and tools
- use the right tool for the right goal
- attend to the gaps, bridges, connections, relationships first, then get the artifacts and interfaces right
- work hard at facilitating collaboration

Thank you

