

CMPT 363: User Interface Design

Designing Interactive Help Systems

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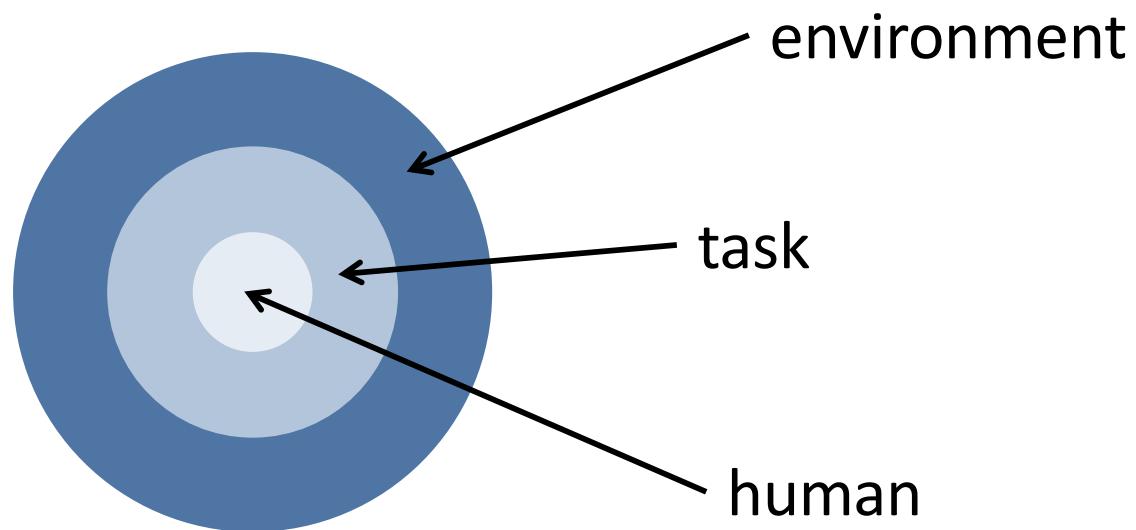
[NEWS](#)

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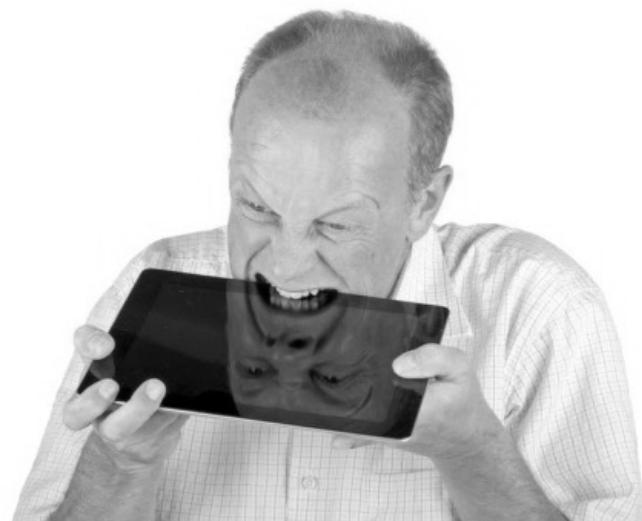


in this course...

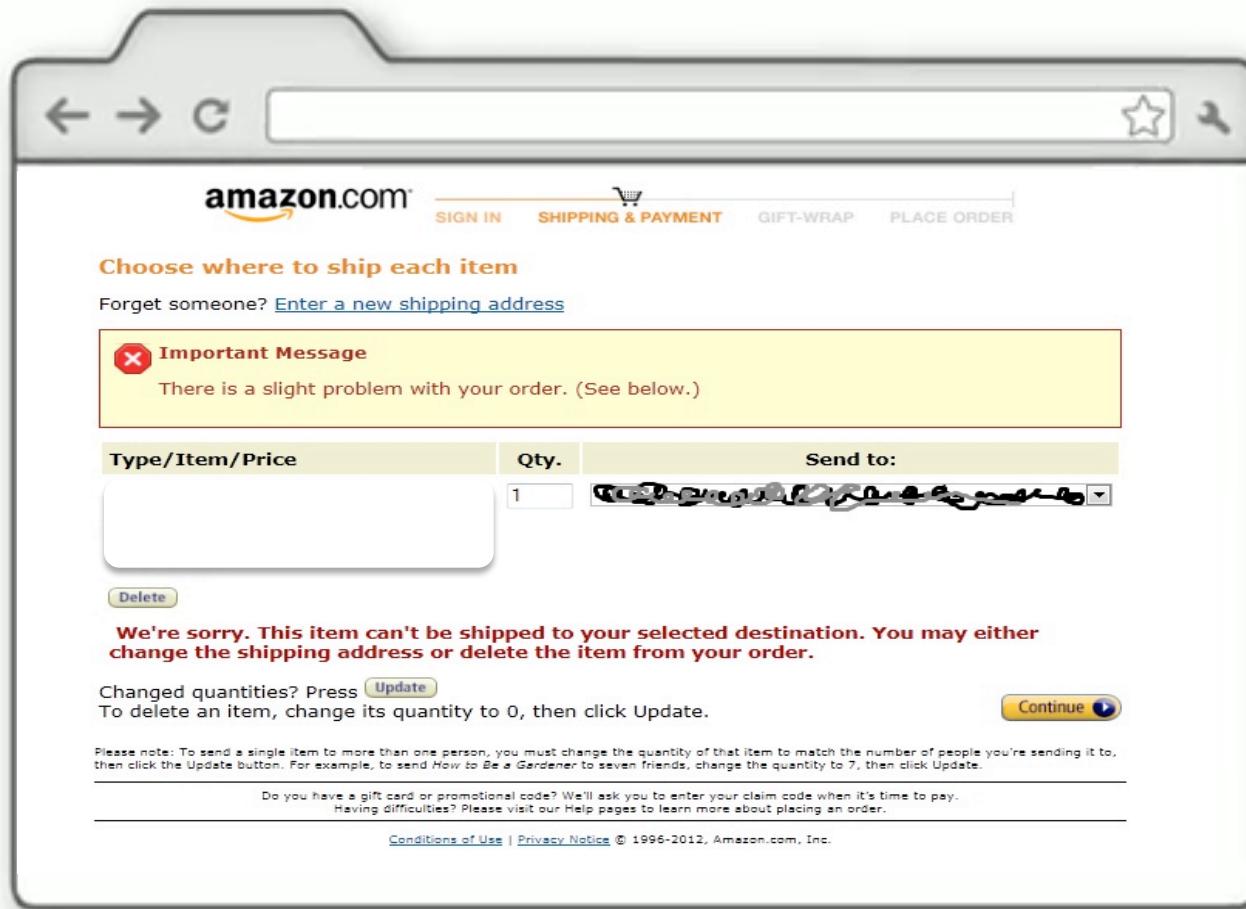
- **human-centred:**



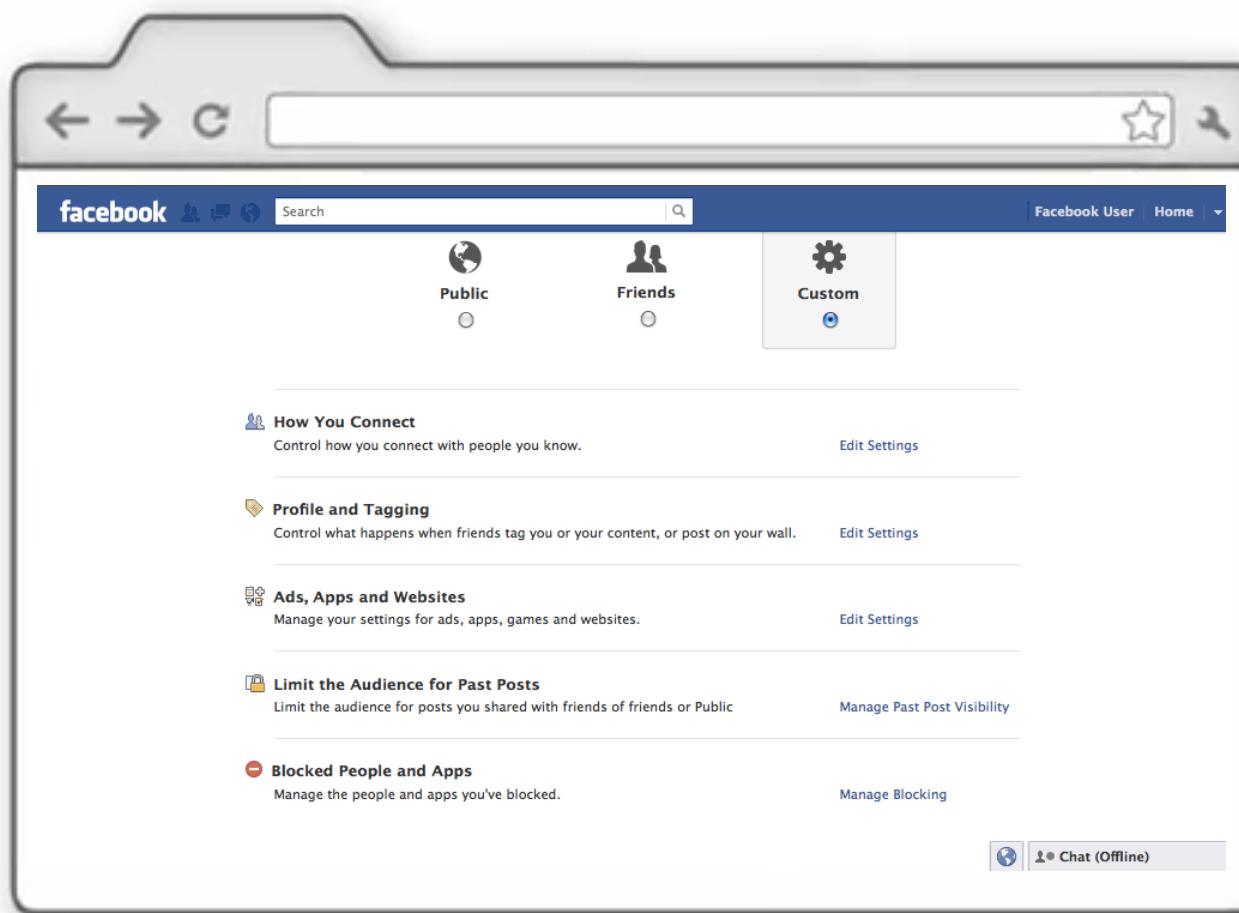
but users can still be frustrated...



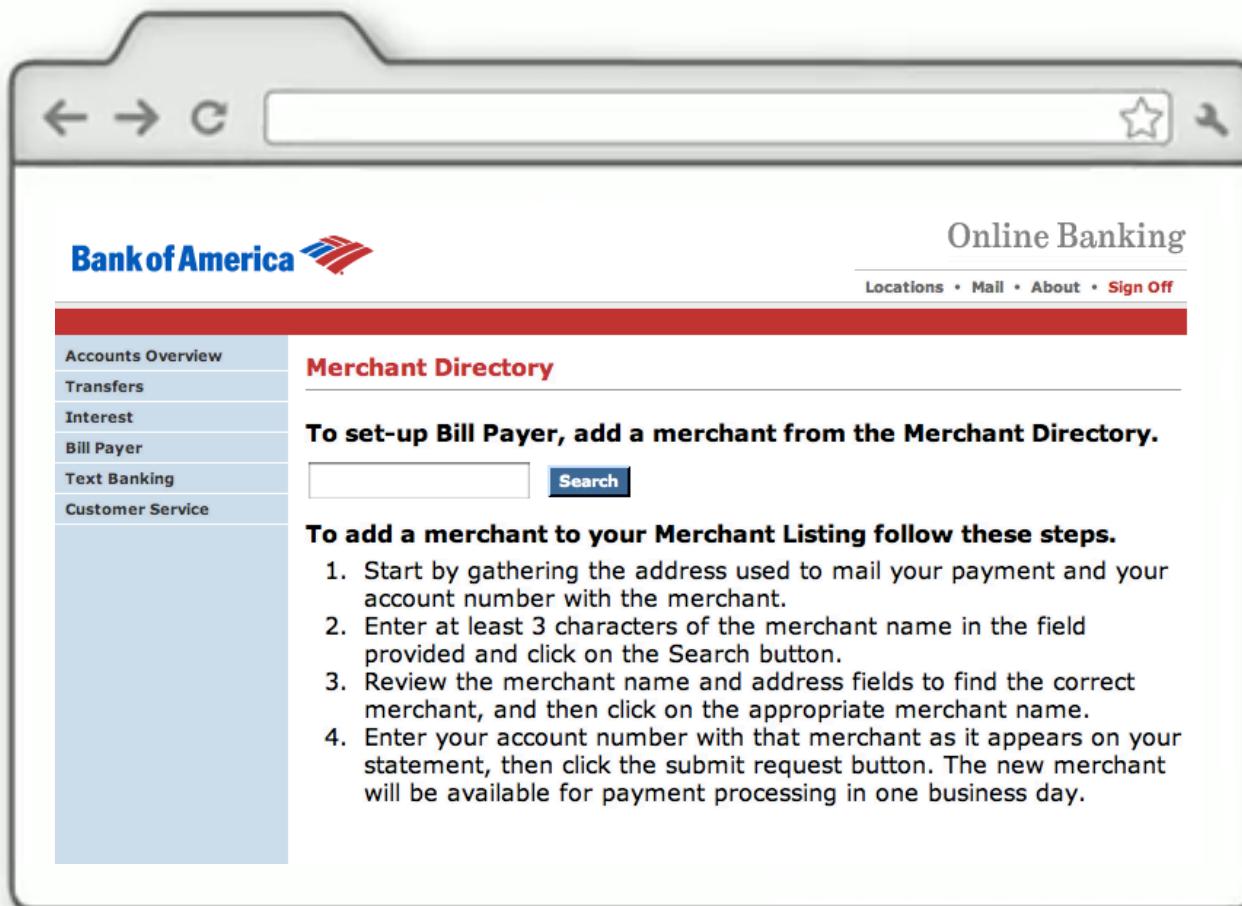
example: where did my credit card info go?



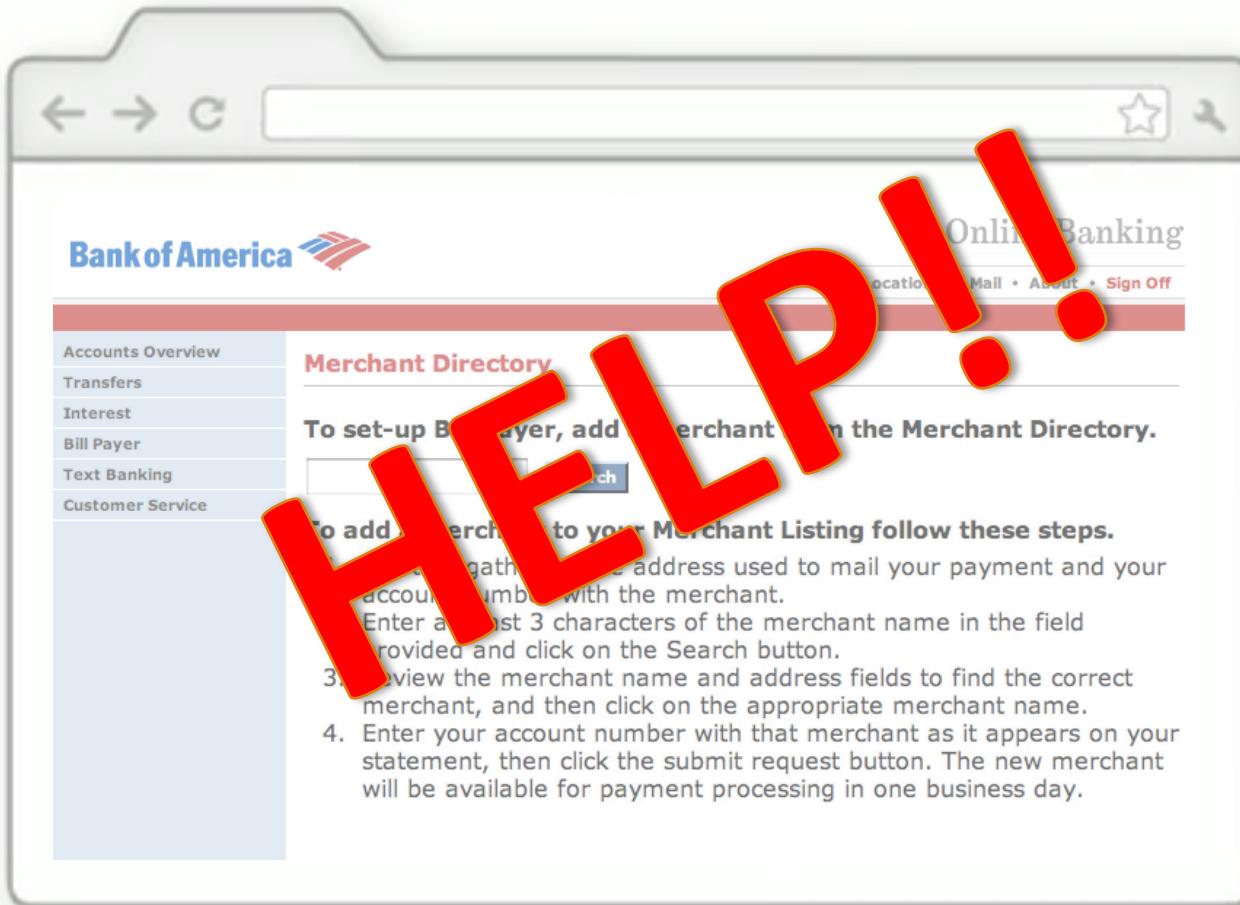
who can see my stuff now with new privacy settings?



how do I set up a recurring bill payment?



what would you do get help?



quick activity

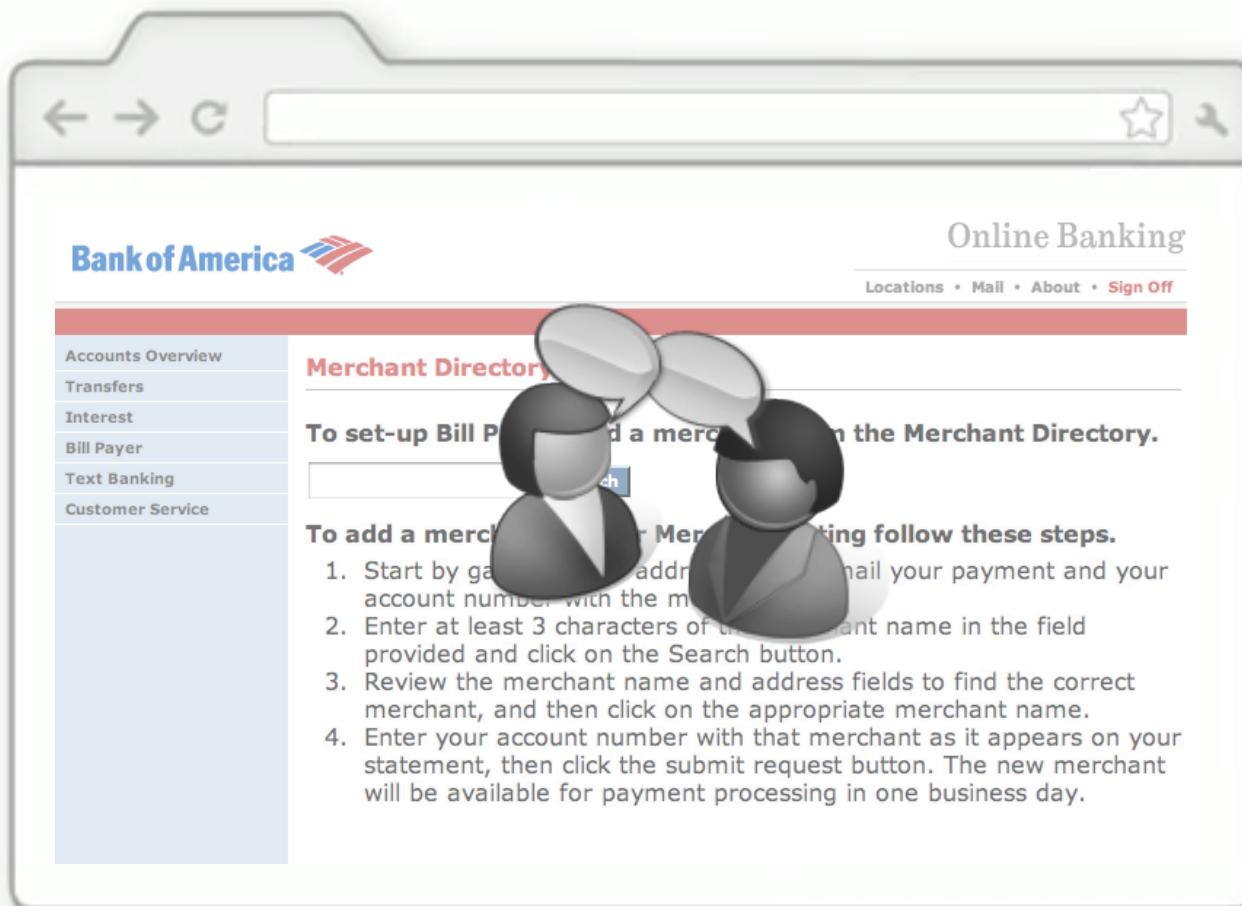
what would you do to get help?

[type in chat]

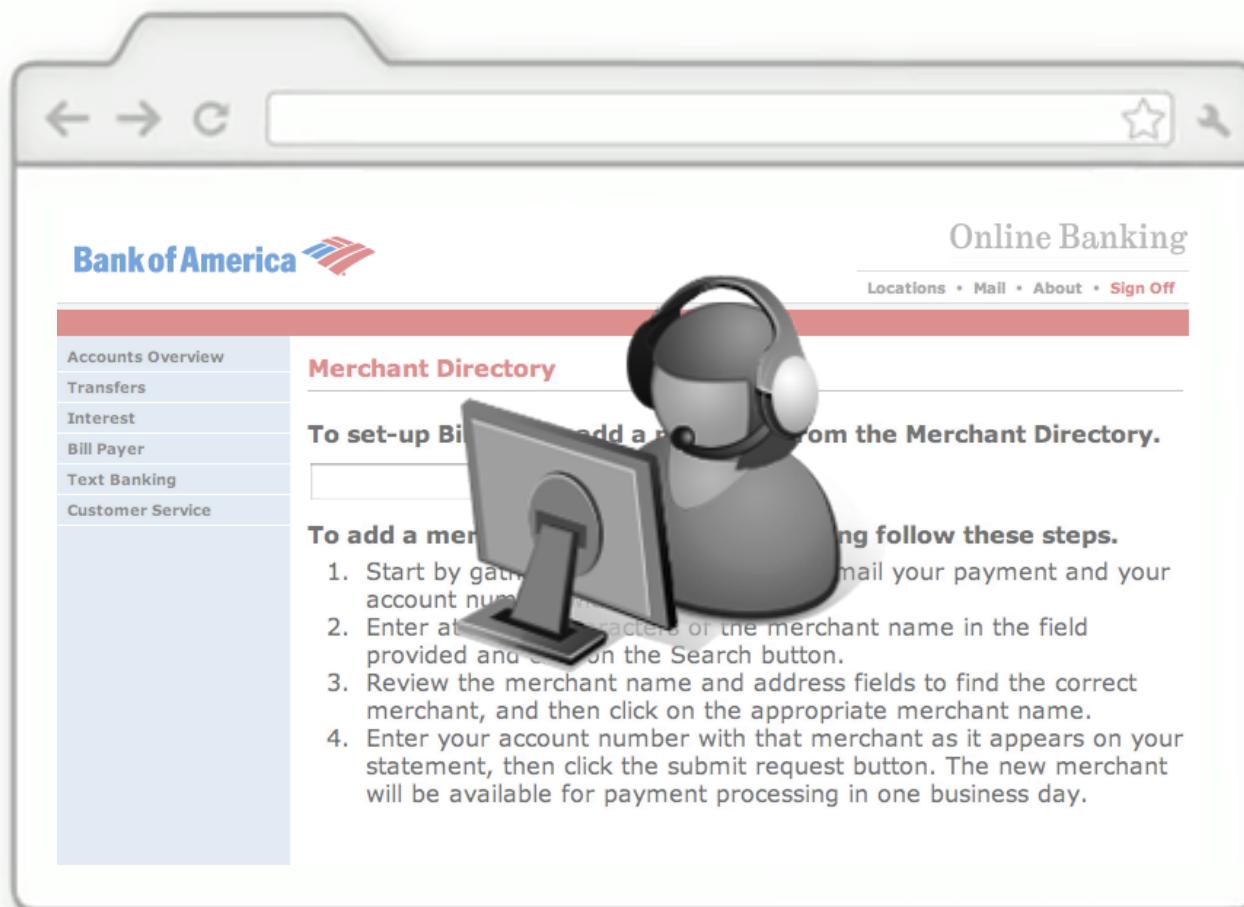
are you generally successful?

[type in chat]

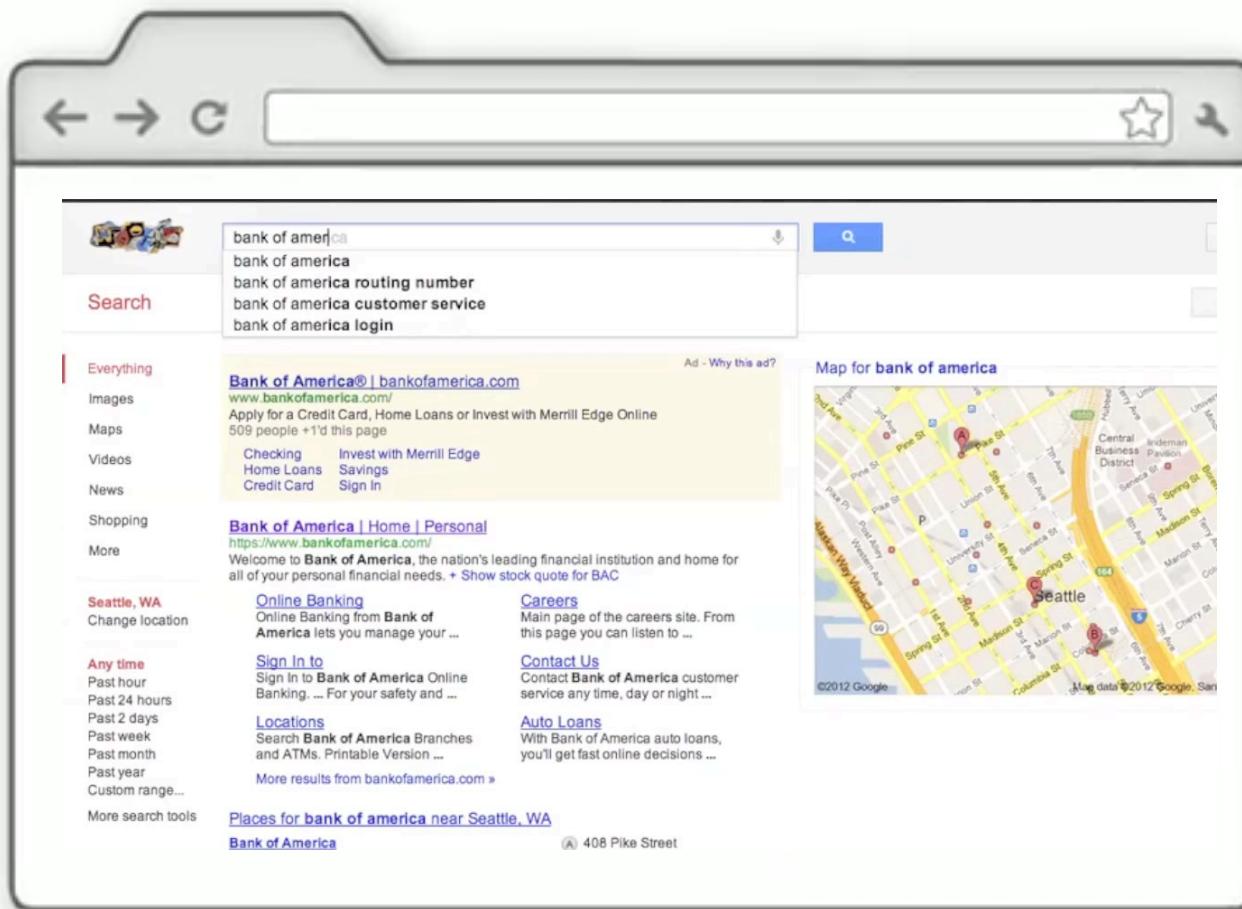
ask a friend?



call for support?



search for help?



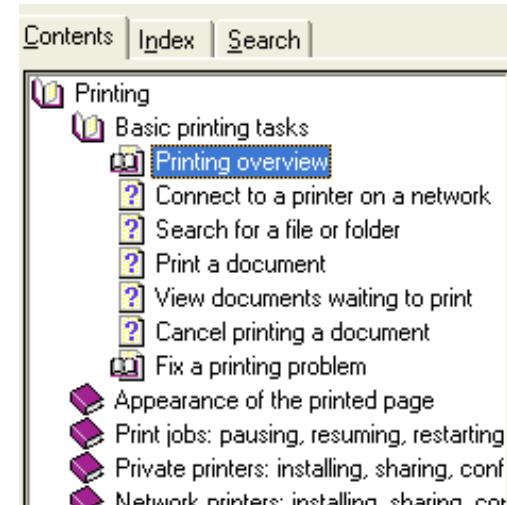
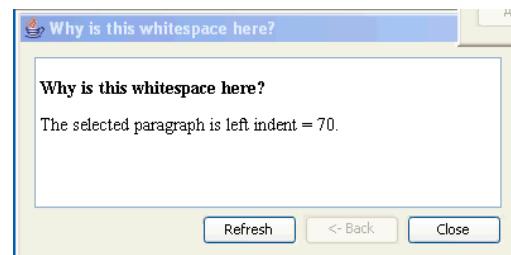
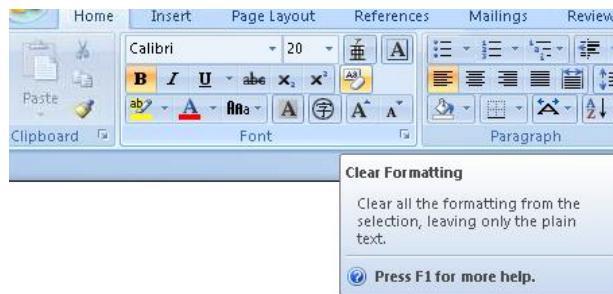
how do we design **effective help systems** for end users to find help on their own?



end-user



software help systems have evolved over the years...



A screenshot of a web-based help system. On the left, there's a 'Groups' sidebar with links to 'Google Product Forums' and 'Google Calendar'. The main area shows a list of posts from users like Jeff Vader, Alice PB&J, and Charlie. On the right, a search bar is used to look up 'bank of america', and the results show links to the bank's website for various services like online banking, careers, and contact information.



a lot of momentum in HCI in
tackling software learnability...



interactive help approaches

1. built-in help/documentation
2. online/searchable help
3. contextual help
4. adaptive and automatic help
5. crowdsourced help
6. crowdsourced contextual help

built-in help/ documentation

main idea: users can browse or search through application-specific help files

The screenshot shows a help center interface for Microsoft Word. The top navigation bar includes 'Home > Creating a Presentation' and a yellow banner with the text 'Go online to see the full set of Help, tutorials, and videos.' and a 'Go Online' button. The main content area has a title 'Templates are not loading automatically' with a red 'P' icon. To the right is a 'Show All' link. Below the title, there are two sections: 'Cause: The template was not created by using Office for Mac on a Macintosh computer.' with a solution 'On your Mac, open and resave the template, overwriting the original template if necessary.' and 'Cause: The hard disk is full.' with a solution 'Delete some files from your hard disk, or move them to another disk.' At the bottom left is a 'See also' section with a link 'Create and use your own template'.

Home > Creating a Presentation

Go online to see the full set of Help, tutorials, and videos. [Go Online](#)

P Templates are not loading automatically [Show All](#)

Cause: The template was not created by using Office for Mac on a Macintosh computer.

► **Solution:** On your Mac, open and resave the template, overwriting the original template if necessary.

Cause: The hard disk is full.

► **Solution:** Delete some files from your hard disk, or move them to another disk.

See also

[Create and use your own template](#)

what are some advantages/ drawbacks of built-in help/ documentation?

- + can usually access help from **one click** within the application
- + often has some structure, categories
- people **don't like reading** documentation!
- content is **not always relevant** to the specific problem that the user may be experiencing

online/searchable help

main idea: users can search a vast array of Internet resources to find application help

Search

bank of america
bank of america routing number
bank of america customer service
bank of america login

Everything
Images
Maps
Videos
News
Shopping
More

Seattle, WA
Change location

Any time
Past hour
Past 24 hours
Past 2 days
Past week
Past month
Past year
Custom range...
More search tools

Bank of America® | bankofamerica.com
www.bankofamerica.com/
Apply for a Credit Card, Home Loans or Invest with Merrill Edge Online
509 people +1'd this page

Checking Invest with Merrill Edge
Home Loans Savings
Credit Card Sign In

Bank of America | Home | Personal
<https://www.bankofamerica.com/>
Welcome to **Bank of America**, the nation's leading financial institution and home for all of your personal financial needs. + Show stock quote for BAC

Online Banking
Online Banking from **Bank of America** lets you manage your ...

Careers
Main page of the careers site. From this page you can listen to ...

Contact Us
Contact **Bank of America** customer service any time, day or night ...

Locations
Search **Bank of America** Branches and ATMs. Printable Version ...

Auto Loans
With Bank of America auto loans, you'll get fast online decisions ...

More results from bankofamerica.com »

Places for **bank of america** near Seattle, WA

Bank of America

Ad - Why this ad?

Map for **bank of america**

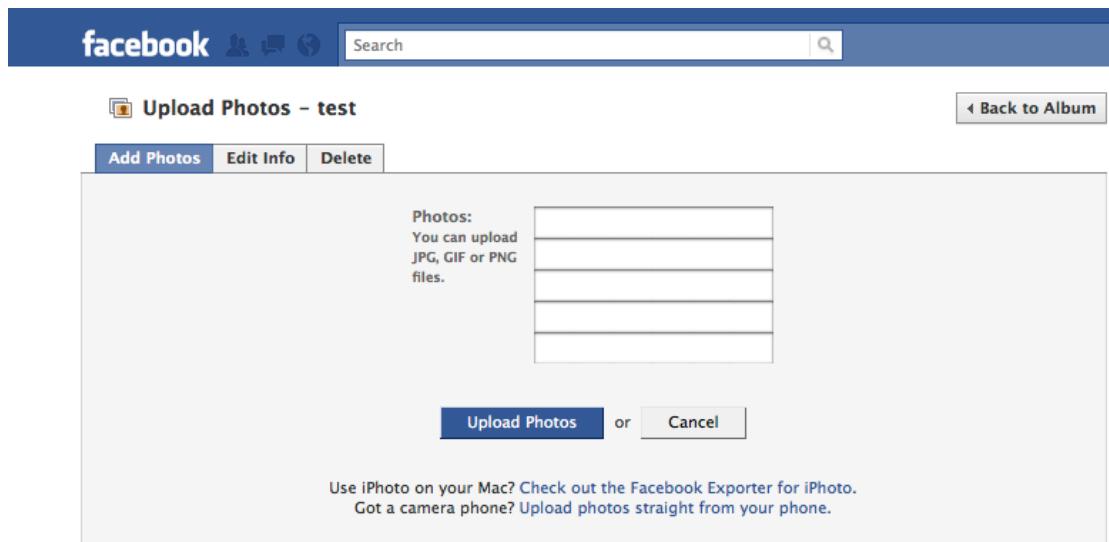
what are some advantages/ drawbacks of online/searchable help?

- + lots of questions and answers are available on the web, can explore a topic in more depth
- using the right keywords to find help is often difficult
- users run into the vocabulary problem

if you were having trouble on this upload screen on Facebook, how would you search the web? What keywords would you use?



users run into the **vocabulary problem** when trying to find something relevant...



"upload a picture"

"insert an image"

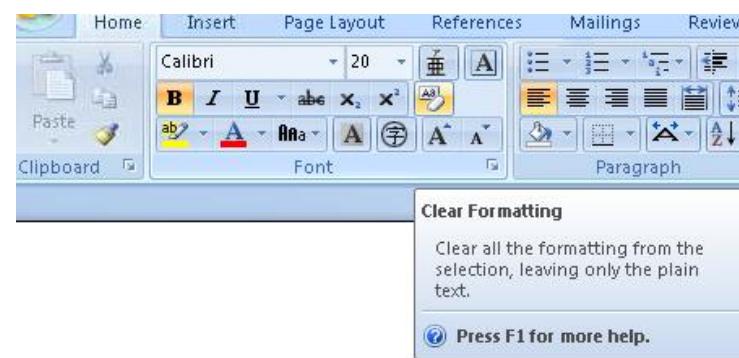
"add a photo"

contextual help

main idea: users can hover over or click on adjacent “?” symbols related different parts of an application to see a description of functionality



“Balloon Help”



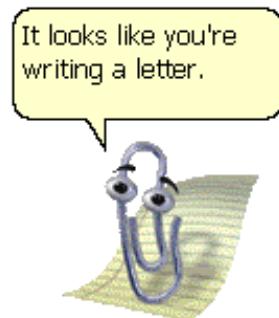
Tooltips

what are some advantages/ drawbacks of contextual help?

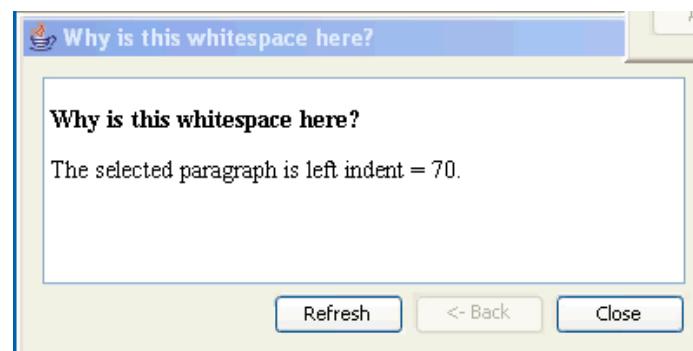
- + provides **immediate access** to help, users don't have to leave the context of their task
- + users can point at things rather than describe them in words
- help is authored at **design-time**, may not capture users' questions that occur during **application-use**
- most contextual help focuses on description of features and functionality

adaptive and automatic help

main idea: application automatically monitors users' actions in the background and offers relevant help



“Clippy”



Crystal (Myers et al.)

what are some advantages/ drawbacks of automatic help?

- + help is based on actual user activity in the application
- + help is often offered automatically, without explicit intervention from users
- can be **annoying** and obtrusive!
- help is tied to the **underlying source code** and can only address a limited class of help questions

crowdsourced help

crowdsourcing: “obtaining needed services, ideas, or content by soliciting contributions from a large group of people, and especially from an online community...” (Merriam-Webster)

main idea: users can find help from other users in forums, wikis, or social networking sites

The screenshot shows the Facebook Help Center interface. On the left, there's a sidebar with links: 'Using Facebook', 'Help Discussions' (which is highlighted), 'Top Contributor', 'Getting Started', and 'Safety'. The main area is titled 'Help Center' and features a search bar with 'Search' and a 'Like' button. Below the search bar is a question input field with placeholder text 'What can we help you with?' and a 'Search' button. Underneath is a note: 'Example: What is the Like button?'. A specific question is displayed: 'Wall: How to use the Wall feature and Wall privacy'. Below it is a 'Back to Topic' link. A user post by 'Megan Van Berkum-Wissmueller' asks: 'How can I make my "comments" and/or "likes" on other people's posts private and kept out of the public newsfeed?'. This was posted 'about 3 weeks ago'. Below this is a section titled 'Answers from Users'. A response from 'Michael Zambroski' (139 answers, 3 marked as best) says: 'facebook doesnt have that feature. All you can do is delete the post so it doesnt show but that defeats the purpose of posting something'. This was posted 'about a week ago'.

what are some advantages/ drawbacks of crowdsourced help?

- + users often have the same questions and can provide relevant answers
- + lots of user communities are emerging for all kinds of software applications
- disconnected from the application
- too many threads/discussions – answer may be buried, searching can be difficult due to vocabulary problem

scouring through forums can be daunting...

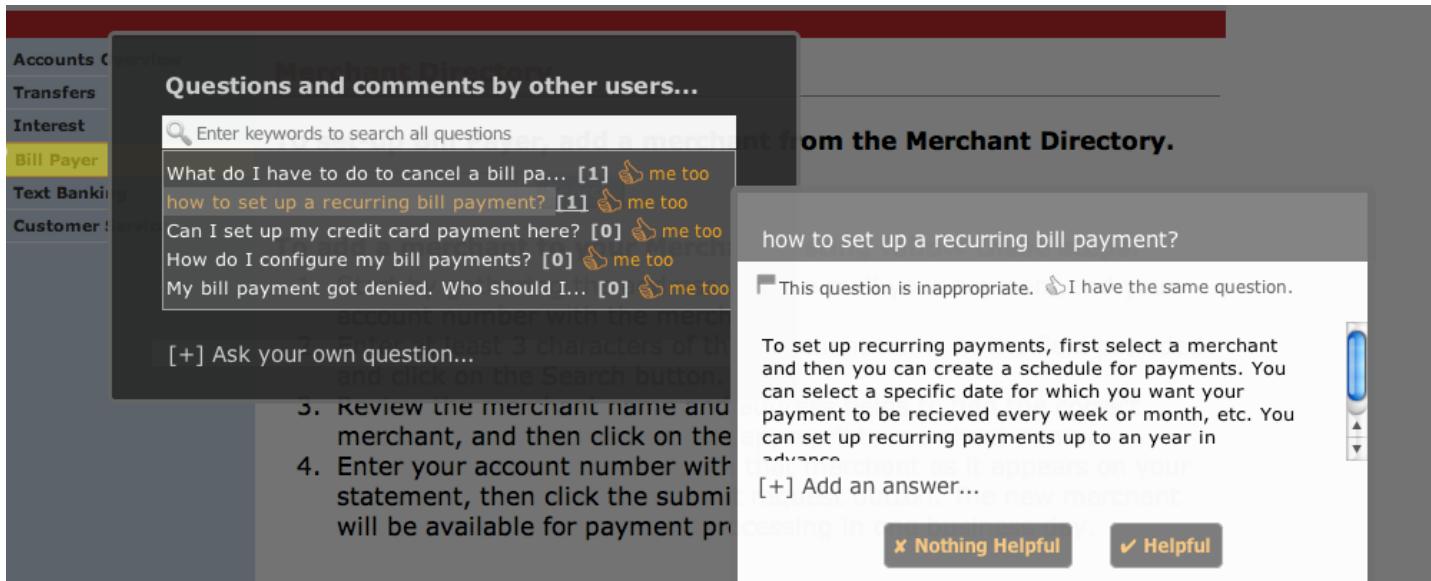
Groups ← POST A QUESTION C Topics ⚙

Google Product Forums › Google Calendar +119 Showing 133 of 86384 topics

	Colors - Summary of the color issues By Jeff Vader - 124 posts - 644 views - updated Apr 30 (6 days ago)		+ 38 others
	Give us your feedback on the new Google Calendar Look! By Alice PB&J - 560 posts - 1447 views - updated Apr 28 (8 days ago) Answered		+ 421 others
	Gentle reminders lab By Charlie - 65 posts - 300 views - updated Apr 6		+ 31 others
	Color code your individual events! By Adrienne - 130 posts - 1200 views - updated Apr 3 Answered		+ 109 others
	Labs in Calendar -- try a new feature today! By Charlie - 101 posts - 207 views - updated Mar 16		+ 86 others
	World clock Lab By Charlie - 133 posts - 258 views - updated Mar 14		+ 105 others
	Event flair lab By Charlie - 359 posts - 879 views - updated Mar 8		+ 297 others

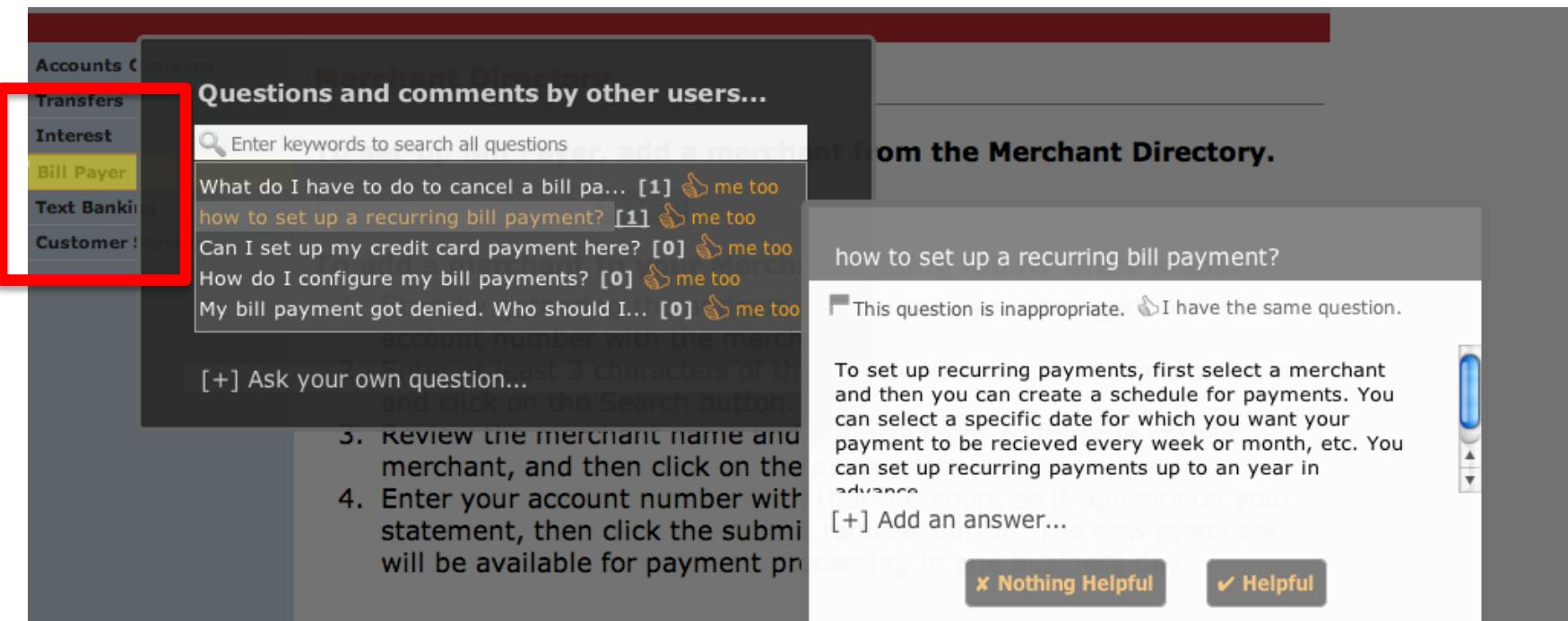
selection-based crowdsourced contextual help

users can find relevant help from **other users** in the **context** of the application by making selections in the user interface (my research!)



LemonAid

targeted help using **UI selections** as queries,
reducing the need for natural language queries...



the help interface...

Bank of America 

Online Banking Help

Locations • Mail • About • Sign Off

[Accounts Overview](#)
[Transfers](#)
[Interest](#)
[Bill Payer](#)
[Text Banking](#)
[Customer Service](#)

Merchant Directory

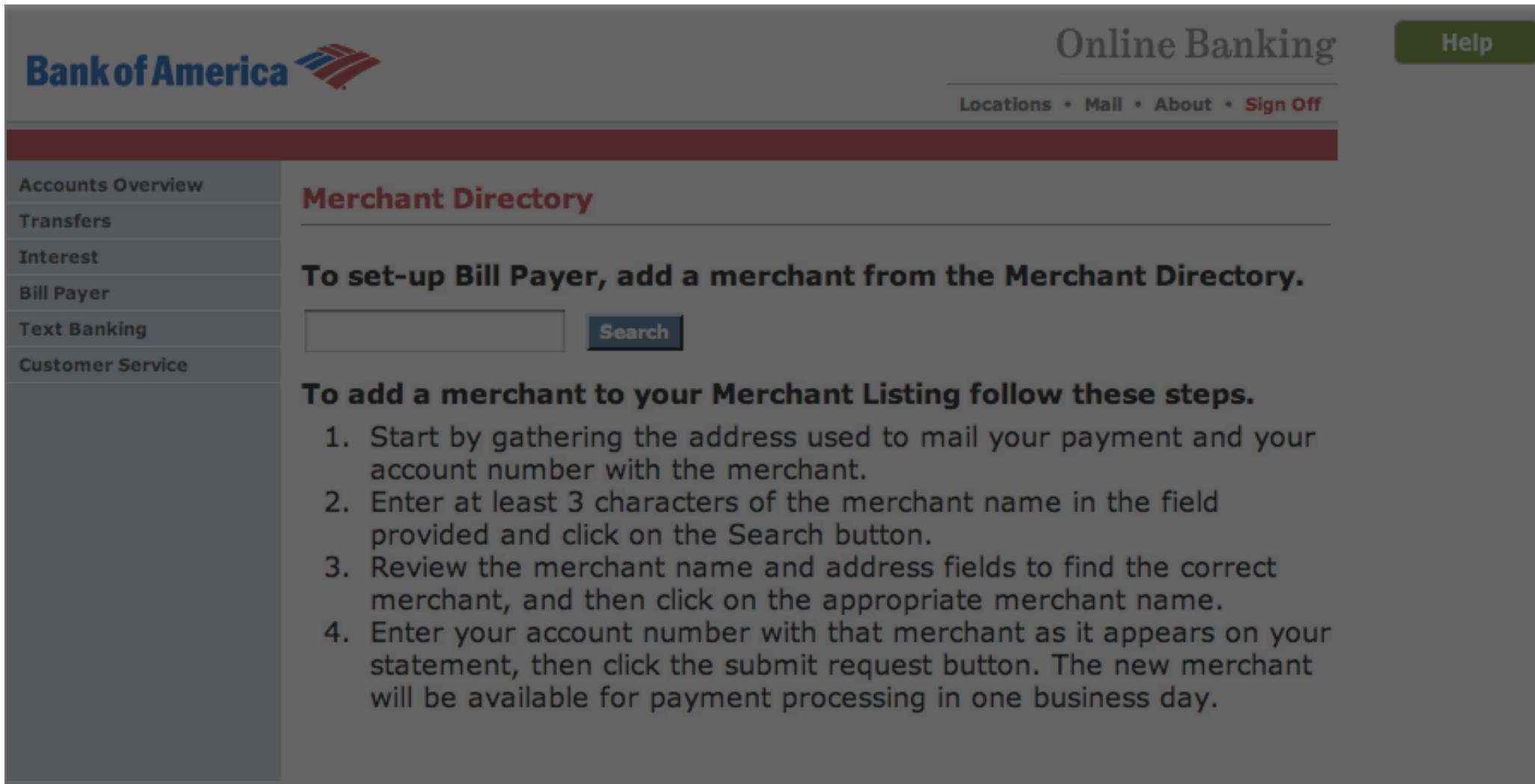
To set-up Bill Payer, add a merchant from the Merchant Directory.

Search

To add a merchant to your Merchant Listing follow these steps.

1. Start by gathering the address used to mail your payment and your account number with the merchant.
2. Enter at least 3 characters of the merchant name in the field provided and click on the Search button.
3. Review the merchant name and address fields to find the correct merchant, and click on the appropriate merchant name.
4. Enter your account number with that merchant as it appears on your statement, then click the submit request button. The new merchant will be available for payment processing in one business day.

the help interface...



The image shows a screenshot of the Bank of America Online Banking Merchant Directory page. At the top, there's a navigation bar with the Bank of America logo, "Online Banking" in the center, and "Help" in a green button on the right. Below the navigation bar is a red horizontal bar. On the left side, there's a sidebar with links: "Accounts Overview", "Transfers", "Interest", "Bill Payer", "Text Banking", and "Customer Service". The main content area has a title "Merchant Directory" in red. Below it, a bold instruction reads "To set-up Bill Payer, add a merchant from the Merchant Directory." There's a search input field followed by a "Search" button. Another bold instruction below says "To add a merchant to your Merchant Listing follow these steps." A numbered list follows:

1. Start by gathering the address used to mail your payment and your account number with the merchant.
2. Enter at least 3 characters of the merchant name in the field provided and click on the Search button.
3. Review the merchant name and address fields to find the correct merchant, and then click on the appropriate merchant name.
4. Enter your account number with that merchant as it appears on your statement, then click the submit request button. The new merchant will be available for payment processing in one business day.

the user interface...

The screenshot shows the Bank of America Online Banking interface. At the top, there's a navigation bar with the Bank of America logo, "Online Banking" in the center, and "Exit Help" on the right. Below the navigation is a horizontal menu with links for "Locations • Mail • About • Sign Off". On the left, a sidebar lists "Accounts Overview", "Transfers", "Interest", "Bill Payer", "Text Banking", and "Customer Service". The main content area has a yellow header bar with the text "Merchant Directory". Below it, a large bold instruction reads: "To set-up Bill Payer, add a merchant from the Merchant Directory." There's a search input field followed by a blue "Search" button. Another bold instruction below says: "To add a merchant to your Merchant Listing follow these steps." A numbered list provides the steps:

1. Start by gathering the address used to mail your payment and your account number with the merchant.
2. Enter at least 3 characters of the merchant name in the field provided and click on the Search button.
3. Review the merchant name and address fields to find the correct merchant, and then click on the appropriate merchant name.
4. Enter your account number with that merchant as it appears on your statement, then click the submit request button. The new merchant will be available for payment processing in one business day.

the help interface...

The screenshot shows a web page from Bank of America's Online Banking. In the top left corner is the Bank of America logo. To its right is the text "Online Banking". In the top right corner is a green "Exit Help" button. Below these are navigation links: "Locations • Mail • About • Sign Off". On the far left, there is a vertical sidebar with links: "Accounts Overview", "Transfers", "Interest", "Bill Payer", "Text Banking", and "Customer Service". A large yellow arrow points upwards towards the "Merchant Directory" link. The main content area has a yellow header bar with the text "Merchant Directory". Below it is a bold instruction: "To set-up Bill Payer, add a merchant from the Merchant Directory." Underneath this is a search field with a "Search" button. Another bold instruction follows: "To add a merchant to your Merchant Listing follow these steps." This is followed by a numbered list of four steps:

1. Start by gathering the address used to mail your payment and your account number with the merchant.
2. Enter at least 3 characters of the merchant name in the field provided and click on the Search button.
3. Review the merchant name and address fields to find the correct merchant, and then click on the appropriate merchant name.
4. Enter your account number with that merchant as it appears on your statement, then click the submit request button. The new merchant will be available for payment processing in one business day.

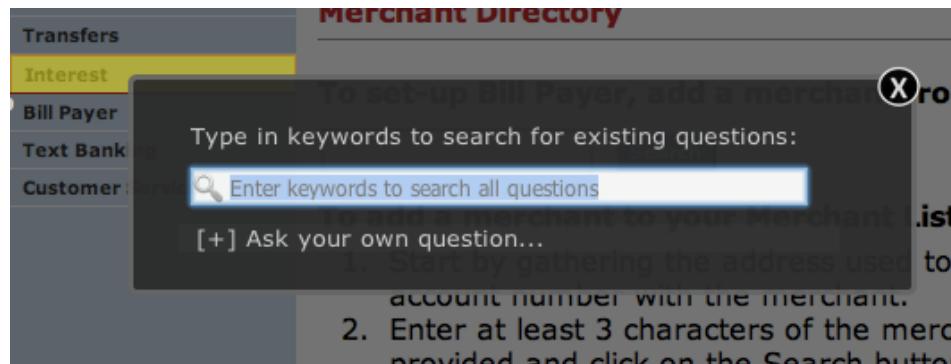
the help interface...

The screenshot shows a web browser window for Bank of America Online Banking. The top navigation bar includes the Bank of America logo, 'Online Banking', 'Locations • Mail • Help • Sign Off', and a red header bar with 'Bill Payer' selected. The main content area has a sidebar with 'Accounts Overview', 'Transfers', 'Interest', 'Bill Payer' (selected), 'Text Banking', and 'Customer Service'. A central panel displays 'Merchant Directory' help content. At the top of this panel is a search bar with placeholder text 'Enter keywords to search all questions'. Below it is a list of user questions with 'me too' links:

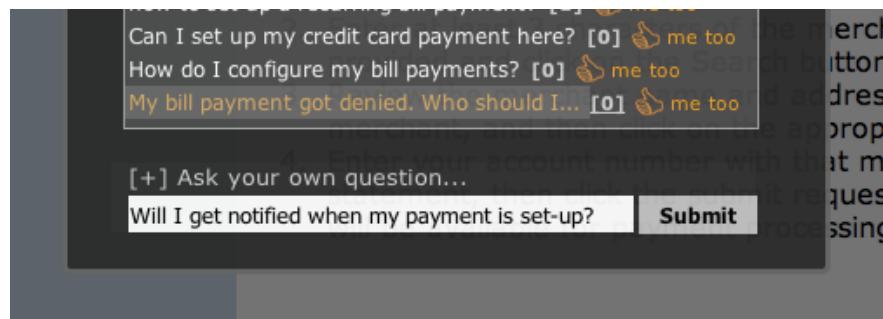
- What do I have to do to cancel a bill pa... [1] [me too](#)
- how to set up a recurring bill payment? [1] [me too](#)
- Can I set up my credit card payment here? [0] [me too](#)
- How do I configure my bill payments? [0] [me too](#)
- My bill payment got denied. Who should I... [0] [me too](#)

Below this is a section titled '[+] Ask your own question...' with instructions to enter account numbers and click the search button. To the right is a large text block about setting up recurring payments from the Merchant Directory, with a note about selecting a merchant and creating a schedule. At the bottom right are two buttons: 'x Nothing Helpful' and '✓ Helpful'.

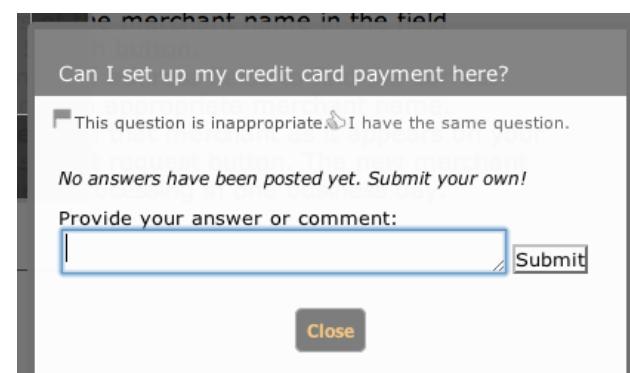
search for help...



post questions...

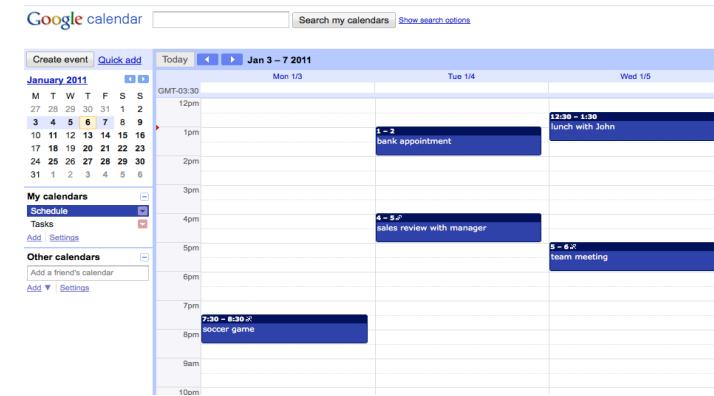


post answers...



LemonAid

independent of the underlying structure
and source code of the web application...



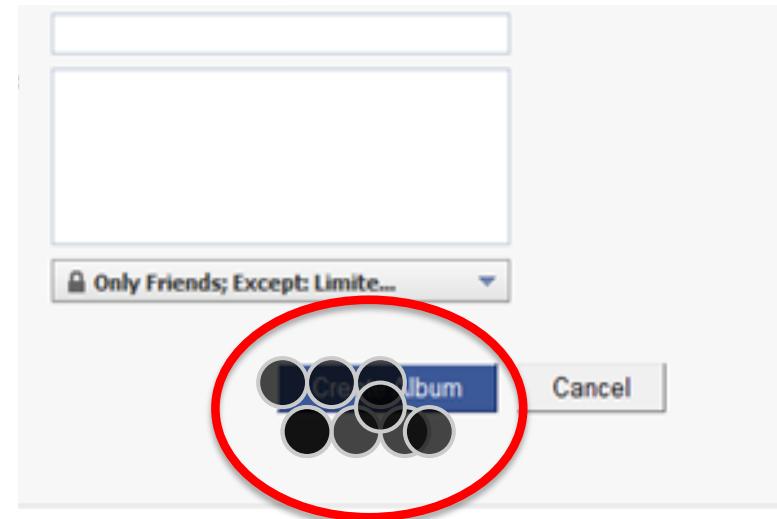
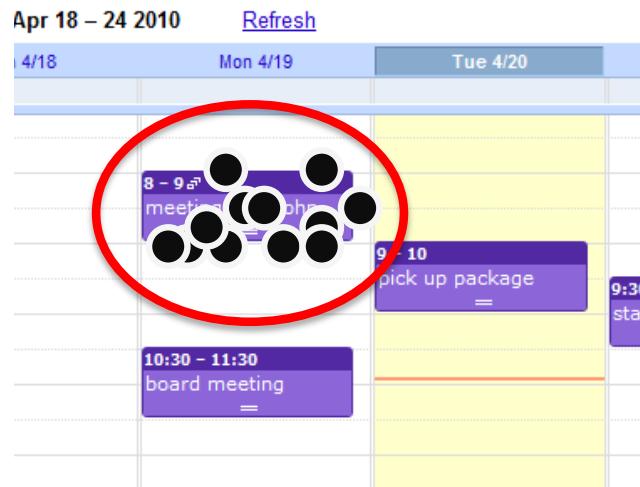
add a **JavaScript** snippet on all relevant pages

```
<script type="text/javascript"
src=".../LemonAidMain.js"></script> <script
type="text/javascript">var
applicationCode="yourSiteCode";</script>
```

insight driving LemonAid...

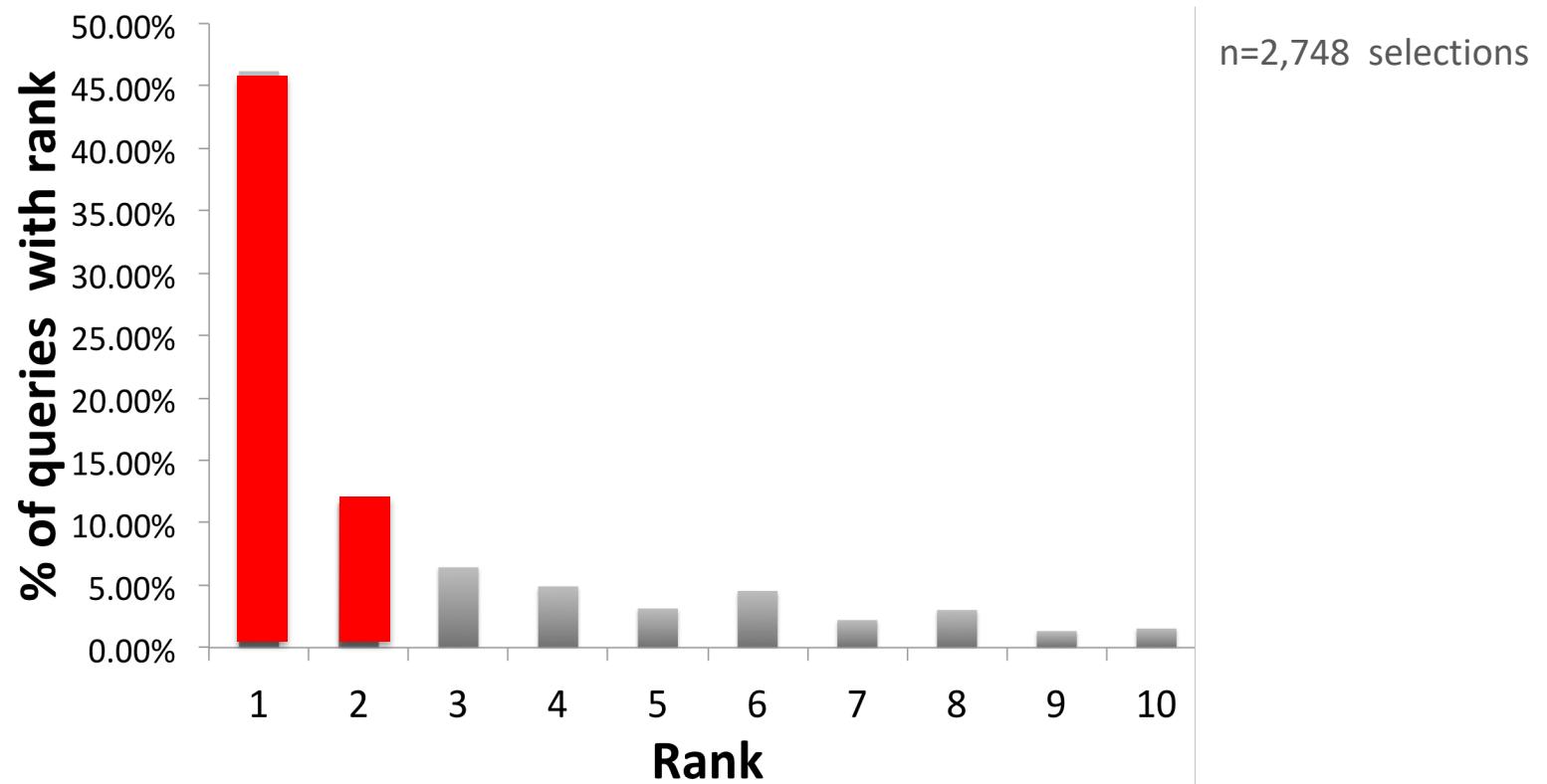
coupling of help needs to UI elements

- ***reduces*** unnecessary **variation** in users' queries
- holds across **different applications** and UIs



evaluation results...

LemonAid retrieved results for 90.3% of crowdsourced selections
relevant result was in the **top 2** results for **over half** of the selections.



LemonAid deployed on 4 sites at UWashington

The screenshot shows the University Libraries website. At the top, there's a navigation bar with 'Libraries: Bothell Tacoma Health Sciences All'. Below it is a large yellow 'W' logo. To the right, there's a 'ask us!' section with links for 'email | chat | phone | text'. The main content area has sections for 'FIND IT' (with links to 'Course Reserves', 'E-Journals', 'E-Newspapers', and 'Subject Guides') and 'UW WORLDCAT: SEARCH UW LIBRARIES AND BEYOND' (with tabs for 'Books', 'Video', 'Audio', 'Articles', and 'All'). A search bar is present with a 'Search All' button.

> 40,000 university students, faculty, and staff, visiting scholars, general public

The screenshot shows the Information School website. At the top, there's a yellow header with a blue 'W' logo and the text 'myUW . Campus Map'. Below it is a large blue 'i' logo with the text 'Information School UNIVERSITY of WASHINGTON we make information work'. There are tabs for 'Academics', 'Research', 'News & Events', and 'People'. The 'About' tab is currently selected. Below it, there are links for 'Dean's Message' and 'Mission & Vision'. A sidebar on the right says 'Future Students'.

> 900 current students, faculty, staff, prospective students

The screenshot shows the REDCap website. At the top, there's a red 'REDCap' logo. Below it is a navigation bar with 'Home', 'My Projects', 'Request New Project', 'Training Resources', 'Help & FAQ', and 'Send-It'. The main content area displays a list of projects with columns for 'Status', 'Title', 'Description', 'Actions', and 'Last Update'. A note at the bottom explains the status icons: Development (blue), Production (green), Inactive (red), Surveys (yellow), Data Entry Forms (orange), and Both (purple).

> 500 staff personnel within the medical school and affiliated research center (restricted)

The screenshot shows the ITHS Central Database website. At the top, there's a logo for 'ITHS Institute of Translational Health Sciences'. Below it is a navigation bar with 'Home', 'Persons', 'Projects', 'Records', 'Collaborators' (which is highlighted in blue), and 'Reports'. The main content area features a heading 'Find Collaborators Page' and a subtext 'The ITHS helps members get connected with each other. Search by key word or phrase below for'. There's a search bar with 'Key Word/Phrase' and a 'Search' button.

> 150 staff and researchers in a unit within School of Medicine (restricted)

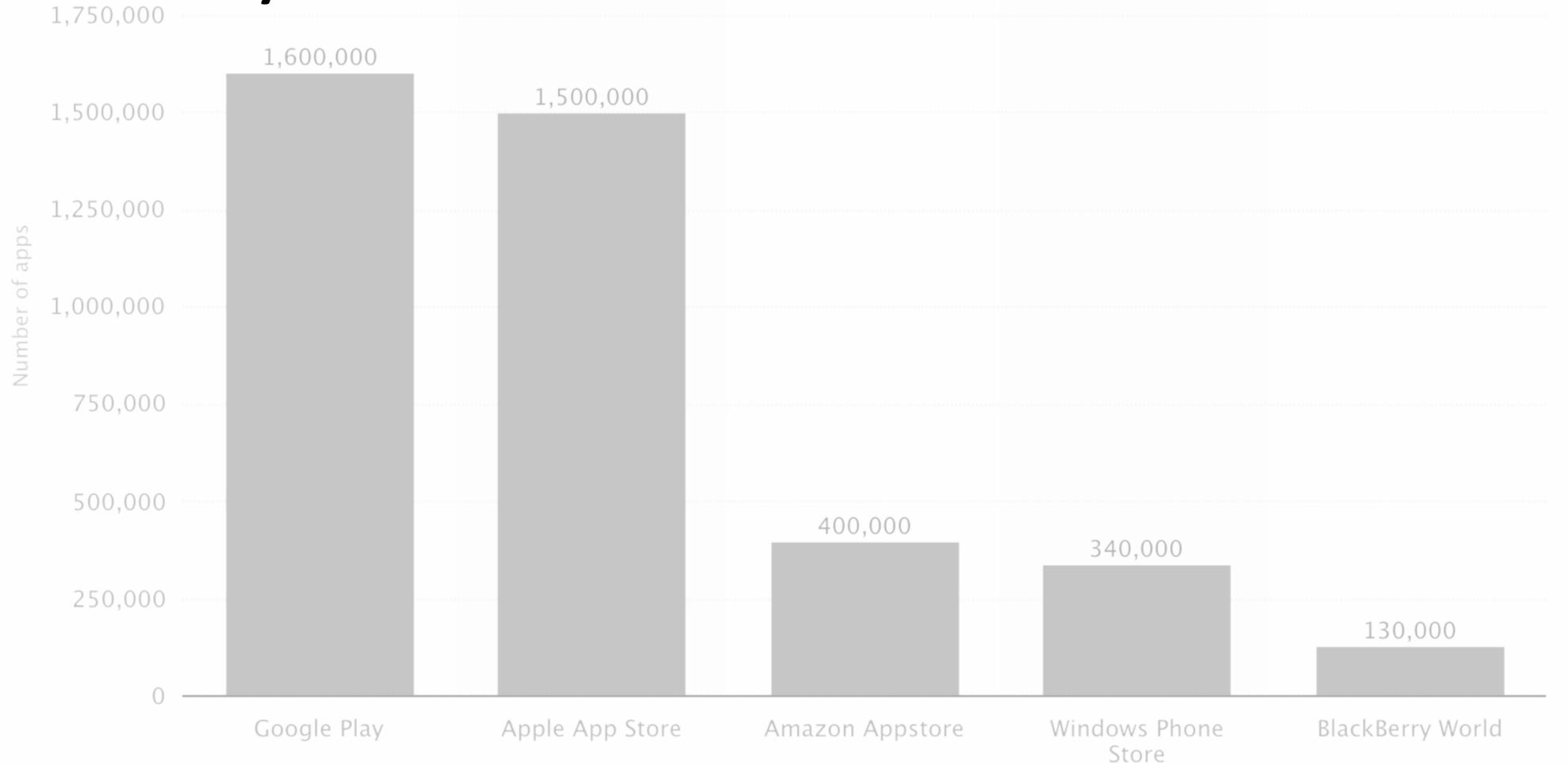
demo of deployed interface

The screenshot shows a library website interface. On the left, there's a sidebar with sections for 'FIND IT' (Books, Video, Audio, Articles, All), 'ARTICLES & RESEARCH DATABASES', 'Course Reserves', 'E-Journals', 'E-Newspapers', 'Subject Guides', and 'LIBRARY TOOLS' (Citation Guides & Tools, Off-campus Access Tools, Mobile-Friendly Tools, Alert Services, Library Feeds). A 'more >' link is also present. In the center, there's a 'WORLDCAT: SEARCH LIBRARIES AND BEYOND' search bar with tabs for Books, Video, Audio, Articles, and All. Below it is a search input field with a 'Search all' button. To the right of the search bar are links for 'Advanced search' and 'Help'. At the bottom of the search bar area is a 'Catalog' link. On the right side of the page, there's a 'HOW DO I...?' section with a video thumbnail for 'Getting Started with Company Research' (4:29 min). Further down are sections for 'Digital Collections' and 'Special Collections', each with a thumbnail image. At the very bottom, there's a 'WELCOME to' message followed by a list of library branches: Art Library, Built Environments Library, Drama Library, East Asia Library, Engineering Library, and Foster Business Library. There's also a 'RARES' section and a 'SPOTLIGHT' section.

what we learned in designing and deploying LemonAid...

- ✓ solving a real problem for end users
- ✓ retrieval algorithm was effective at retrieving relevant Q&A using UI selections
- ✓ easy to integrate LemonAid with other sites with a couple of lines of code...
- ✓ users wanted to come back and use the help system again

how do we make the innovation more widely available to end users?



a lot of momentum around
commercialization and startups

worked with our center for commercialization at
Washington

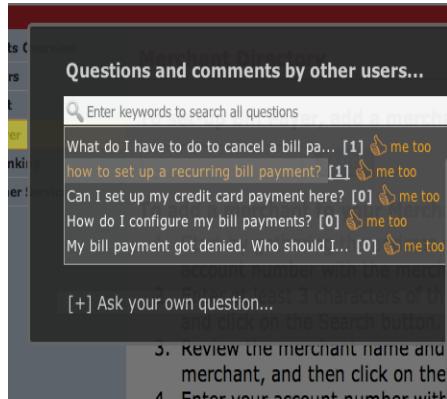


- initial seed funding
- access to local entrepreneurs, incubator space
- eventually got over \$7 million in venture funding and the company was recently acquired

different approaches for *connecting* users with each other in *context* of their tasks...

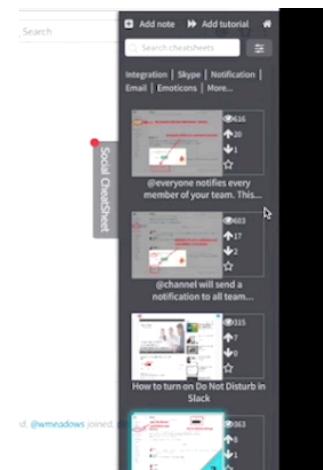
LemonAid

in-context questions & answers



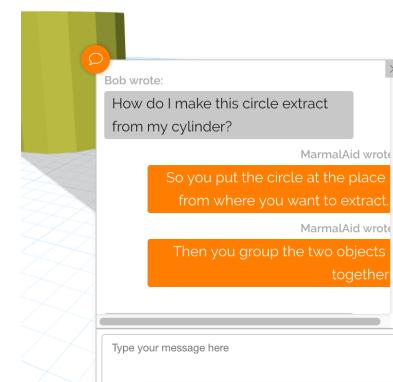
CheatSheet

in-context curated instructions, tutorials



MarmalAid

in-context real-time help



CheatSheet: in-context curated help

The screenshot shows a Slack interface with the '#general' channel selected. On the right side, there is a sidebar titled 'Social CheatSheet' containing several curated help cards:

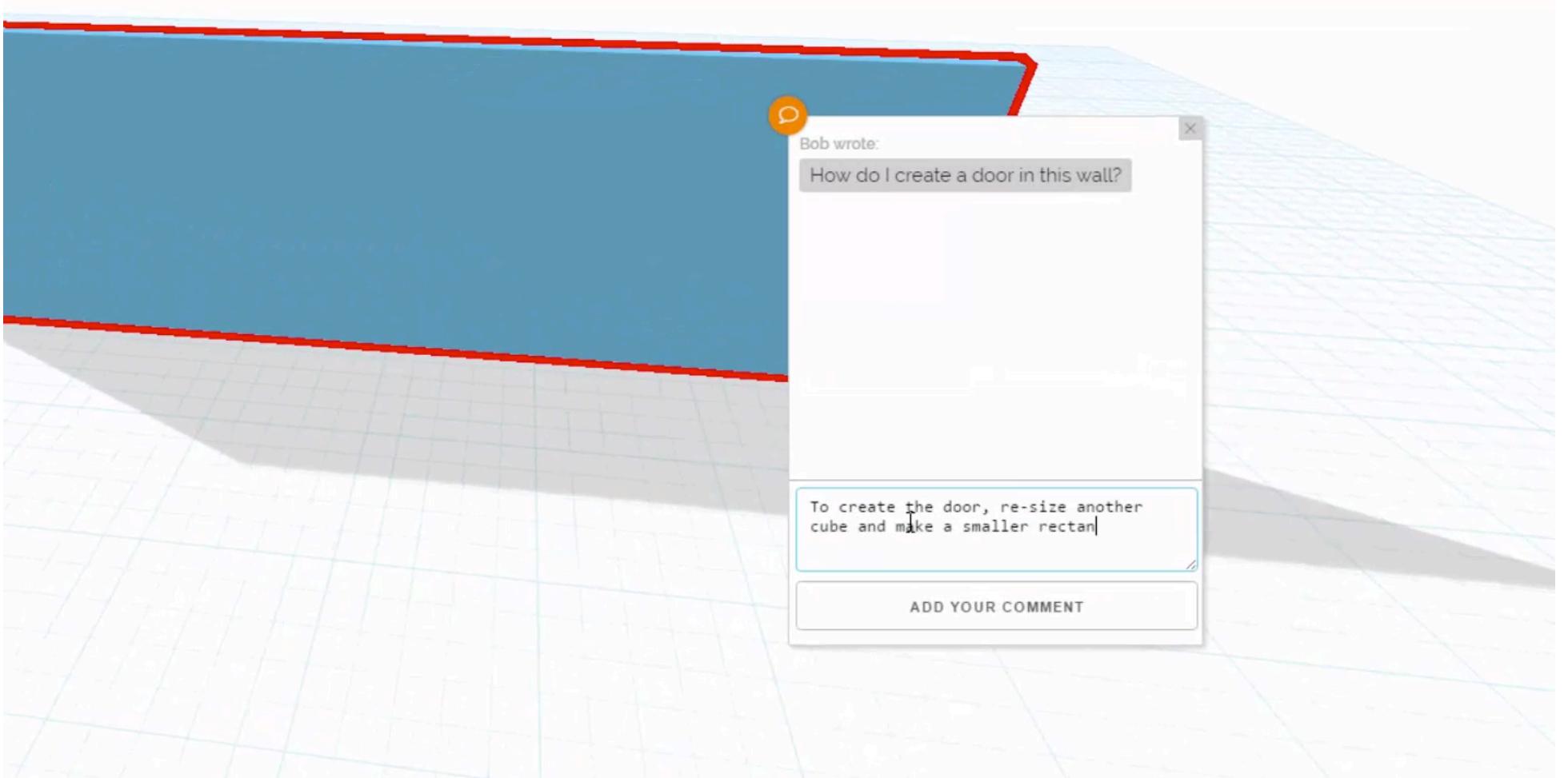
- @everyone notifies every member of your team.** This card shows a screenshot of a Slack message where '@everyone' has been used, with 616 notifications shown.
- @channel will send a notification to all team...** This card shows a screenshot of a Slack message where '@channel' has been used, with 603 notifications shown.
- How to turn on Do Not Disturb in Slack** This card shows a screenshot of the Slack settings interface under 'Do Not Disturb'.
- mute a channel** This card shows a screenshot of the Slack settings interface under 'Muting'.
- change the theme** This card shows a screenshot of the Slack settings interface under 'Appearance'.

The main channel area displays the following messages:

- billg** joined #general. Also, @mitchell joined, @mrossman joined, @glange joined, @jswasey joined, @lfunderburk joined, @tallison joined, @wmeadows joined, some others.
- amitchell** Hi, this is Alice Mitchell

At the bottom, there is a message input field: **+ Message #general**.

Marmalaid: in-context real-time help



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Feel free to reach out if you want to know more!

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