

# Adaptive Systems

*Igor Santos and Jessica Pauli de C. Bonson*

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- Evaluation of the System
- References
  
- Activity

# Adaptive System

- An interactive system that:
  - Adapt its behavior to individual users based on the user's profile, current goals and current situation.
  - Involve some form of learning, inference, or decision making.
- Adaptive  $\neq$  Adaptable

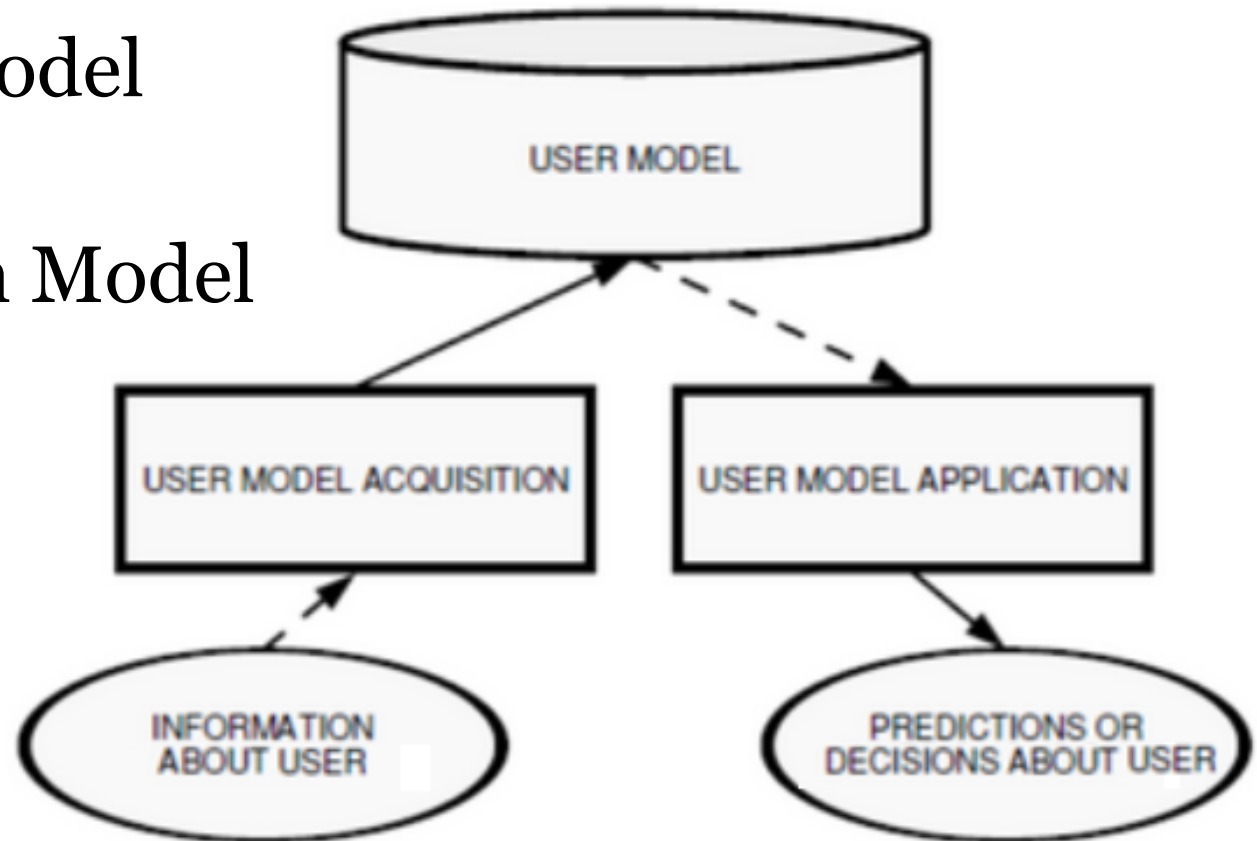


# Need for User-Adaptivity

- Diversity of Users and Contexts of Use
- Quantity and Complexity of Interactive Systems
- Avoid Cognitive Overload Problems

# General Architecture

- User Model
- Domain Model
- Interaction Model



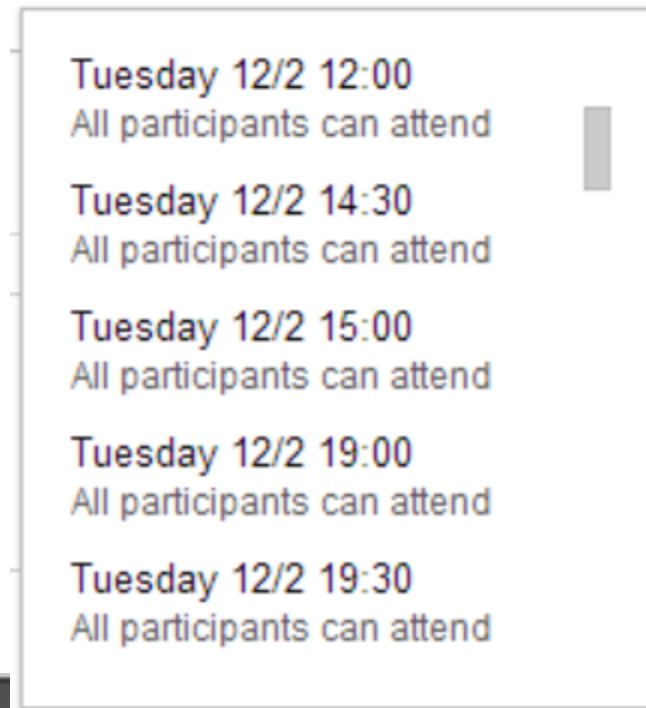
# Applications

- **Supporting System Use**
  - support routine tasks
  - adapting interface
  - giving advice
  - dialog control
- **Supporting Information Acquisition**
  - help finding information
  - information presentation
  - product recommendation
  - support collaboration
  - support learning

# Application: Support Routine Tasks

- save time and effort for the user

SwiftFile



Google Calendar

Click the  icons below

Guests

Yes: 0, Maybe: 0, No: 0



Jéssica Paul



Igor Santos

Suggested times

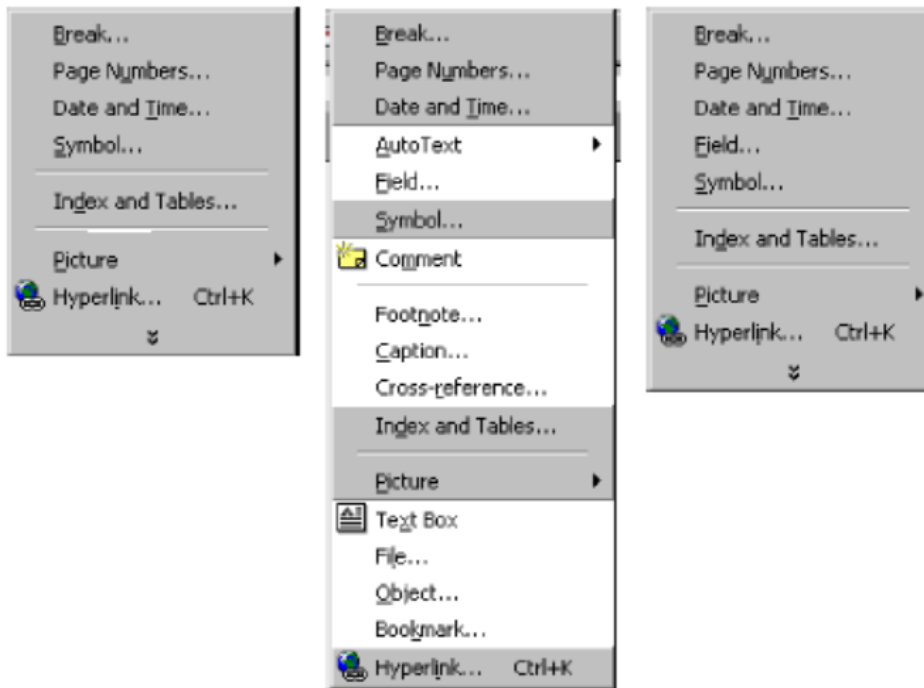
Guests can  mo

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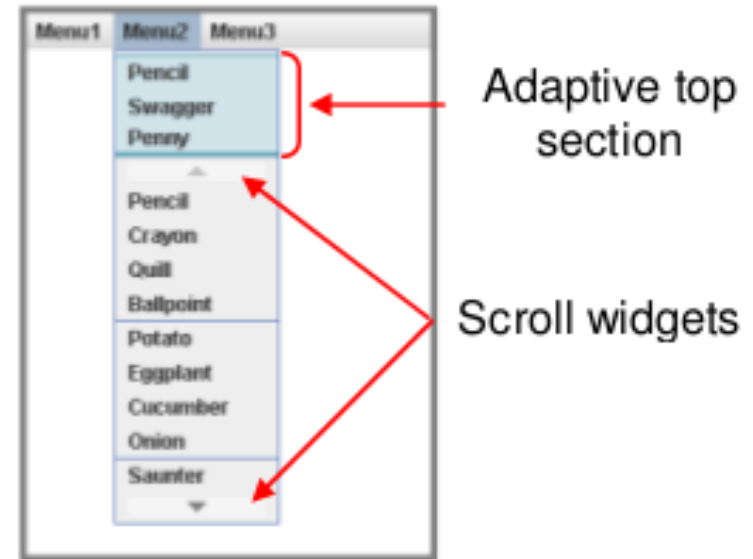
se

# Application: Adapting Interface

- to fit better with the way the user uses the system



Microsoft Office Smart Menus



Adaptive top menu  
(prototype)

# Application: Adapting Interface

## Example: the Smashing Magazine

Big screen, desktop

**SMASHING MAGAZINE**

Books  
eBooks  
Job Board  
Shop

**CODING**  
CSS  
HTML  
JavaScript  
Techniques

**DESIGN**  
Web Design  
Typography  
Inspiration  
Business

**MOBILE**  
Responsive  
iPhone & iPad  
Android  
Design Patterns

**GRAPHICS**  
Photshop  
Illustrator  
Wallpapers  
Freebies

**UX DESIGN**  
Usability  
User Experience  
UI Design  
E-Commerce

**MOBILE DESIGN'S WAKE-UP CALL**

### Preparing Websites For The Unexpected

By [Ben Gremillion](#)

January 14th, 2013 | [Responsive Design, Strategy](#) | 25 Comments

Designing websites for smartphones is easy compared to retrofitting those already in place. More than that, it's embarrassing how, almost eight years after CSS gained practical acceptance, a lack of foresight haunts those of us who write HTML.

Converting older websites to responsive design causes headaches not because small screens are difficult, but because most HTML documents were written under an assumption about screen size. Prior to the iPhone's introduction in mid-2007, designers could rely on windows at least 700 pixels wide (if they ignored accessibility). Conventions like navigation bars, two- and three-column layout and hover effects evolved to fit the mouse-based wide-screen standard. Designers made their upper left corner logos clickable [because it was expected](#).

Mobile devices shake old habits in two ways. Now, not only do we have small-screen iPhones, Android phones, Kindles, iPads and other mobile devices, but we're asking websites to adapt to whichever device comes knocking. You want [CNN on an xBox](#)? It could happen. You want Smashing Magazine on a [Web-enabled TV](#)? If it's not here, it will be soon.

Designing for future cases **affects both page layout and website structure**. We can't control on which devices our digital content is viewed — rather, *experienced*. No amount of "best viewed with..." badges will stop people from reading and remixing what we write, paint, compose or otherwise create. Web pages don't *have* to use 12- or 16-column grids, and websites don't *have* to follow strict hierarchies. But getting there means facing a legacy that did.

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### Mobile Is Also A Content Problem

Let's say you're employed by a large company. Surveys indicate that [many customers are more likely to visit your website with a smartphone](#). The large company is planning a redesign of their existing site. Your organization (or more likely you and your Web-savvy coworkers) adopts a [mobile-first strategy](#). Yet before sketching icons, perusing [responsive grids](#) or cramming HTML5, one fact threatens to derail the redesign project. The content isn't just ill-formatted for small screens — it's ill-formatted for anything other than desktop browsers less than 960 pixels wide.

Search on Smashing Magazine

e.g. Responsive design

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We code your design to **HTML5/CSS3** [PSD to HTML5/CSS3](#)

# Application: Adapting Interface

## Example: the Smashing Magazine Normal screen, desktop

The screenshot shows the Smashing Magazine website on a desktop screen. The layout is clean and professional, with a clear navigation structure. The main content area features a featured article with a large title and a byline. The right sidebar contains several promotional banners for various services and products. The overall design is modern and user-friendly, with a focus on readability and ease of navigation.

**SMASHING MAGAZINE**

Books eBooks Job Board Shop

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**CODING**

- CSS
- HTML
- JavaScript
- Techniques

**DESIGN**

- Web Design
- Typography
- Inspiration
- Business

**MOBILE**

- Responsive
- iPhone & iPad
- Android
- Design Patterns

**GRAPHICS**

- Photoshop
- Illustrator
- Wallpapers
- Freebies

**UX DESIGN**

- Usability
- User Experience

**MOBILE DESIGN'S WAKE-UP CALL**

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# Application: Adapting Interface

## Example: the Smashing Magazine

Small screen, desktop  
Landscape, 10" tablet

The screenshot displays the Smashing Magazine website on a desktop screen. The top navigation bar includes the Smashing Magazine logo and links for Books, eBooks, Job Board, and Shop. Below this is a secondary navigation bar with categories: CODING, DESIGN, MOBILE (highlighted), GRAPHICS, UX DESIGN, and WORDPRESS. The main content area features an article titled "Preparing Websites For The Unexpected" by Ben Gremillion, dated January 14th, 2013, with 25 comments. The article text discusses the challenges of designing for mobile devices. The right sidebar contains several advertisements, including one for Shutterstock, one for Dream Template (Amazing Web Templates), one for PSD2HTML.com (You Design We HTML), one for Fat Bottom Line (The Online Accounting Software), and one for HTML5/CSS3 design services.

**SMASHING MAGAZINE** Books eBooks Job Board Shop

CODING DESIGN **MOBILE** GRAPHICS UX DESIGN WORDPRESS

**MOBILE DESIGN'S WAKE-UP CALL**

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# Application: Adapting Interface

## Example: the Smashing Magazine

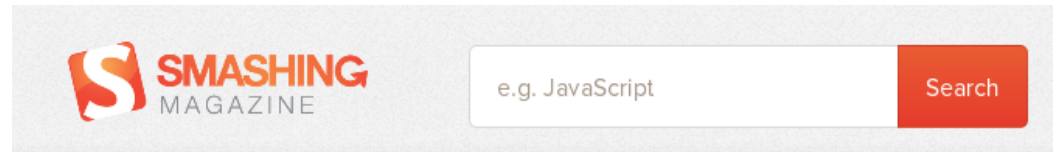
Portrait, 10" tablet  
Landscape, 7" tablet

The screenshot shows the Smashing Magazine website interface on a tablet. At the top left is the logo for Smashing Magazine. To its right is a navigation bar with links for Books, eBooks, Job Board, and Shop. Further right are social media icons for RSS, Facebook, Twitter, and YouTube. Below the navigation is a search bar containing the text "e.g. JavaScript" and a red "Search" button. The main content area is divided into two columns. The left column is a sidebar with a "CODING" section containing links for CSS, HTML, JavaScript, and Techniques. Below this is a "DESIGN" section with links for Web Design, Typography, Inspiration, and Business. At the bottom of the sidebar is a "MOBILE" section. The right column features an article titled "MOBILE DESIGN'S WAKE-UP CALL" with the main heading "Preparing Websites For The Unexpected" by Ben Gremillion. The article is dated January 14th, 2013, and has 25 comments. The article text begins with "Designing websites for smartphones is easy compared to retrofitting those already in place. More than that, it's embarrassing how, almost eight years after CSS gained practical acceptance, a lack of foresight haunts those of us who write HTML." An "Advertisement" placeholder is visible to the right of the article text.

# Application: Adapting Interface

Example: the Smashing Magazine

Portrait, 7" tablet  
Smartphones



Mobile

MOBILE DESIGN'S WAKE-UP CALL

## Preparing Websites For The Unexpected

By [Ben Gremillion](#)

🕒 January 14th, 2013    📖 [Responsive Design, Strategy](#)    💬 [25 Comments](#)

Designing websites for smartphones is easy compared to retrofitting those already in place. More than that, it's embarrassing how, almost eight years after CSS gained practical acceptance, a lack of foresight haunts those of us who write HTML.

Advertisement

# Application: Adapting Interface

Example: the Smashing Magazine

Small smartphones  
Feature phones



Mobile

MOBILE DESIGN'S WAKE-UP CALL

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 January 14th, 2013

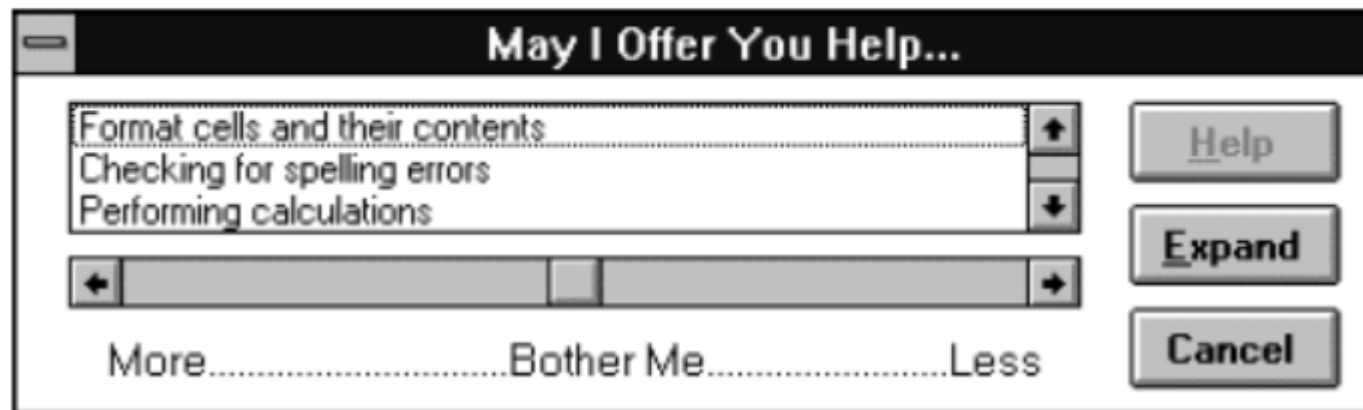
 [Responsive Design, Strategy](#)

 [25 Comments](#)

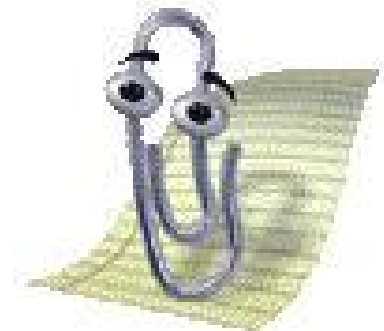
Designing websites for smartphones is easy compared to retrofitting those

# Application: Giving Advice

- offer information and advice about how to use the application



LUMIERE prototype



Microsoft Office Assistant

# Application: Dialog Control

- Different dialog strategies for different situations

*Beginning with ambitious dialog strategy:*

*S:* Hi, this is AT&T Amtrak Schedule System. This is TOOT. How may I help you?

*U:* I need to find a train going to New York City.  
*(Interpretation by speech recognizer: "DC I don't care on Thursday".)*

*S:* Which city do you want to leave from?

*U:* Baltimore.

*S:* Do you want me to find the trains from Baltimore to DC on Thursday at anytime now?

*U:* No

*S:* ...

*After two switches to more conservative dialogue strategies:*

*S:* Which city do you want to go to?

*U:* New York City.

*S:* Do you want to go to New York City?

*U:* Yes.

*S:* Which city do you want to leave from?

*U:* ...

TOOT prototype.

# Application: Help Finding Information

- help user to find relevant electronic documents based on the user's profile
  - by recommending documents
  - by indexing them by relevance
  - by providing the information spontaneously

Walking  
with  
Dinosaurs

The O2 Arena  
Peninsula Square  
London SE10 ABC



Ticket Reminder  
Show starts at 7:00pm

 [Get directions](#)

 [View email](#)

Google Now gives you data  
about the teams you have  
searched before

It also gives you sensitive  
information based on your  
agenda, in a timely manner

MLB Regular Season



1

TOP  
NINTH

4



Clovers

Blaze

Today @Blaze

	1	2	3	4	5	6	7	8	9	R	H	E
Clovers	0	0	1	0	0	0	0	0	-	1	2	2
Blaze	0	0	1	1	0	2	0	0	-	4	8	0

[Play-by-Play](#)

# Application: Help Finding Information

The screenshot shows the DuckDuckGo website interface. On the left is a sidebar titled 'GOODIES' with a star icon and the text 'Everyday Goodies'. Below this are various category icons and labels: Cryptography, Economy and Finance, Entertainment, Food and Drink, Gaming, Geek, Geography, Math, Music, Programming, Science, Social, Special Interest, Sysadmin, Travel, and Trivia. The main content area is titled 'EVERYDAY' and features a 'Calculations' section with several utility tools: '20% tip on \$21.63' (Calculate a total including a percentage tip), '64\*343' (Basic calculations), 'days between 01/01/2000 01/01/2001' (Calculate the number of days between two dates), 'multiples of 42' (Calculate multiples and divisors), and 'square root of nine' (Calculate numeric roots). Below 'Calculations' are sections for 'Cheat' (for lorem ipsum), 'Computing' (password 15 strong), 'Computing Tools' (alternative to notepad), and 'Conversions' (1am to 4:30pm).










# Application: Help Finding Information

GOODIES	MUSIC
★ Everyday Goodies	Entertainment <input type="button" value="−"/>
⚙️ Cryptography	<b>os</b> <a href="#">American Idiot album by Green Day</a> Shows album information
📈 Economy and Finance	<b>sg</b> <a href="#">Green Day schedule</a> Find concert tickets
🎬 Entertainment	<b>os</b> <a href="#">Payphone song by Maroon 5</a> Song information
🍷 Food and Drink	<b>os</b> <a href="#">albums from Ben Folds</a> Top albums from an artist
🎮 Gaming	<b>os</b> <a href="#">ben folds five artist</a> Musician information
👓 Geek	<b>lm</b> <a href="#">i'm a walking contradiction</a> Song lyrics via LyricsMode
🌍 Geography	<b>os</b> <a href="#">popular songs</a> Popular songs
📊 Math	<b>os</b> <a href="#">songs by she &amp; him</a> Top tracks from an artist
🎵 Music	Language <input type="button" value="−"/>
🔗 Programming	<b>rh</b> <a href="#">rhyme list</a> Find rhyming words
🧪 Science	<b>syn</b> <a href="#">synonyms for person</a> Related words
👥 Social	<b>wh</b> <a href="#">what rhymes with duck</a> Find rhyming words
🐛 Special Interest	
👤 Sysadmin	



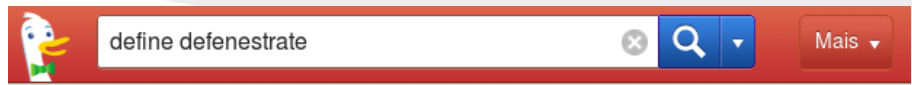


# Application: Help Finding Information

GOODIES	SYSADMIN
★ Everyday Goodies	Calculations <input type="button" value="−"/>
⚙️ Cryptography	 <a href="#">12343435 time</a> Convert a Unix epoch time to text
📈 Economy and Finance	 <a href="#">6GB/700KB/s in min</a> Data rate conversions
🎬 Entertainment	 <a href="#">unix time 0000000000000</a> Convert a unix epoch to human-readable time
🍷 Food and Drink	Cheat <input type="button" value="−"/>
🎮 Gaming	 <a href="#">private network</a> Display private network information
👓 Geek	Cheat Sheets <input type="button" value="−"/>
🌍 Geography	 <a href="#">private networks</a> Show private IP blocks
📊 Math	 <a href="#">public dns</a> List common public DNS servers and their IP addresses
🎵 Music	Computing <input type="button" value="−"/>
📁 Programming	 <a href="#">12343435 time</a> Convert a Unix epoch time to text
🧪 Science	
👥 Social	



# Application: Help Finding Information



Grid of application icons: LibreOffice, Google Docs, Apache OpenOffice, Kingsoft Writer, Lotus Symphony, and Apple iWork. Below the icons is a link: [Mais em AlternativeTo](#)

**Free OpenOffice Download - Looking for OpenOffice?**  
Download the latest version of OpenOffice now.  
[softgu.com](http://softgu.com) [► Link patrocinado](#)

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We have wholesale **office** furniture categorized and significantly reduced in price. Selling your furniture? Contact **Alternative Office** Source for evaluation of your stock.  
[alternativeofficesource.com](http://alternativeofficesource.com)

**Microsoft Office Alternatives**



# Duck Duck Go

**defenestrate (definition)**  
de-fen-es-trat-ed, de-fen-es-trat-ing, de-fen-es-trates To throw out of a window.  
[Mais em The Free Dictionary](#)

**Google Is a Glossary | Exploring Google's Hidden Features | InformIT**  
So, for example, if you want to **define** the word "**defenestrate**," enter the qu...  
[informit.com/articles/article.aspx?p=675528&seqNum=5](http://informit.com/articles/article.aspx?p=675528&seqNum=5) [► Link patrocinado](#)

**Defenestrate | Define Defenestrate at Dictionary.com**  
**Defenestrate** definition, to throw (a person or thing) out of a window.  
**defenestrate**. de-fen-es-trate. /di'fen e, streit/ Show Spelled [dee-fen-uh-streyt] Show IPA.  
[dictionary.reference.com/browse/defenestrate](http://dictionary.reference.com/browse/defenestrate) [► More results](#)

**Define defenestrate? | ChaCha**  
**Define defenestrate?** ChaCha Answer: **Defenestrate**:1:throw through or out of the window.  
[chacha.com/question/define-defenestrate](http://chacha.com/question/define-defenestrate)

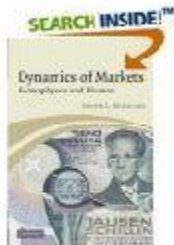
**defenestrate videos - by Video Site**  
The Animated Dictionary **Defines "Defenestrate"**. Length: 1:12. Rating Average: 4.135135' max='5' min='1' numRaters='37'  
rel='http://schemas.google.com/g/2005#overall from people.  
[dvbs.eu.org/defenestrate/](http://dvbs.eu.org/defenestrate/)

# Application: Product Recommendation

- Give ideas about what to buy, use or do
- Based on trends of the user behaviour, friends, or answers on opinion forms
- Examples:
  - Amazon recommendations
    - A lot of other e-commerces offer this

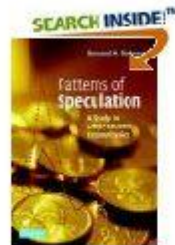
## More to Explore

You looked at

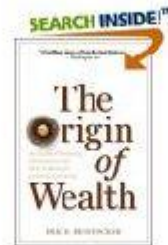


[Dynamics of Markets: Econophysics and...](#)  
Hardcover by Joseph L. McCauley  
~~\$77.92~~

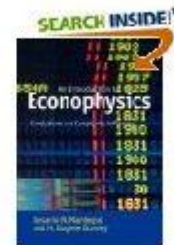
You might also consider



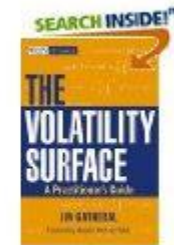
[Patterns of Speculation: A Study in...](#) Paperback by Bertrand M. Roehner  
~~\$39.99~~ **\$35.99**



[Origin of Wealth: Evolution...](#) Paperback by Eric D. Beinhocker  
~~\$16.00~~ **\$10.88**



[Introduction to Econophysics...](#) Paperback by Rosario N. Mantegna, H...  
~~\$32.99~~



[The Volatility Surface: A...](#) Hardcover by Jim Gatheral, Nassim...  
~~\$80.00~~ **\$37.80**

# Another example: FourSquare Explorer



THIS PLACE IS ON A LIST YOU CREATED



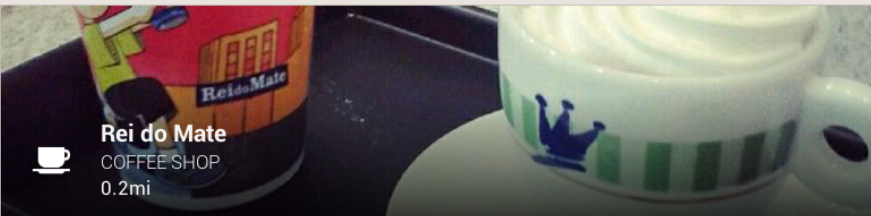
Os novos Refreshers de verão são deliciosos!



8 friends have been here



RODRIGO MOREIRA MARTINS HAS BEEN HERE



Mate com menta ou com abacaxi, com esse calor do Hell de Janeiro, essas bebidas são de gelar.



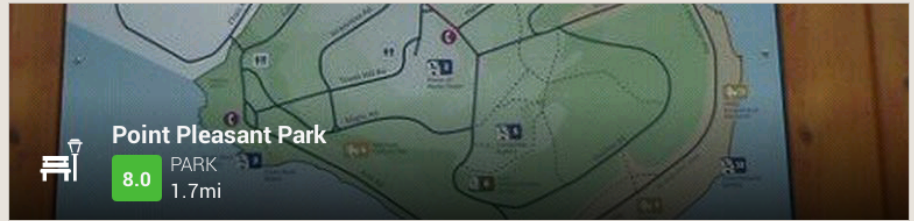
1 friend has been here



YOU'VE BEEN TO 3 SIMILAR PLACES



YOU'VE BEEN HERE BEFORE



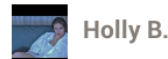
Go for a jog at Sunset or sunrise along the outer trail of Pleasant Park & just enjoy the view!



YOU'VE BEEN TO A SIMILAR PLACE



Home of Cheer Expo



THIS SPOT IS POPULAR WITH OUT-OF-TOWNERS



# Application: Information Presentation

- determine the best way to present a document to the user

Services offered	
Facilities:	<i>Credit cards accepted: Yes Groups allowed: Yes Animals allowed: Yes</i>
Laundry service:	<i>Yes, accessible</i>
Car service to station:	<i>No</i>
Car park:	<i>None</i>
Cash-register service:	<i>Yes, accessible</i>
Lift:	<i>Connects all floors</i>
Shared bathrooms:	<i>Yes</i>
Access to public areas:	<i>Presents no obstacles; 3 stairs into the bar</i>

AVANTI tourist  
information system

# Application: Support Collaboration

- Help users collaborate, based on their profiles

**PHelpS - Get Help**

Online Help | Case-Based Help | Peer Help | Power User Help

**Suggested Helpers:**

- Bruce Howlett
- Sandra Church**
- Malcolm Chlan
- Judy Senger
- Chad Gervais

**Suggestion Filter**

All  
 Online  
 Last  hours.

**Helper Profile**

Task: Escorted Temporary Absence

- Escorted Temporary Absence
  - ★ Offender fills out paper ETA application
  - Assess suitability of ETA request
    - Initial assessment of ETA request
      - ★ Determine whether offender is eligible for ETA
        - ★ Go to Sentence Management System
        - ★ Select 3: Sentence/Term Information
        - ★ **Select 6: TERM-INCARCERATION**
        - ★ Detention Order or Recommendation
        - ★ If offender is detained or recommended for release
      - ★ Notify offender's primary work

**Helper Info**

Job Title: Correctional Officer II

Facility: Regional Psychiatric Centre (Praies)

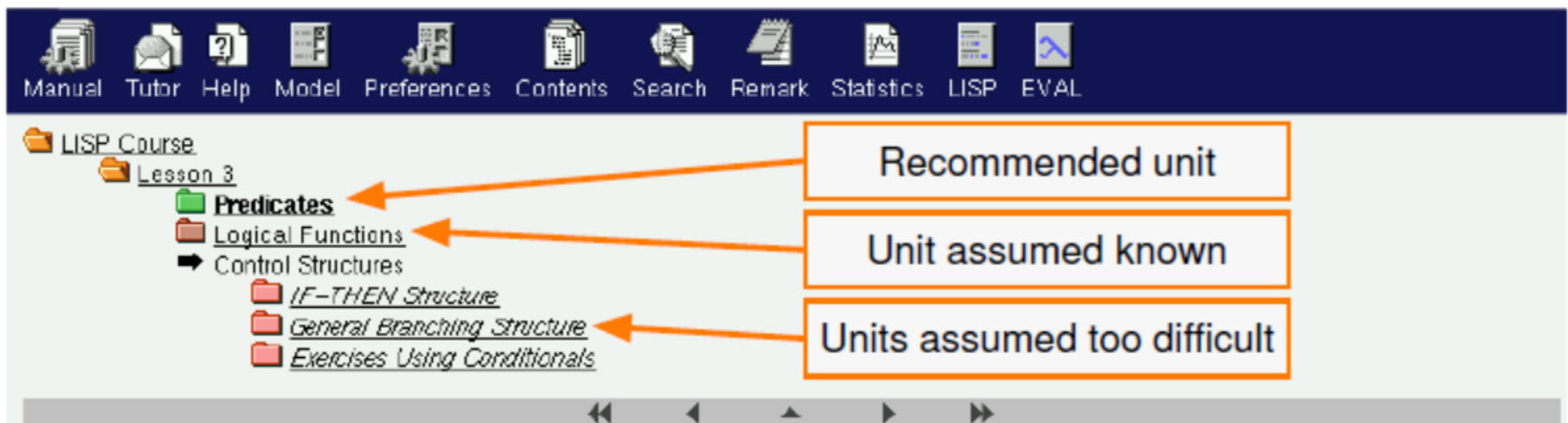
Phone: x3276      Email: church\_s

<< Hide Additional Info

Start Collaborative Communication       Cancel

# Application: Support Learning

- based on the user's profile, alters:
  - the way the information is presented
  - the content of tests
  - the content and timing of hints and feedback
- supports the navigation through the content



ELM-ART system

# Challenges

- predictability and transparency
- controllability
- unobtrusiveness
- privacy
- breadth of experience

# Challenge: Predictability/Transparency

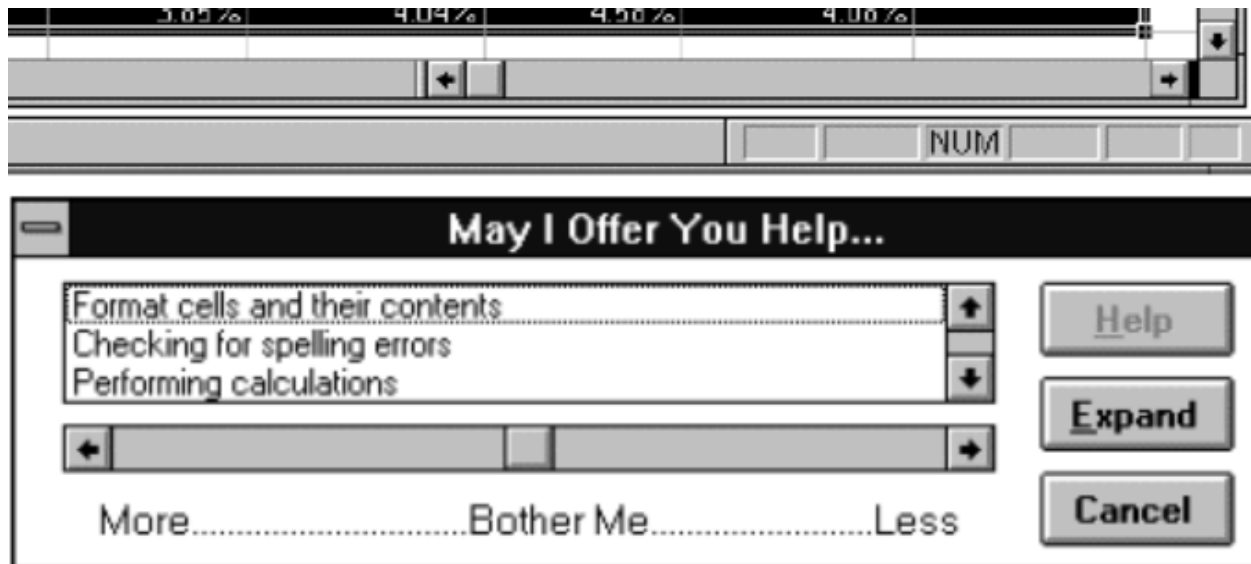
- Whether if the user can understand what's going to happen after an action she takes
  - if I click this hidden option, will it be visible in the next time I need it?
- System's competence
  - if the user thinks the system is too good, she can rely too much on it and have trouble later
  - if the user underestimates the system, she may not benefit fully of it

# Challenge: Controllability

- If the user dislikes some behaviour of the system, she should be able to disable that
  - What if I clicked a menu option wrong, and I don't want it to appear in the main menu? Can I hide specifically that option?
- The user could be able to fine-tune the system's actions
- Enhanced by Transparency and Predictability, so the user can understand what's happening, but she still need to be able to change it

# Challenge: Unobtrusiveness

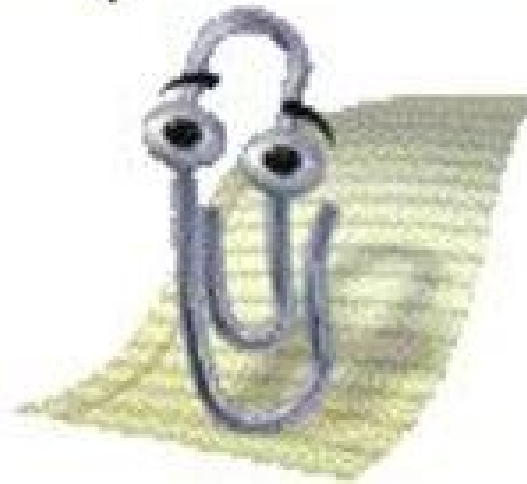
- Let the user do what she's doing
- Help the user instead of bother
- Less questions, more inference
- You're a computer, not a human



The Lumiere prototype let the user say the assistant is bothering instead of helping, so the system will be less intrusive next time. Also, if the user ignores the box, it apologizes and goes away silently.

# Challenge: Unobstrusiveness

Sometimes I just popup for no particular reason, like now.

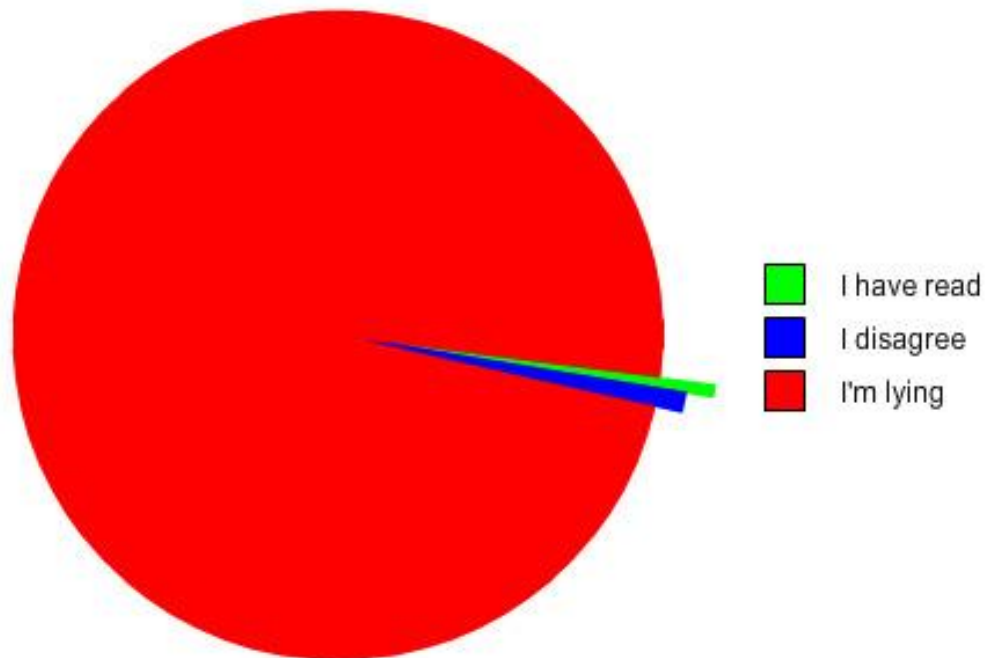


# Challenge: Privacy

- Do you really need to know everything about your user to do your job?
- Tell the user what's that information for
- Rules here usually apply to all kinds of information systems
- Very common concerns in e-commerces, that have other reasons to use your information without your consent

# Challenge: Privacy

**I have read and agree to the terms of service.**



# Challenge: Breadth of Experience

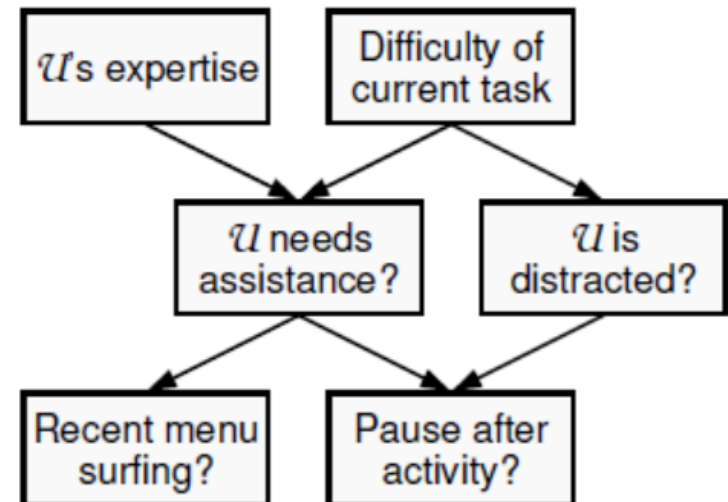
- Shortening the user options (just because you know they're not going to choose some other) can also lead them to learn less about your system
- Incompleteness of relevant information can make your system give less useful ideas
- Filter bubble

# Obtaining Information

- **Explicit Self--Reports and -Assessments**
  - Objective Personal Characteristics
  - General Dimensions
  - Specific Evaluations
  - Responses to Test Items
- **Non-explicit Input**
  - Naturally Occurring Actions
  - Previously Stored Information
  - Low--Level Indices of Psychological States

# Learning about the User

- Techniques used to learn and make inferences about the user
  - Classification (Machine Learning)
  - Collaborative Filtering
  - Decision--Theoretic Methods (e.g.: Bayesian networks)
  - Plan Recognition
  - Stereotype Approach



# Evaluation of the System

- Used to determine the accuracy of the adaptations, and to evaluate usability.
  - Wizard--of--Oz Studies
  - Simulations Using Data From a Non-adaptive System
  - Controlled Studies comparing System
  - Studies of Actual System Use

# References

- [1] Jameson , A. (2003). **Adaptive Interfaces and Agents.**
- [2] Bierig, R., Goker, A. (2006) **Time, Location and Interest An Empirical and User-Centred Study.**
- [3] Findlater, L., McGrenere, J. (2008) **Impact of Screen Size on Performance, Awareness, and User Satisfaction With Adaptive Graphical User Interfaces.**
- [4] Lavie, T., Meyer, J. (2010) **Benefits and costs of adaptive user interfaces.**
- [5] Benyon, D., Murray, D. (1993) **Developing Adaptive Systems to Fit Individual Aptitudes.**

# Activity!

Group discussion. Please organize yourselves in a round-ish group.



# Activity!

Google now

# Activity!

Have you ever heard about  
Google Now before?

# Your behaviour

## Embarcadero

Train station

- Pittsburg/Bay Point to... 11:25pm  
Inbound - Limited
- Fremont to Daly City 11:35pm  
Outbound - Local
- Richmond to Daly City... 11:45pm  
Outbound - Bullet

All scheduled departures

Directions

## MLB Regular Season

1 TOP NINTH 4 Blaze

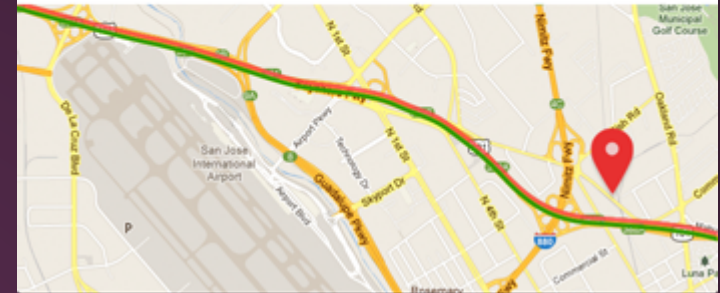
Today @Blaze

	1	2	3	4	5	6	7	8	9	R	H	E
Clovers	0	0	1	0	0	0	0	0	-	1	2	2
Blaze	0	0	1	1	0	2	0	0	-	4	8	0

[Play-by-Play](#)

55 minutes to work

Light traffic on 101



## 42 miles in August

23 miles less than July

Summary of July & August

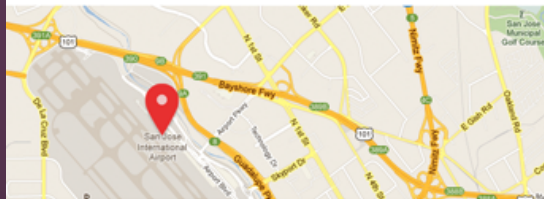
13 miles walking  
26 miles walking

52 miles cycling  
22 miles cycling

Based on your device's location which is periodically sent to google. [Learn more](#)

## Lunch with Brad @ 12pm

2368 3rd Street, San Jose, CA 94107



[Get directions / 33min](#) via 101

[Alternate route / 45min](#) via 280

## Trip to Versailles

Continue your research



### Paris by train

Get instant train tickets and seat reservations from Rome...

[parisbytrain.com](#)

### Route planner in Paris

Tips and tricks to get the best out of your journey around the city...

[parisbytrain.com](#)

### A Day Trip to Versailles

There are hundreds of must see sites in Versailles here are the top 10...

[transillient.com](#)

[Explore more](#)

# Your e-mail

## Walking with Dinosaurs

The O2 Arena  
Peninsula Square  
London SE10 ABC



Ticket Reminder  
Show starts at 7:00pm

 [Get directions](#)

 [View email](#)

## Pacific Airlines flight 2340



Status: **Delayed** / Wed, June 27, 2012

Depart San Francisco

**SFO** 7:09pm (sched. 5:20pm)  
Terminal 4, Gate A3

Arrive Taipei

**TPE** 10:32pm  
Terminal 2, Gate 50

 [Navigate to SFO / 34 min](#)

## The Connaught Hotel

Carlos Place, Mayfair, London  
W1K 2AL, United Kingdom

Check-out in 1 hour



 [Get directions](#)

 [View email](#)

## La Gavroche

43 Upper Brook Street, London, W1K 7QR

Reservation in 1 hour  
Journey time walking 45 minutes



 [Get directions](#)

 [View email](#)

## Package shipped

5.26pm Thursday August 10

Iron Man 2 (Three-Disc Blu-ray/DVD Combo)  
Prometheus (Blu-ray/ DVD + Digital Copy)...

From: The Business Card Shop  
UPS Standard Delivery

 [Track Package](#)

 [View email](#)

# Your routine

## Popular photo spot nearby



 < 5 mins

Touch a photo to learn more

## Lunch with Brad @ 12pm

2368 3rd Street, San Jose, CA 94107






 [Get directions / 33min](#) via 101

 [Alternate route / 45min](#) via 280

## Embarcadero

Train station

-  Pittsburg/Bay Point to... 11:25pm  
Inbound - Limited
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Outbound - Local
-  Richmond to Daly City... 11:45pm  
Outbound - Bullet

 [All scheduled departures](#)

 [Directions](#)



## Ice Age

John Leguizamo, Ray Romano  
U, 1hr 15min

Cineworld - haymarket, London  
12:00, 1:30, 4:30, 7:25, 10:25pm

 [Search for more theaters](#)

## Tate Britain

9:00 pm - 5:00 am

turner prize ·  
contemporary art



 [More details](#)

 [Look up artworks with image](#)

# Activity!

How does it understand this based on our usage of Google Services?

# Activity!

What could it do that you  
haven't seen yet?

# Activity!

Do you think it's too much information to be analyzed just to help you with your everyday life?