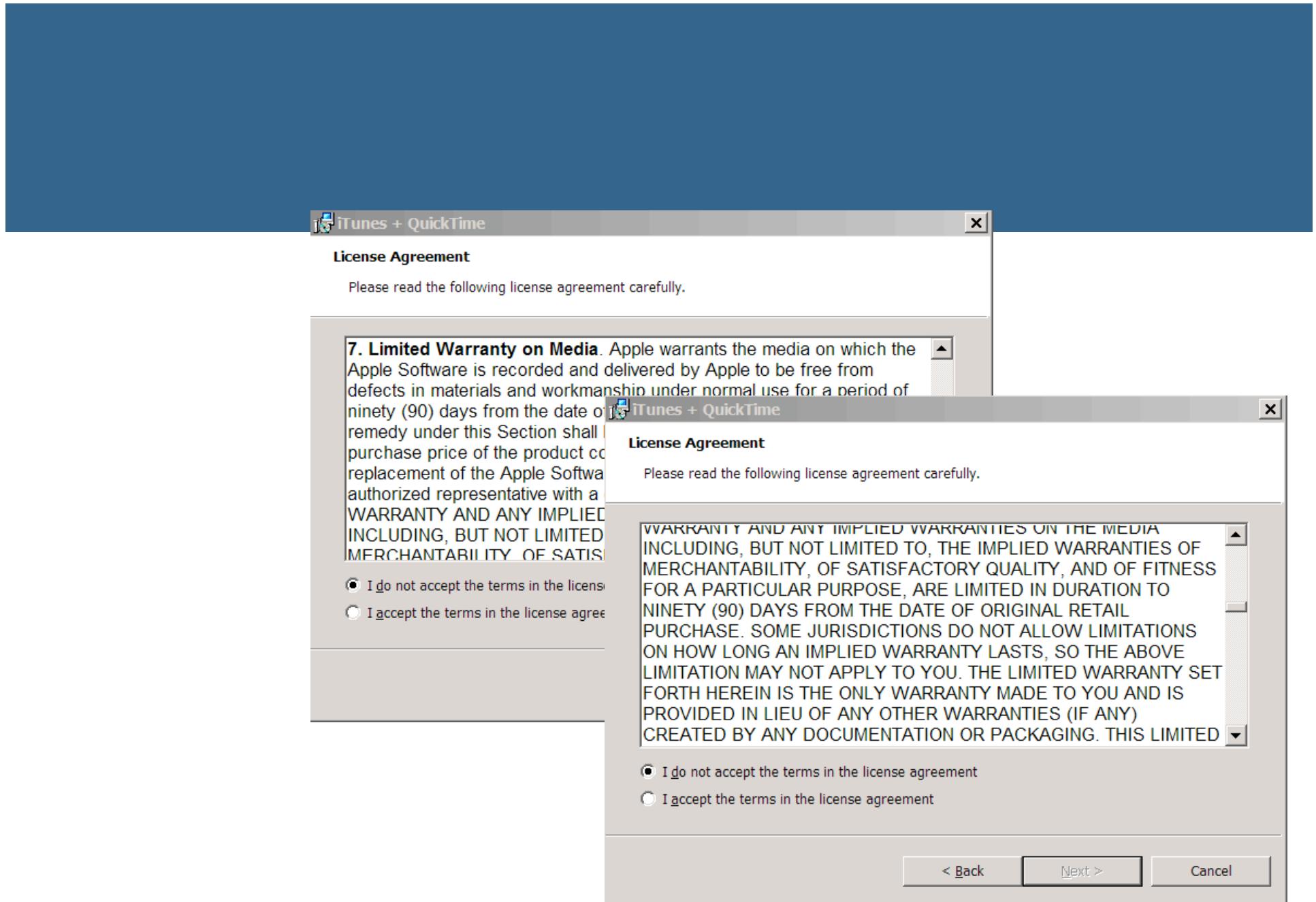


Getting Attention with Software Notices

Matthew Kay
Michael Terry

Human Computer Interaction Lab, <http://hci.uwaterloo.ca>
David R. Cheriton School of Computer Science
University of Waterloo



Outline

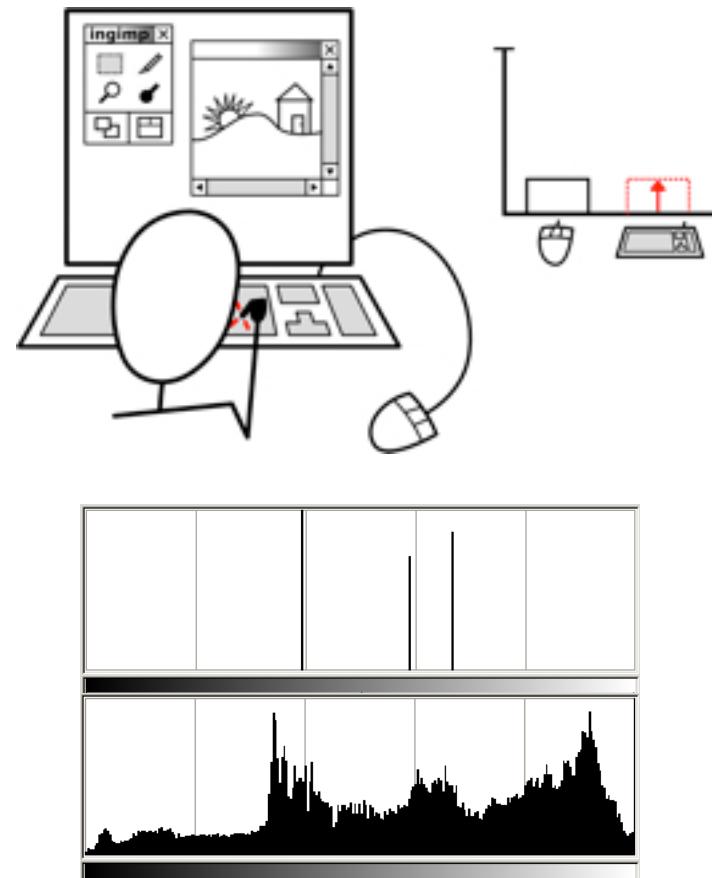
- Motivation: EULAs and ingimp
- Other Attempts to Communicate
- Why People Don't Read
- Redesigning Notices: Textured Agreements
- Summary
- Future Work

Motivation: EULAs

- End-User License Agreements (EULAs) must be agreed to when installing most software
- < 2% of the population reads them
- Vector for “malware” infection; other privacy violations
- Privacy concerns often secondary to task completion
- Ongoing policy debate

Motivation: ingimp

- **ingimp: Instrumented GIMP**
- Collects usability data
 1. System characteristics
 2. Command use
 3. Interface events
 4. Document characteristics
 5. Activity tags



Motivation: ingimp

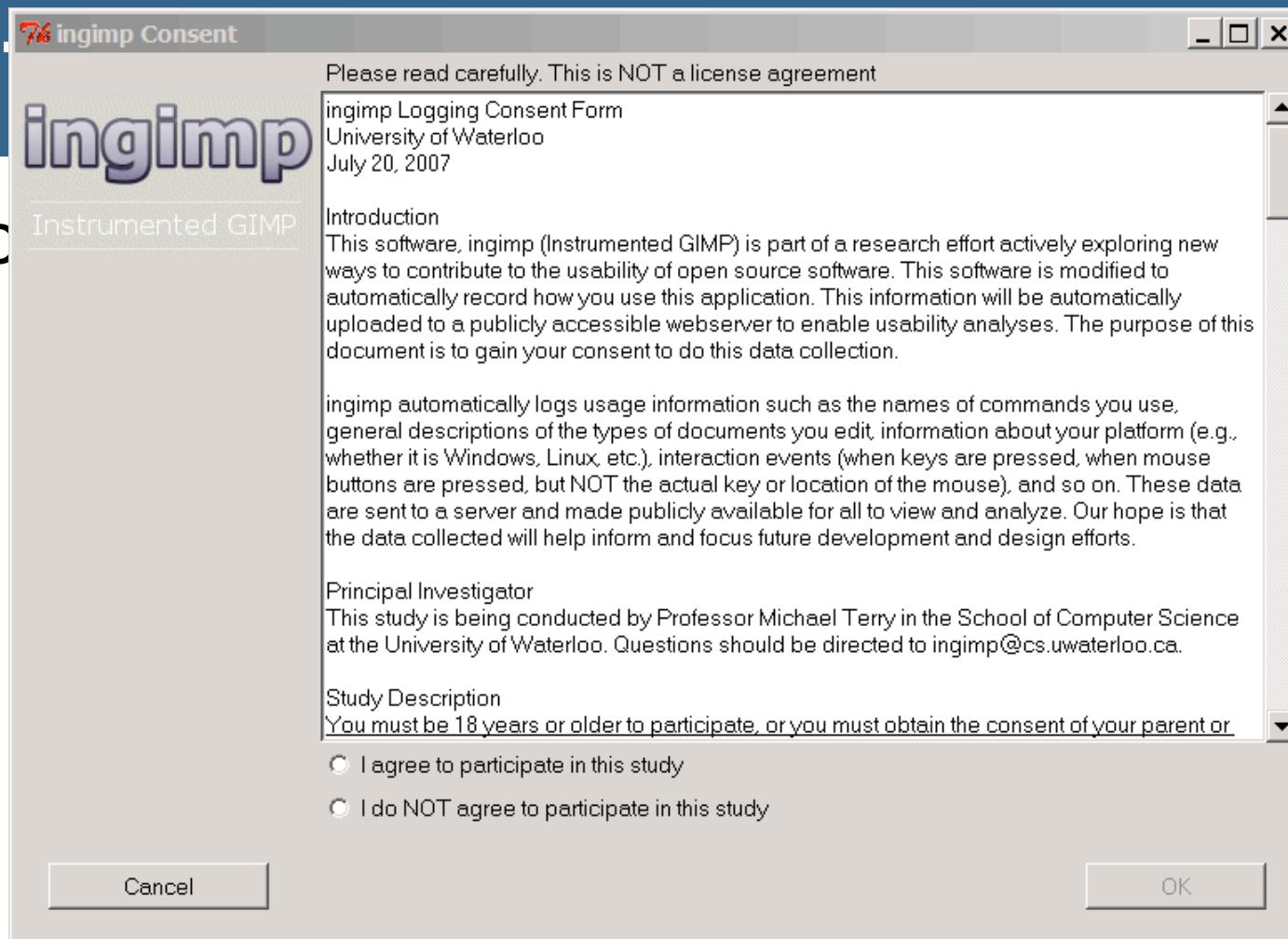
- Lots of data so far
 - over 800 installations
 - over 5,000 logs collected
 - Over 500,000 commands
- All data is anonymized and made publicly available at ingimp.org
- Open analysis

Motivation: ingimp

- Open analysis brings privacy risks
 - Activity tags
 - Script names
- As researchers, we have ethical responsibilities
 - Informed consent
- Open source users also have high trust expectations

Mobile

- Social



Ot

• S
• F
• A
• P

The screenshot shows a Mozilla Firefox window with the title bar "Aviary - Terms - Mozilla Firefox". The address bar displays "http://aviary.com/terms". The main content area is titled "Terms of Use" in red. Below it, a section titled "Legalese" contains the legal text of the terms of use. To the right, there is a sidebar with links to "Privacy Policy" and "Copyright Policy". The sidebar also contains a "Summary" section with a bulleted list of key points. At the bottom left of the main content area, there is a "Done" button.

Terms of Use

Legalese

PLEASE READ THIS AGREEMENT CAREFULLY BEFORE USING THE SERVICES. BY CLICKING ON THE "I ACCEPT TO THE AVIARY TERMS OF USE" CHECKBOX ANYWHERE ON THE AVIARY.com WEBSITE, YOU AGREE TO BECOME BOUND BY THE TERMS AND CONDITIONS OF THIS AGREEMENT. IF YOU DO NOT AGREE TO ALL THE TERMS AND CONDITIONS OF THIS AGREEMENT, DO NOT CLICK ON THE "I ACCEPT TO THE AVIARY TERMS OF USE" CHECKBOX AND YOU WILL NOT HAVE ANY RIGHT TO USE THE SERVICES. AVIARY'S ACCEPTANCE IS EXPRESSLY CONDITIONED UPON YOUR ASSENT TO ALL THE TERMS AND CONDITIONS OF THIS AGREEMENT, TO THE EXCLUSION OF ALL OTHER TERMS; IF THESE TERMS AND CONDITIONS ARE CONSIDERED AN OFFER BY AVIARY, ACCEPTANCE IS EXPRESSLY LIMITED TO THESE TERMS.

The purpose of this website, aviary.com (the "Site"), owned and operated by Aviary, Inc. ("Aviary" or "we"), a Delaware corporation, is to provide collaborative artwork creation services and a platform for users to buy and sell artwork created through use of the Site (the "Services"). The Site is intended for persons and entities wishing to legally view, develop, market and acquire certain rights in and to artwork created using and offered through the Site. The Site is accessed by you ("User" or "you") under the following terms and conditions:

1. ACCESS TO THE SERVICES. Subject to the terms and conditions of this Agreement, Aviary may offer to provide the Services, as described more fully on the Site, and which are selected by you, solely for your own use, and not for the use or benefit of any third party. Services shall include, but not be limited to, any services Aviary performs for you, as well as the offering of any content on the Site. Aviary may change, suspend or discontinue the Services at any time, including the availability of any feature, tool, database, or content. Aviary may also impose limits on certain features and services or restrict your access to parts or all of the Services without notice or liability. Aviary reserves the right, at its discretion, to modify these Terms and Conditions (including, without limitation, changing the amount of the monthly subscription fees charged for Premium Memberships as described in Section 9 below) at any time by posting a notice on the Site, or by sending you a notice via e-mail. You shall be responsible for reviewing and becoming familiar with any such modifications.

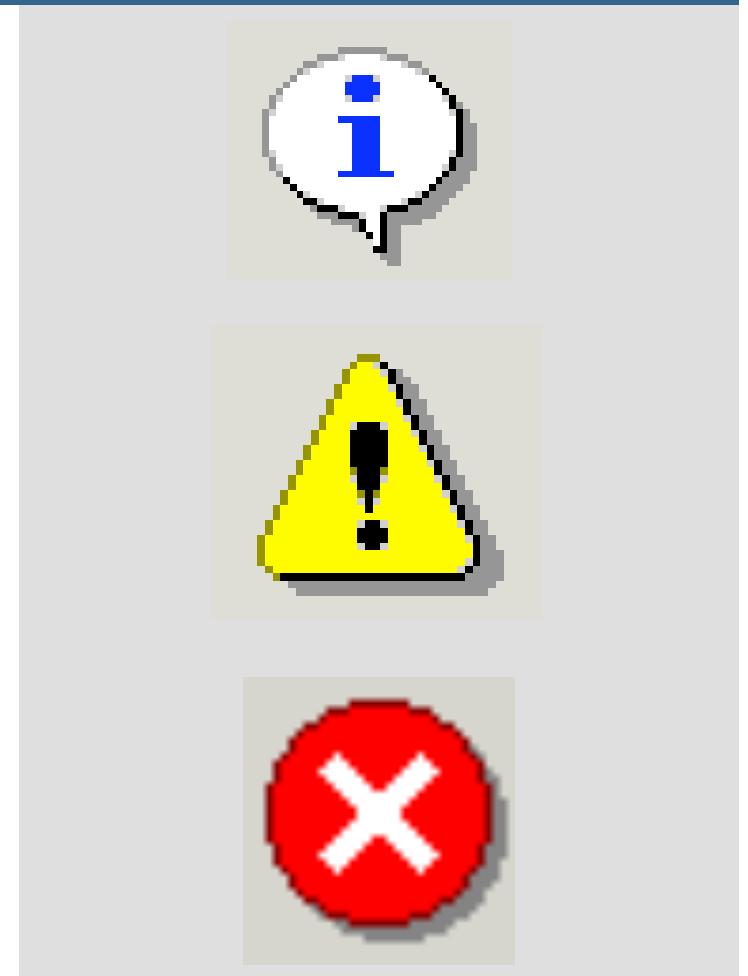
Your use of the Services following such notification constitutes your acceptance of the terms and conditions of this Agreement as modified. You certify to Aviary that if you are an individual (i.e., not a corporate entity) you are (a) of legal age to form a binding contract with Aviary and (b) not barred from receiving the Services under the laws of the United States or other countries including the country in which you reside.

Summary

- You indicate acceptance of these terms by your continued use of the site, after being notified about them.
- Aviary is intended as both a place where anyone can create art, and buy/sell it in its marketplace.
- Aviary may discontinue or suspend any of its services at any time.
- Aviary can place limitations at its discretion on the use of its service.
- We can change this agreement at any time, by placing a notice on our website.
- If you keep using the service after we place a notice up, you indicate you are comfortable with the new terms.
- You must be at least 13 to use the site. If you are under 18, you may only use the site with the consent of a guardian.
- We'll do our best to be up 24/7 but are not responsible in the event of an outage.
- Aviary is not liable in the event of an outage or account suspension.

Taking a Step Back: Why People Don't Read Agreements

- Ineffective Presentation of Information
 - Walls of text
 - Poor **hazard matching**
- Little personal relevance
 - Privacy comes second
 - One-sided “negotiation”
- Desensitization and habituation

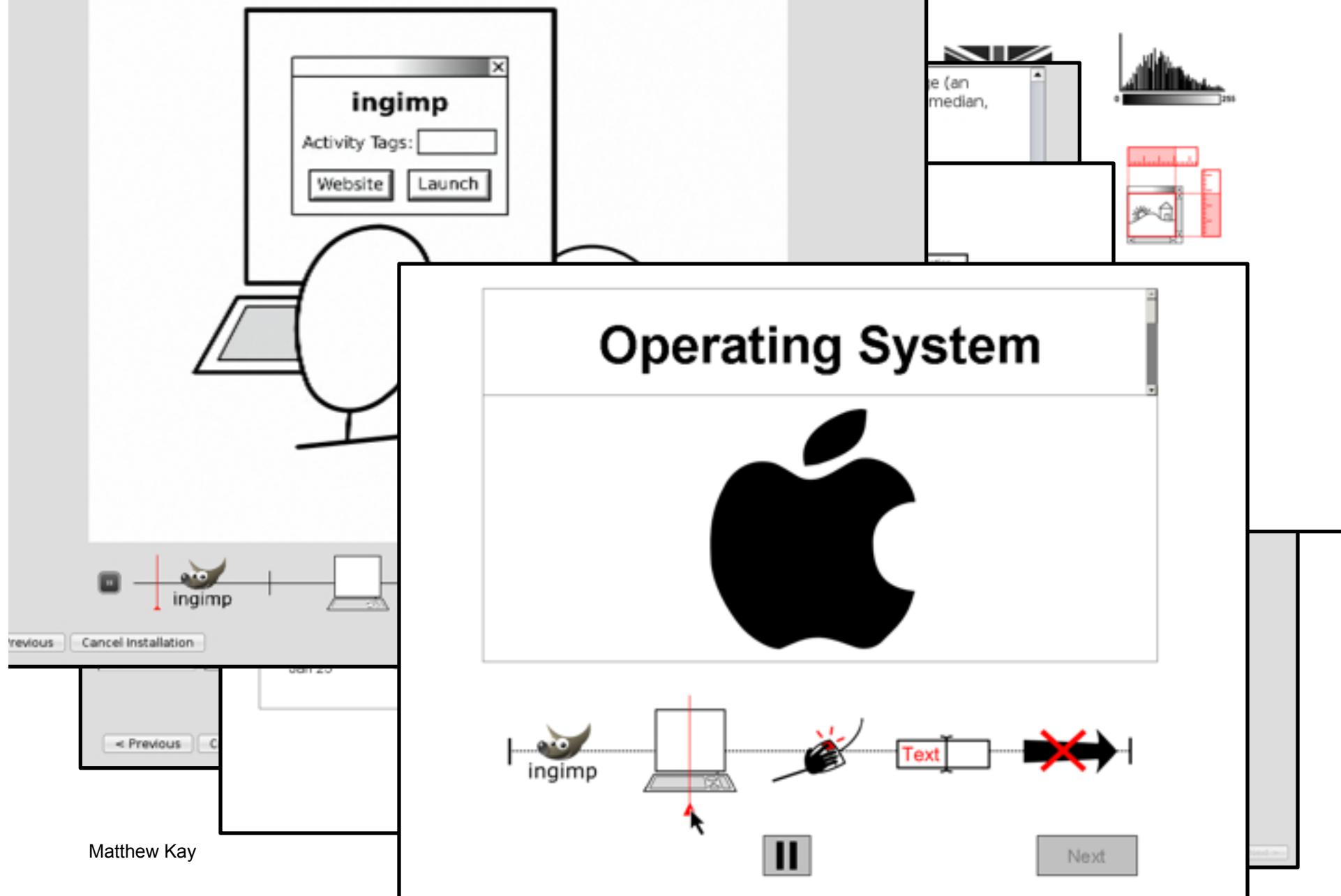


How to Redesign Notices?

- How do we solve these problems?
- Huge design space
- How do we explore solutions to this problem?
 - Rapid prototyping
 - Qualitative evaluations
 - Users, users, users



The following statistics were gathered during your session:



Result?

- Failure
 - Users kept on ignoring us...

But We Did Learn a Few Things...

- Confusion with other interfaces is bad
 - Hazard matching
- Improved visual presentation helps
 - Making an effort to communicate
 - We can turn to the “experts”...



Matthew Kay

Trashy Magazines!

- Financially motivated to grab attention
- Grabbed copies of *Star*, *Us Weekly*, *Glamour*, *GQ*, *Time*, *National Geographic*...
- Looked through and pulled out examples
- Used an affinity diagram to label and cluster related techniques





Matthew Kay



future development and design efforts.

This software collects WHAT?

Principle Investigator: This study is being conducted by Professor John Smith in the Computer Science Department at the Institute of Learning. Questions should be directed to smith@iolearning.com.

You must be 18 years or older to participate, or you must obtain the consent of your parent or legal guardian. Participation is completely voluntary and can be stopped at any time by removing this software or discontinuing its use.

If you choose to participate, you may be asked to fill out a web-based questionnaire. The questionnaire is optional but will help us understand who is using this software.

Once consent to use this software is given, it will log your usage of the software. This version of the software logs the following information.

We Log:

- ▶ Your timezone
- ▶ Your platform and its characteristics (e.g., Windows, Linux, CPU, if available, the version of your operating system, if available...)
- ▶ Characteristics of your images after each command has been applied, including:



We log the names of commands that you use, but not the parameters used for those commands

- ▶ When documents are created, closed, saved, opened, duplicated – essentially, whenever they come into and out of existence
- ▶ Any activity tags you enter to describe how you will use the software (more information below)

The above list is not exhaustive but representative of the types of information recorded.

Your Privacy

Our goal is to honor your privacy in the choice of data collected and how it is

Our Users

percent of people using this software with a digital camera

90

average size of our users' photo collections

121

average age of the people using this software

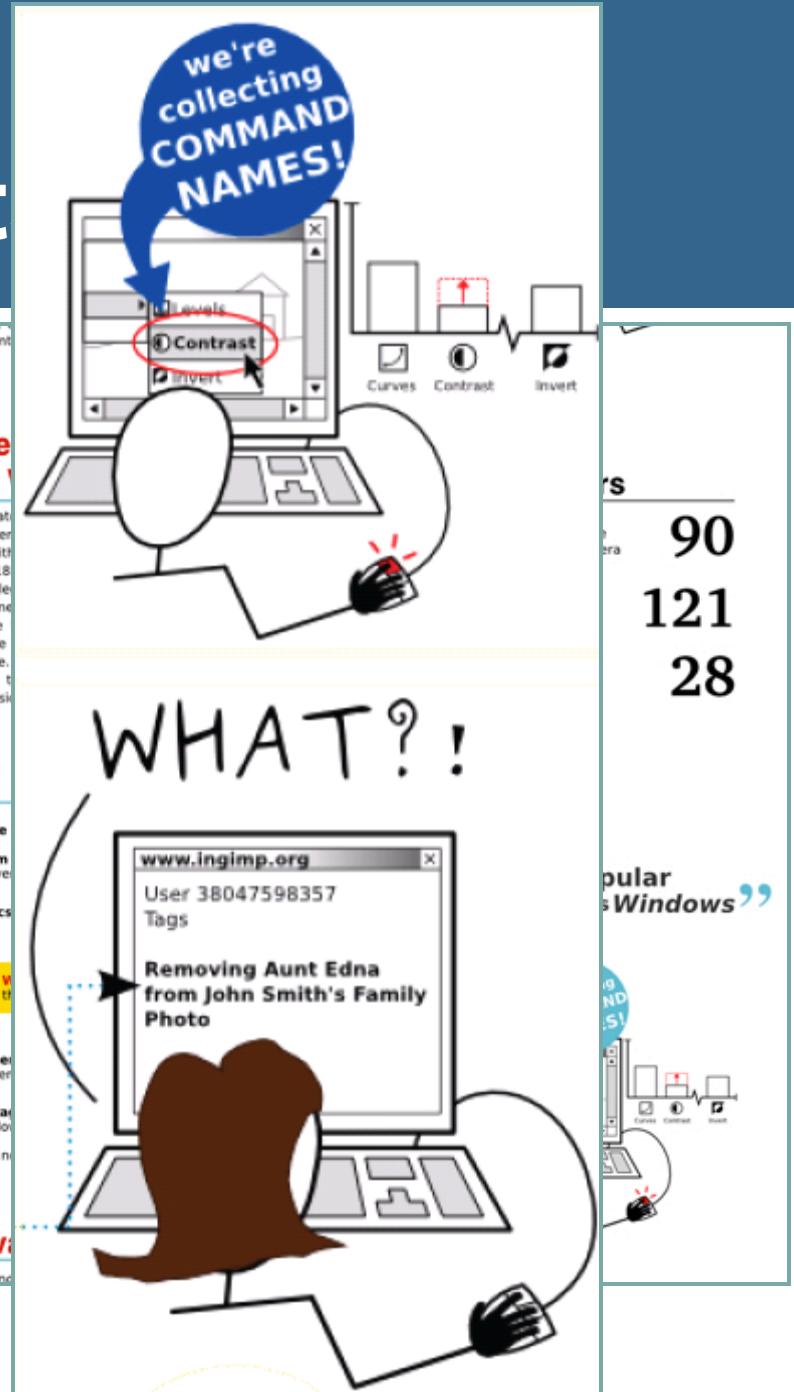
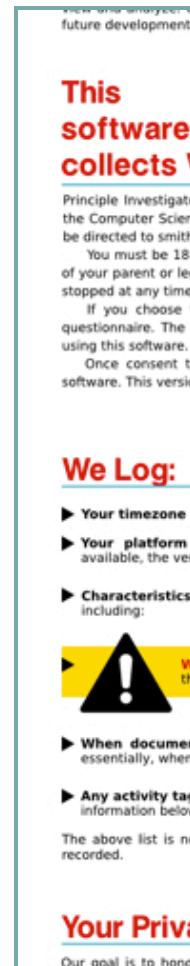
28

“our most popular platform is Windows”



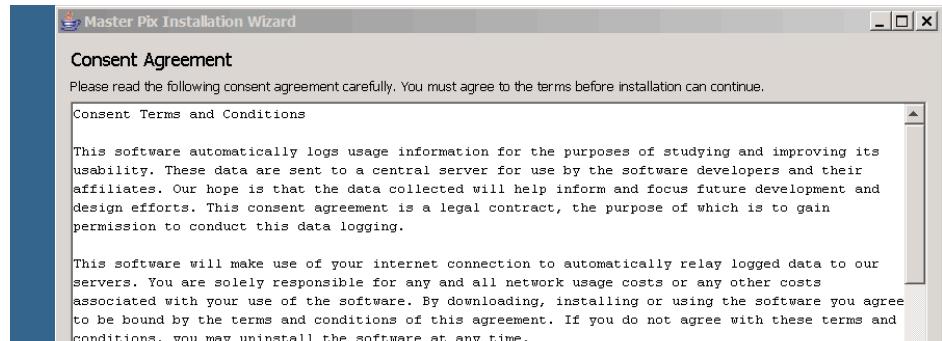
Textured Agreement

- Enhanced agreements using visual design
- Four techniques:
 1. Information layering
 2. Vignettes
 3. Sensationalism
 4. Visual variety



Do They Work?

- Ran a deception study
 - Problem: priming
- Asked users to install 3 pieces of software and evaluate them for a photo-editing task
- Users shown one of style of agreement
- Installer collected timing information
- Post-task questionnaire



Age of Eligibility
You must be eighteen years of age or older to download, install, or use this software. By using this software, you warrant that you are eighteen years or older. In addition, parents or guardians of children eighteen years or older should be aware that children under eighteen years of age cannot provide consent to use this software.

Privacy
We do not collect any Personally Identifiable Information about you via the Software. "Personally Identifiable Information" means information that would allow the collector to determine, without reference to any other information, your name, address or telephone number. However, we may collect non-personally identifiable information that may include, without limitation:

* Your screen size

* Customer experience feedback you enter describing your opinion of the software, if prompted for such information



If you consent to this data collection, we will collect and transmit usage information back to our own servers. This information is made available to developers for the purposes of improving future versions of this software.

You must be 14 years or older to participate, or you must obtain the consent of your parent or legal guardian. Participation is completely voluntary and can be stopped at any time by removing this software or discontinuing its use.

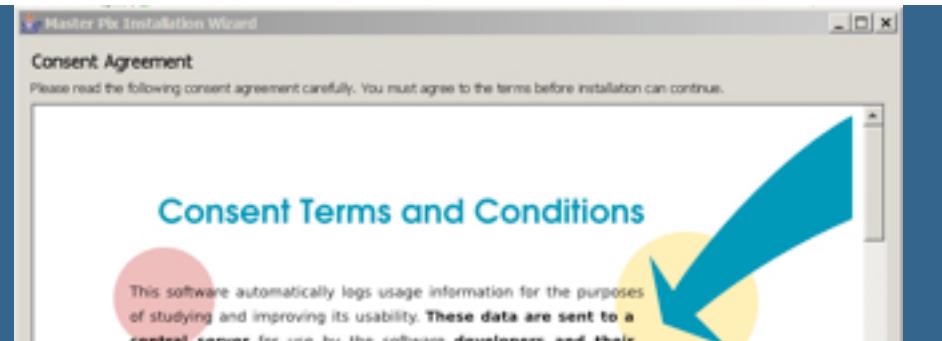
Types of Information

As with many applications available today, this software sends certain information back to its authors. This information falls into two broad categories:

► **Non-personal information** is information that cannot be directly associated with

- I accept the terms of the agreement
 I do not accept the terms of the agreement

< Back Next > Cancel



Age of Eligibility

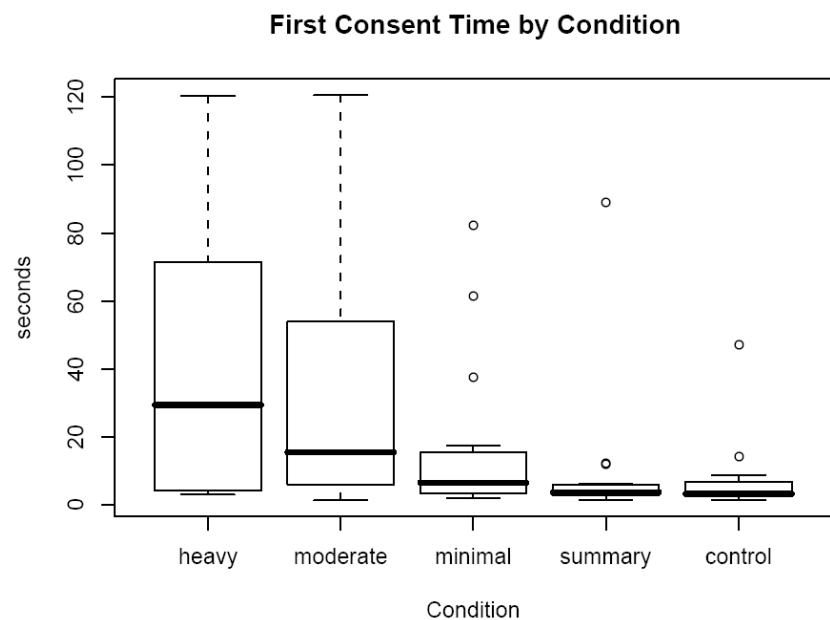


Participants

- 84 participants
 - 17 per condition (except heavy, only 16)
 - 43 females, 41 males
 - Ages: 17-47 (mean=24, SD=6)
- Compensated with \$10 gift certificate

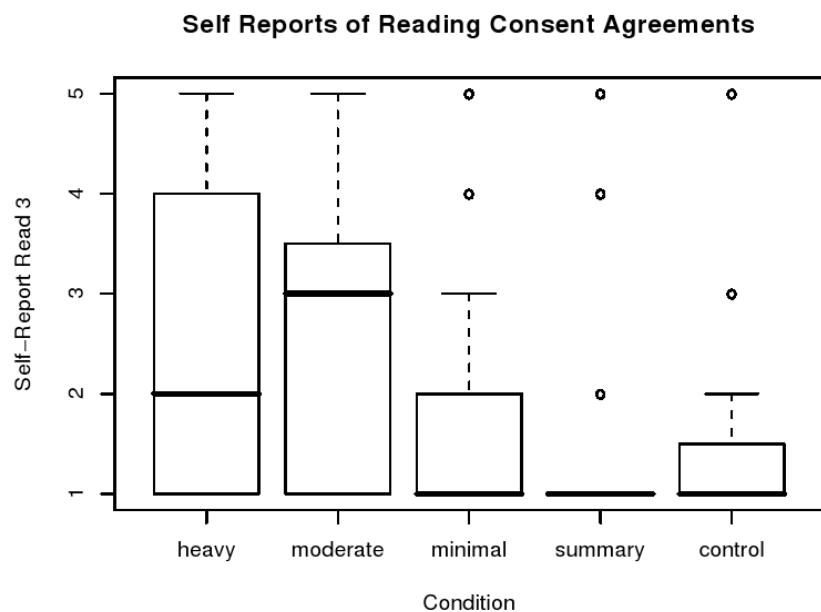
Results

- Subjects spent an average of 7 seconds on consent screens in control condition
- Moderate and heavy application of textured techniques raised mean time to 36, 40 seconds



Results

- Questionnaire also asked users how much they read
- Moderate condition self-reported reading more



Results

“It got me to read them, when I install other programs, I NEVER read them. Big letters, organized points, and cartoons help. I think the organization was the most important.”

Results

Back to the original issues:

1. Effective Presentation
 - Visual design supporting content
2. Demonstrate personal relevance
 - Vignettes, factoids
 - “Advocacy”
3. Habituation and Desensitization
 - Some headway

Summary

- Privacy concerns are secondary to users' primary task
- We must convince them it is worth it to read the agreement
- We can improve on existing solutions

Summary

- Enhanced agreements using visual design
- Borrowed techniques from existing media:
 - Newspapers
 - Magazines
 - User manuals
- Able to increase reading time by ~30 seconds; increase self-reported reading time

Future Work

- Examine problems with new and existing techniques
 - Example: short-circuiting of reading
- Particularly important if regulations are implemented



Consent Agreement

Please read the following consent agreement carefully.

accessories webservice to enable usability analyses. The purpose of this document is to gain your consent to do this data collection.

This software **automatically logs usage information** such as the names of commands you use, general descriptions of the types of documents you edit, information about your platform (e.g., whether it is Windows, Linux, etc.), and so on. These **data are sent to a server and made publicly available** for all to view and analyze. Our hope is that the data collected will help inform and focus future development and design efforts.

Our Users

90 percent of people using this software with a digital camera

average size of our users' photo collections

121

average age of the people using this software

28

**This
software
collects WHAT?**

Principle Investigator: This study is being conducted by Professor John Smith in the Computer Science Department at the Institute of Learning. Questions should be directed to smith@iolearning.com.

You must be 18 years or older to participate, or you must obtain the consent of your parent or legal guardian. Participation is completely voluntary and can be stopped at any time by removing this software or discontinuing its use.

- I accept the terms of the agreement
 I do not accept the terms of the agreement

< Back

Next >

Cancel

Credits

- Funding: NSERC Discovery Grant, NSERC USRA, NSERC PGS-M
- Thanks to all participants

Matthew Kay (mjskay@cs.uwaterloo.ca)
Michael Terry (mterry@cs.uwaterloo.ca)
hci.uwaterloo.ca

Thank You