IQP - Civil Good

Final Presentation

Goal

The goal of this project is to add more detail and explore avenues that would push this idea towards becoming both a reality and a force for social change.

Similar Sites - Conventional

- One on one
  - idebate.org
  - debate.org
- Forums
  - DebatePolitics.com
  - OnlineDebateNetwork.net
- Open format
  - ChangeMyView Subreddit
  - CreateDebate.com

Similar Sites - Unconventional

- ## Fact checking
  - Procon.org
  - Factcheck.org
- ## Debate wikis
  - Debatewise.org
  - Truthmapping.com,
  - DebateGraph.org
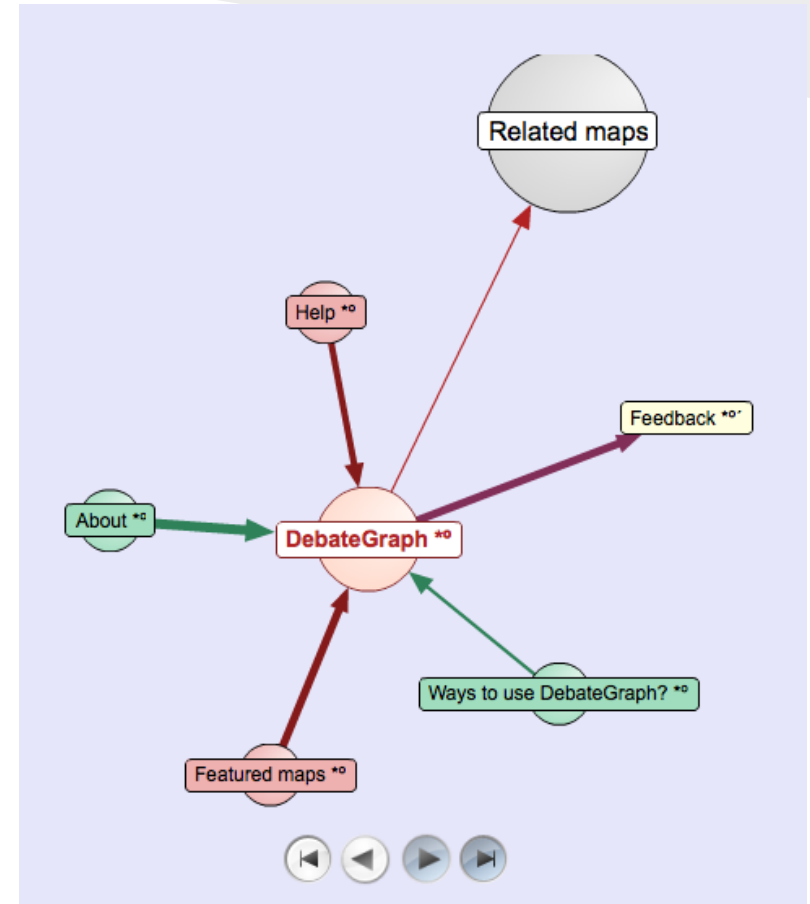- ## Unrelated to debate
  - Yourmorals.org

Image from Debategraph.org

Psychology - Online Disinhibition

Causes of disinhibition
- Dissociative anonymity
- Invisibility
- Asynchronicity
- Minimization of authority

Recommend
- Seeding with civil members

Psychology - Reducing Bias

Self-affirmation:

positive self-image produces an open mind

- Positive feedback
- User profile
- "Values essay" discussion system
- Should not promote awareness of effects

Other Psychological Influences

People will self-correct their biases when they are aware of them.

Biases like:

- boomerang effect
- halo effect

Recommend

- Raising awareness of negative biases
- Educated users only need a reminder

Psychology - Format of Discussion

Smaller groups (preferably one-on-one) are more effective in terms of:

- Quality assurance of ideas
- Effectiveness of information transfer
- Effort put forth per member
- General attitude towards fellow members

Legal Issues - Personally Identifiable Information

- ## Information that can identify an individual

- ## Every state is different

- ## Treat everything as PII
  - ### Good idea to notify users of all breaches

- ## Breach notifications

Legal Issues - Intellectual Property

- Copyright - the right to copy

- The "fair use" exception

- The DMCA's "safe harbor" provision

- Speedy "notice-and-takedown" process

Legal Issues - Defamation

- A false, harmful statement about another

- Section 230 of the Communications Decency Act

- Courts have allowed "traditional editorial functions"

- Cannot meaningfully change the statement

Legal Issues - Information Requests

- ECPA, PATRIOT, FISA

- Subpoenas - talk to a lawyer

- Informal requests - ethical and business decision

Legal Issues - Use by Minors

- Children's Online Privacy Protection Act (COPPA)
  - Applies only to children under 13

- Ban children under 13, don't have to comply with COPPA

- Restrict ages 13-17 from mature topics

- Legal counsel on retainer

- Authorized individuals

Societal Uses - Political Polarization

Education reduces polarization.

Recommend
- Encouraging users to become familiar with debate topics
- Use the "Query" conversation type to force explanation

Spiral of silence: majority silences minority.

Recommend
- One-on-one conversation to prevent majority group
- Strict privacy

Societal Uses - History and Political Climate

Longitudinal measurements of political climate

Limitations of current measures:

- Response bias
- Lack of demographic information

Civil Good's advantages:

- Analysis of conversations

- ## TED Talks
  - Goal: Provoke thought and change
  - Profitable

- ## Civil Good Conference

- ## Collaborate with TEDtalks
  - TEDx

Infrastructure - Web Hosting

- Available Methods:
  - In-house
  - Colocation
  - Cloud
  - Shared
  - Virtual Private Servers (VPS)
  - Dedicated

- Recommended is VPS and dedicated

Infrastructure - Databases

Between hierarchical, network, relational, object-oriented, and document-oriented DBMSes:

- A relational DBMS would be best for Civil Good's purposes

- A document-oriented system would also provide advantages, and the two can be used alongside each other

Infrastructure - Programming Languages & Open Source Technologies

- Database engines - both MySQL and PostgreSQL viable

- Web servers - Nginx

- Client-side programming languages - HTML, CSS, Javascript

- Server-side programming languages - Python web framework Django or Ruby web framework Ruby on Rails

Incremental Refinements

- Web is dynamic
- Balance changes and user consideration
  - Small, frequent changes
- Large changes unadvisable
  - Digg v4
  - Facebook
- Not simply addition of features
  - Clutter is bad

Data Driven Development

- ## Data collection
  - Surveys
  - User browsing behavior
  - Site statistics
  - A/B testing

- ## Data analysis
  - Prioritize pages that get more views
  - Improve navigability
  - Statistical methods
  - Heuristics

Security - Common Attacks
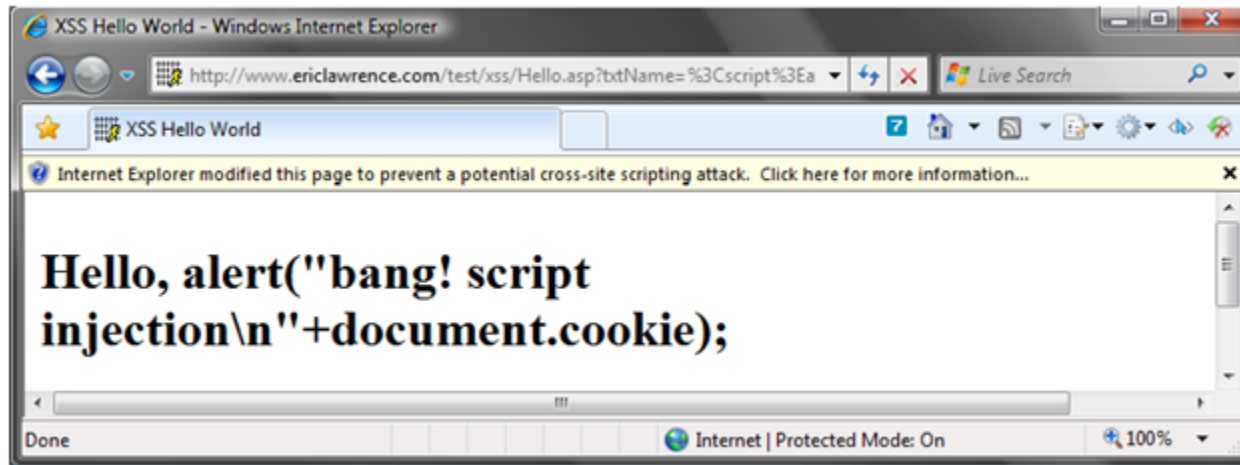
Cross-Site Scripting (XSS)

- Attackers run scripts by submitting malformed data
- Sanitize user data when building HTML

Image Source

Cross-Site Request Forgery (CSRF)

- Attacker pretends to be a legitimate user
- Guests: verify HTTP Referer headers
- Users: CSRF tokens

Cross Site Request Forgery Attacks

Attacking trust relationships

evil.com

③ Evil.com makes request to application using user's session credentials

② User visits evil.com in another browser window

① User logs in and creates session with web application

WEB APPLICATION (HTML)   DATABASE

WEB SERVICES APPLICATION (XML)
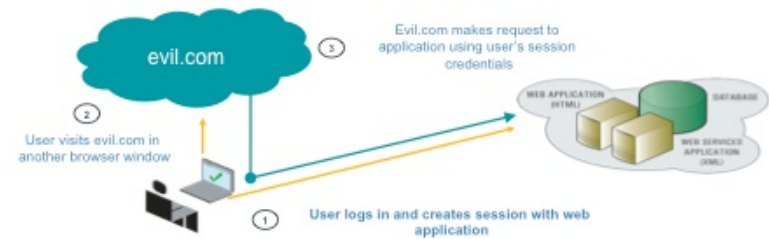
Protection actions –
- Tag each form with unique token and verify on form submission.
- Verify Referer headers, if available.

Security - Common Attacks

Figure 4: A DDoS Attack
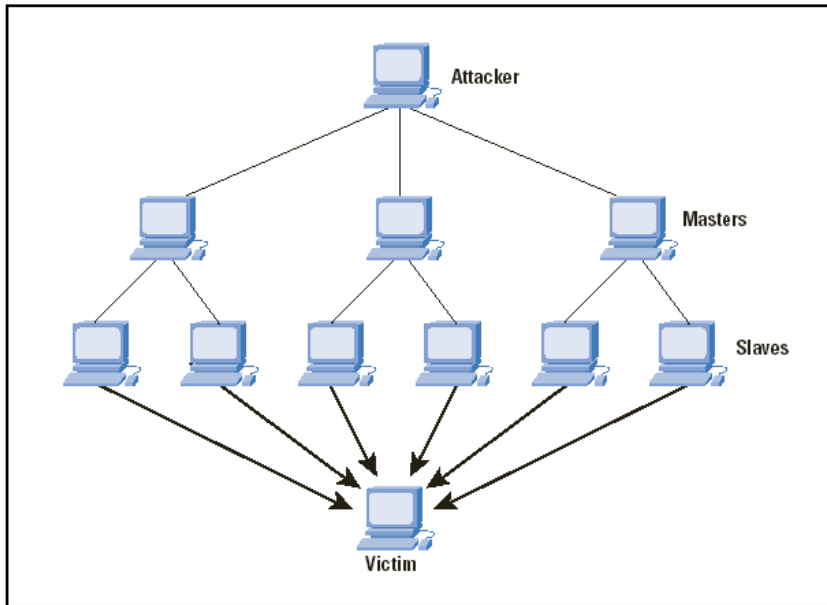
(Distributed) Denial of Service [(D)DoS]

- Attacker prevents other users from accessing Civil Good
- Use intrusion prevention systems (e.g. SNORT)
- Rate limit connections

Man-in-the-Middle

- Attacker intercepts or modifies data between users and the server
- Use HTTPS for **all** connections

Database encryption

- Use algorithms with long keys such AES.
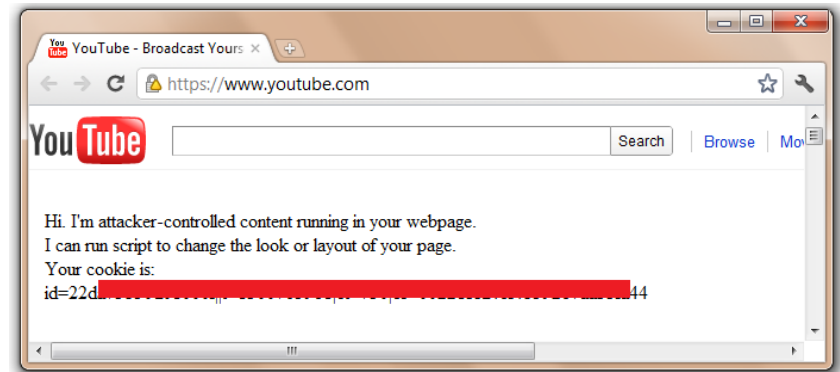
Security - Database Security

- Encrypt private information in the database
- Valid user input on the server side
- Restrict database permissions
- Avoid SQL injection; sanitize database inputs

Security - Password Security
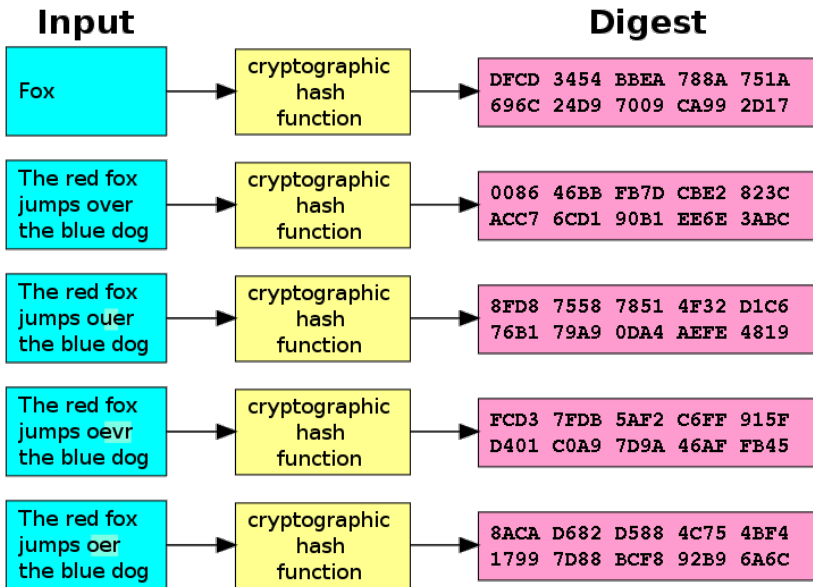
- Hash passwords with existing, proven functions (e.g. SHA256)
- Unique salts
- No character restrictions or maximum password length
- No password expiration
- Encourage strong passwords

Privacy - Minimal Tracking Requirements

- ## Session Identification
  - Cookies
  - HTTP authentication
  - IP address

- ## Usability Testing
  - Clickstream Analysis

- ## Web analytics
  - Server Logs

Privacy - Third Party Privacy Risks

- Cookies

- HTTP referrer header

- Web Bugs

- IP address

- Browser Fingerprinting

Privacy - Browser Fingerprinting
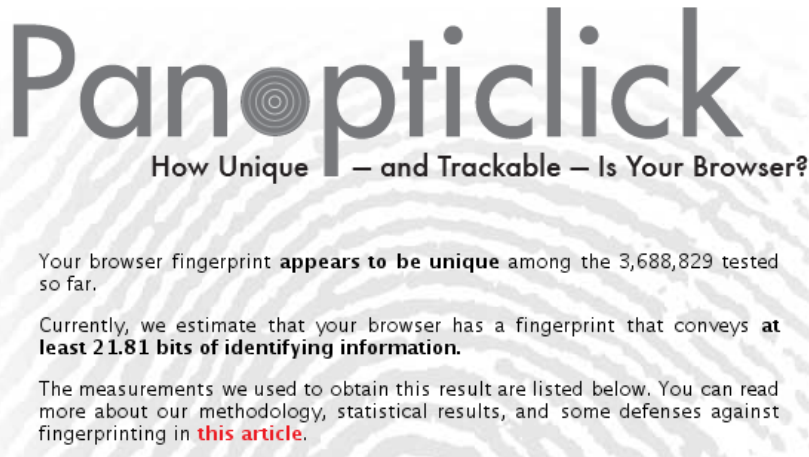
- Identify user browser with a combination of information
- Trackable Data
  - **Plugin details**
  - **System fonts**
  - User Agent
  - HTTP Accept Headers
  - Screen resolution
  - IP address

Image Source

Privacy - Privacy Policy

- Address issues that users care about

- Cut down on legalese, order in readable format

- Strictly enforce the policy

- Generates trust, helps with user retention

Community - Attracting Developers

Open source development:
- Peer recognition
- Philanthropic mindset
- Alumni effect
  - previous exposure = easier to work with

Recommend:
- Initial codebase
- Challenge to developers

Community - User Trends and Retention

Recommend:

- Accessible conversation topics
- Balanced registration process
- Established set of rules
- Developer participation with community
- Aesthetic appeal matters

Business Model - Operational Costs

- Requirements for VPS:
  - 6.2 GB bandwidth per month
  - 50-60 GB disk storage for the foreseeable future
  - 256 MB RAM per month

- $34.47 per month for VPS

- $11.63 per year for ".org" domain name

Business Model - 501(c)(3) status

- Pros:
  - Tax exemption
  - Donations are tax deductible
  - Companies may offer free services

- Cons:
  - Paperwork
  - Incorporation in the United States
  - User fee

Business Model - Marketing Costs

Search Engine Marketing

- $1.30-$1.60 per day
- Brings 15 to 20 clicks per day

Email Advertising

- High response rates; low costs
- Not linked to user accounts
- Do not recommend purchasing lists of potential users

Display Advertising

- Very high impression volume; high cost (not recommended)

Business Model - Revenue

Advertisements:

- Avoid on conversation page
- Use a platform that protects users
  - Project Wonderful
  - Adzerk
  - Build your own
- Targeted based on demographics--very valuable
  - Limit advertisers to general trends (e.g. age ranges)
- Text-based, unobtrusive; banners that blend with design

Image Source

Business Model - Revenue

Donations:

- Do not solicit more than six times a year
- Utilize demographic information to determine how often to ask users (e.g. younger people more likely to donate)
- Once there is a loyal user base, utilize a daily donation progress bar.

daily reddit gold goal

30%

help support reddit

Business Model - Revenue

Online Store:

- Most effective once a large, loyal community has been built
- Reliable source of income
- Example: redditgifts
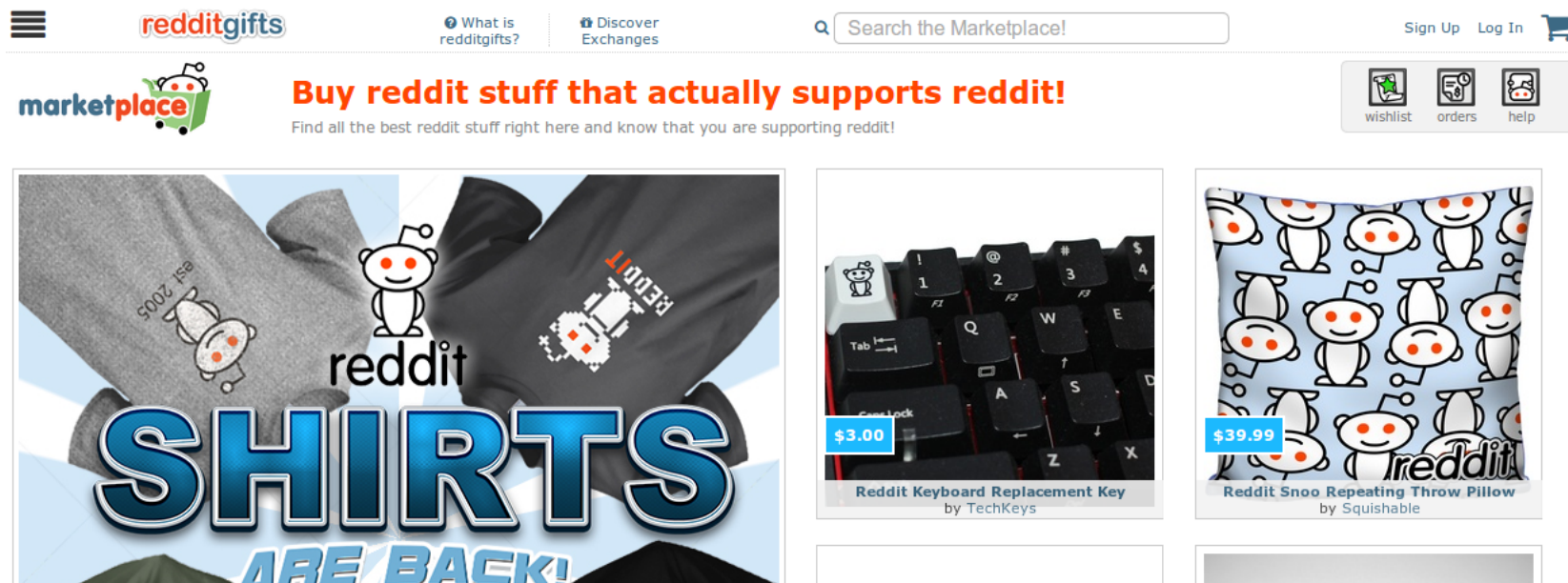
User Interaction - Recommended Design Changes

- Simplified sign-up process
- Ask user for information during Seek creation
- Have only one type of Fave
- Make polls optional
- Broaden Seeks automatically
- Add gamification elements

User Interaction - Conversation page improvements

- Removal of "undo" button
- Consolidation of text size buttons
- Renaming of "object" button
- Implementation of a "report" button
- Removal of display names/profile page links of partners, except Faves
- Implementation of "user status" indicator (online, typing, etc.)

Concept for a Conversation entry window

User Interaction - Rating system

- ## Simplify Rating Criteria
  - Quantity
  - Accuracy
  - Clarity
  - Relevance
  - Politeness

- ## Use a 5-star format rating system

⭐ ⭐ ⭐ ⭐ ⭐

User Interaction - Experiment

- Usability study between website versions
  - http://civil-good.wpi.edu/ - Original (10 participants)
  - http://civilgood.wpi.edu/ - Modified (10 participants)

- Modified version ranks higher
  - The suggestions do help in refining the user experience

Other recommendations

- Make *Conversations* a menu option
- Declutter front page
- Implement tutorial system

Mobile Presence - Demographic

- Large percentage of the population own mobile devices

- Many use their devices solely for online activities
  - Sometimes more frequently than desktop users

- Gain exposure by developing for mobile devices

Mobile Presence - Application Security

- Mobile security threats - malicious application behaviors or mobile malware

- Can reduce risk of user data being stolen by:
  - Storing minimal data on user devices
  - Recommending security software
  - Encouraging safe browsing practices

Streamline the mobile version by:

- Removing unnecessary graphics and other content to prioritize more vital material

- Reducing content hierarchies to minimize unnecessary clicking and page-loading

Mobile Applications vs. Websites

Mobile website recommended

- An app's superior graphics and performance not required

- An app's ability to function while offline not useful

- Accessible by anyone with a Web browser; apps must be approved, discovered, and purchased

- Can be developed just as easily as desktop website; apps require different tools and skills

Conclusions

- Provided research to support existing ideas

- Added depth on topic areas as yet unexplored

- Provided recommendations for refining the user experience

- Explored avenues to help the idea become both a reality and a force for social change

Thank you

for the opportunity to work on Civil Good.

We're looking forward to using it!

Questions?