

100 Million Friends You Can Never Know

Adding COPPA compliant social networking to Poptropica

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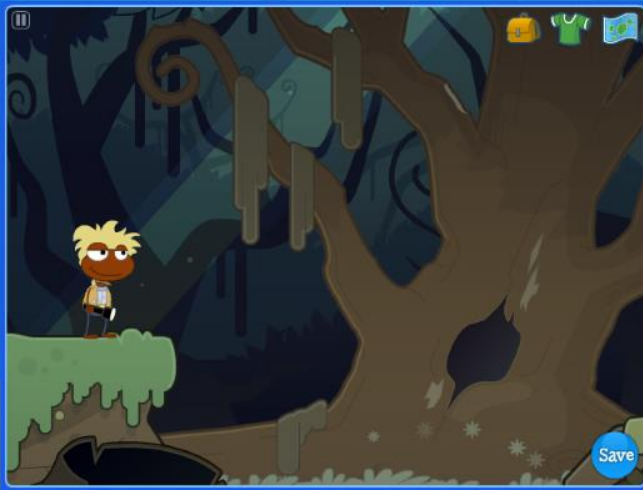
Systems Engineer and Game Designer
Poptropica

Poptropica®



Wait, what's a Poptropica?

- Web based side scrolling adventure platformer
- For kids from 6 to 15 years old
- Conceived in mid 2006 by Jeff Kinney
- Launched on the first of September 2007
- There are now 33 Poptropican Island adventures
- Narrative focus with each island telling a story
- Also a social game:
 - Common rooms for 8 players on every Island
 - Chat / Emote
 - Head to head mini-games



So, it's cool, but is it BIG?!?

- 500,000,000 characters created
 - 8,000,000 active users per month
 - 28 minutes on the site each visit
 - 3.25 visits a month
 - That's 12,133,333 kid hours a month.
 - 1,385 kid years ... every month...
 - 99,726 years spent playing our game since launch...
- give or take a thousand years...

Poptropica
ADVENTURES

EXCLUSIVE REDEEMABLE COSTUMES!

BUY NOW AND UNLOCK TWO EXCLUSIVE COSTUMES ON POPTROPICA.COM



EVERYONE
E
Comic Mischievous
www.poptropica.com

AVAILABLE NOV. 6

Poptropica

Pop ★ 🐸 🏠



AVAILABLE NOW AT TOY STORES EVERYWHERE!

CLICK HERE

Save

Poptropica

Pop ★ 🐸 🏠

COMIC SHOP

OPEN

MASKS



Get your adventure on the go!

EVERYONE
E
Comic Mischievous
www.poptropica.com

Save

ADVERTISEMENT

Poptropica
ADVENTURES

NINTENDO DS

NOW AVAILABLE

LEARN MORE

How could this happen?!?

- Great Writing
- Great game play
- Easy access
- Free
- Secret Ingredient
- Luck?



Goals

To provide a way for players to:

1. Connect with other users in a persistent way, allowing deeper friendships to develop
2. Further express their personalities in the game (beyond the millions of costume combinations already possible)
3. Share that captured personal expression with others.
4. Be able to find real life friends in the game
5. Be able to make new friends within the game.
6. Be able to share their progress through the game in a meaningful and intrinsic way.



Challenges

Above and beyond the normal challenge of adding social features social systems must ...

- maintain COPPA compliance
- protect the privacy of our users
- maintain the level of simplicity and clarity that are the foundations of the Poptropica experience

COPPA - Children's Online Privacy Protection Act

How to comply with Children's Online Privacy Protection Act

The Children's Online Privacy Protection Act, effective April 21, 2000, applies to the online collection of personal information from children under 13. The new rules spell out what a Web site operator must include in a privacy policy, when and how to seek verifiable consent from a parent and what responsibilities an operator has to protect children's privacy and safety online.

The Federal Trade Commission staff prepared this guide to help you with the new requirements for protecting children's privacy online and understanding the FTC's enforcement authority.

Who Must Comply

If you operate a commercial Web site or an online service directed to children under 13 that collects personal information from children or if you operate a general audience Web site and have actual knowledge that you are collecting personal information from children, you must comply with the Children's Online Privacy Protection Act.

- To determine whether a Web site is directed to children, the FTC considers several factors, including the subject matter, visual or audio content, the age of models on the site, language, whether advertising on the Web site is directed to children, information regarding the age of the actual or intended audience, and whether a site uses animated characters or other child-oriented features.
- To determine whether an entity is an "operator" with respect to information collected at a Web site, the FTC will consider who owns and controls the information, who pays for the collection and maintenance of the information, what the pre-existing contractual relationships are in connection with the information, and what role the Web site plays in collecting or maintaining the information.

Personal Information

The Children's Online Privacy Protection Act and Rule apply to individually identifiable information about a child that is collected online, such as full name, home address, email address, telephone number or any other information that would allow someone to identify or contact the child. The Act and Rule also cover other types of information – for example, hobbies, interests and information collected through cookies or other types of tracking mechanisms – when they are tied to individually identifiable information.

Basic Provisions

Privacy Notice

Placement

An operator must post a link to a notice of the information practices on the home page of its Web site or online service and at each area where it collects personal information from children. An operator of a general audience site with a separate children's area must post a link to its notice on the home page of the children's area.

The link to the privacy notice must be clear and prominent. Operators may want to use a larger font size or a different color type on a contrasting background to make it stand out. A link in small print at the bottom of the page – or a link that is indistinguishable from other links on a larger site – is not considered clear and prominent.

Content

The notice must be clearly written and understandable. It should not include any unrelated or confusing materials. It must state the following information:

- The name and contact information (address, telephone number and email address) of all operators collecting or maintaining children's personal information through the Web site or online service. If more than one operator is collecting information at the site, the site may select and provide contact information for only one operator who will respond to all inquiries from parents about the site's privacy policies. Still, the names of all the operators must be listed in the notice.
- The kinds of personal information collected from children (for example, name, address, email address, hobbies, etc.) and how the information is collected – directly from the child or passively, say, through cookies.
- How the operator uses the personal information. For example, is it for marketing back to the child? Notifying contest winners? Allowing the child to make the information publicly available through a chat room?
- Whether the operator discloses information collected from children to third parties. If so, the operator also must disclose the kinds of businesses in which the third parties are engaged, the general purposes for which the information is used, and whether the third parties have agreed to maintain the confidentiality and security of the information.
- That the parent has the option to agree to the collection and use of the child's information without consenting to the disclosure of the information to third parties.

parties have agreed to maintain the confidentiality and security of the information.

- That the parent has the option to agree to the collection and use of the child's information without consenting to the disclosure of the information to third parties.
- That the operator may not require a child to disclose more information than is reasonably necessary to participate in an activity as a condition of participation.
- That the parent can review the child's personal information, ask to have it deleted and refuse to allow any further collection or use of the child's information. The notice also must state the procedures for the parent to follow.

Direct Notice to Parents

Content

The notice to parents must contain the same information included on the notice on the Web site. In addition, an operator must notify a parent that it wishes to collect personal information from the child that the parent's consent is required for the collection, use and disclosure of the information, and how the parent can provide consent. The notice to parents must be written clearly and understandably, and must not contain any unrelated or confusing information. An operator may use any one of a number of methods to notify a parent, including sending an email message to the parent or a notice by postal mail.

Verifiable Parental Consent

Before collecting, using or disclosing personal information from a child, an operator must obtain verifiable parental consent from the child's parent. This means an operator must make reasonable efforts (taking into consideration available technology) to ensure that before personal information is collected from a child, a parent of the child receives notice of the operator's information practices and consents to those practices.

Until April 2002, the FTC will use a sliding scale approach to parental consent in which the required method of consent will vary based on how the operator uses the child's personal information. That is, if the operator uses the information for internal purposes, a less rigorous method of consent is required. If the operator discloses the information to others, the situation presents greater danger to children, and a more reliable method of consent is required. The sliding scale approach will sunset in April 2002 subject to a Commission review planned for October 2001.

Internal Uses

Operators may use email to get parental consent for all internal uses of personal information, such as marketing back to a child based on his or her preferences or communicating promotional updates about site content, as long as they have additional steps to increase the likelihood that the parent has, in fact, provided the consent. For example, operators might seek confirmation from a parent in a delayed confirmatory email, or confirm the parent's consent by letter or phone call.

Public Disclosures

When operators want to disclose a child's personal information to third parties or make it publicly available (for example, through a chat room or message board), the sliding scale requires them to use a more reliable method of consent, including:

- getting a signed form from the parent via postal mail or facsimile;
- accepting and verifying a credit card number in connection with a transaction;
- taking calls from parents, through a toll-free telephone number staffed by trained personnel;
- email accompanied by digital signature;

But in the case of a monitored chat room, if an individually identifiable information is stripped from postings before it is made public – and the information is deleted from the operator's records – an operator does not have to get prior parental consent.

Disclosures to Third Parties

An operator must give a parent the option to agree to the collection and use of the child's personal information without agreeing to the disclosure of the information to third parties. However, when a parent agrees to the collection and use of their child's personal information, the operator may release that information to others who use it solely to provide support for the internal operations of the website or service, including technical support and order fulfillment.

Exceptions

The regulations include several exceptions that allow operators to collect a child's email address without getting the parents' consent in advance. These exceptions cover many popular online activities for kids, including contests, online newsletters, homework help and electronic postcards.

Prior parental consent is not required when:

- an operator collects a child's or parent's email address to provide notice and seek consent;
- an operator collects an email address to respond to a one-time request from a child and then deletes it;
- an operator collects an email address to respond more than once to a specific request – say, for a subscription to a newsletter. In this case, the operator must notify the parent that it is communicating regularly with the child and give the parent the opportunity to stop the communication before sending or delivering a second communication to a child.

that it is communicating regularly with the child and give the parent the opportunity to stop the communication before sending or delivering a second communication to a child;

- an operator collects a child's name or online contact information to protect the safety of a child who is participating on the site. In this case, the operator must notify the parent and give him or her the opportunity to prevent further use of the information;
- an operator collects a child's name or online contact information to protect the security or stability of the site or to respond to law enforcement, if necessary, and does not use it for any other purpose.

October 2001 April 2002

In October 2001, the Commission will seek public comment to determine whether technology has progressed and whether secure electronic methods for obtaining verifiable parental consent are widely available and affordable. Subject to the Commission's review, the sliding scale will expire in April 2002. Until then, operators are encouraged to use the more reliable methods of consent for all uses of children's personal information.

New Notice for Consent

An operator is required to send a new notice and request for consent to parents if there are material changes in the collection, use or disclosure practices to which the parent had previously agreed. Take the case of the operator who got parental consent for a child to participate in contests that require the child to submit limited personal information, but who now wants to offer the child chat rooms. Or, consider the case of the operator who wants to disclose the child's information to third parties who are in materially different lines of business from those covered by the original consent – for example, marketers of diet pills rather than marketers of stuffed animals. In these cases, the Rule requires new notice and consent.

Access Verification

At a parent's request, operators must disclose the general kinds of personal information they collect from children (for example, name, address, telephone number, email address, hobbies), as well as the specific information collected from children who visit their sites. Operators must use reasonable procedures to ensure they are dealing with the child's parent before they provide access to the child's specific information.

They can use a variety of methods to verify the parent's identity, including:

- obtaining a signed form from the parent via postal mail or facsimile;
- accepting and verifying a credit card number;
- taking calls from parents on a toll-free telephone number staffed by trained personnel;
- email accompanied by digital signature;
- email accompanied by a PIN or password obtained through one of the verification methods above.

Operators who follow one of these procedures acting in good faith to a request for parental access are protected from liability under federal and state law for inadvertent disclosures of a child's information to someone who purports to be a parent.

Revoking & Deleting

At any time, a parent may revoke higher consent, refuse to allow an operator to further use or collect their child's personal information, and direct the operator to delete the information. In turn, the operator may terminate any service provided to the child, but only if the information at issue is reasonably necessary for the child's participation in that activity. For example, an operator may require children to provide their email addresses to participate in a chat room so the operator can contact a youngster if he is misbehaving in the chat room. If, after giving consent, a parent asks the operator to delete the child's information, the operator may refuse to allow the child to participate in the chat room in the future. If other activities on the Web site do not require the child's email address, the operator must allow the child access to those activities.

Timing

The Rule covers all personal information collected after April 21, 2000, regardless of any prior relationship an operator has had with a child. For example, if an operator collects the name and email address of a child before April 21, 2000, but plans to seek information about the child's street address after collecting the child's information, the operator must follow the Rule's requirements. In addition, come April 21, 2000, if an operator continues to offer activities that involve the ongoing collection of information from children – like a chat room – or begins to offer such activities for the first time, notice and consent are required for all participating children, regardless of whether the children had already registered at the site.

Safe Harbors

Industry groups or others can create self-regulatory programs to govern participants' compliance with the Children's Online Privacy Protection Rule. These guidelines must include independent monitoring and disciplinary procedures and must be submitted to the Commission for approval. The Commission will publish the guidelines and seek public comment on considering whether to approve the guidelines. An operator's compliance with Commission-approved self-regulatory guidelines will generally serve as a "safe harbor" in any enforcement action for violations of the Rule.

Enforcement

The Commission may bring enforcement actions and impose civil penalties for violations of the Rule in the same manner as for other Rules under the FTC Act. The Commission also retains authority under Section 5 of the FTC Act to examine information practices for deception

enforcement action for violations of its Rule.

Enforcement

The Commission may bring enforcement actions and impose civil penalties for violations of the Rule in the same manner as for other Rules under the FTC Act. The Commission also retains authority under Section 5 of the FTC Act to examine information practices for deception and unfairness, including those in use before the Rule's effective date. In interpreting Section 5 of the FTC Act, the Commission has determined that a representation, omission or practice is deceptive if it is likely to:

- mislead consumers; and
- affect consumers' behavior or decisions about the product or service.

Specifically, it is a deceptive practice under Section 5 to represent that a Web site is collecting personal identifying information from a child for one reason (say, to earn points toward a premium) when the information will be used for another reason that a parent would find material – and when the Web site does not disclose the other reason clearly or prominently.

In addition, an act or practice is unfair if the injury it causes, or is likely to cause, is:

- substantial;
- not outweighed by other benefits; and
- not reasonably avoidable.

For example, it is likely to be an unfair practice in violation of Section 5 to collect personal identifying information from a child, such as email address, home address or phone number, and disclose that information to a third party without giving parents adequate notice and a chance to control the collection and use of the information.

References: <http://www.ftc.gov/bcp/online/pubs/bogushts/coppa.htm>



#poptropica

Design:

- Add friends in common rooms
- Add friends by their user names
- View all of their friends costumes
- Answer visually appealing personality questions
- See their own personality questions in a meaningful format

Angry Icicle

PHOTOS **CLOSET** **SHOW ACCOMPLISHMENTS**

Challenge players in a common room to improve your battle ranking!

STATUS: Inactive
Your membership expired on June 22, 2010. [Renew Now!](#)

You live in Utah, U.S.A.

You have 221 photos in your photo album.
[Become a member to view your photos!](#)

You have 225 friends.

Challenge players in a common room to improve battle rankings!

STATUS: Active
Hamburger Hamburger has a Poptropica Membership! [Become one today!](#)

Hamburger Hamburger lives in Japan.

Hamburger Hamburger has 50 photos in their photo album.
[Become a member to view photos albums!](#)

You have 225 friends.

ADD A FRIEND **OR** **FIND FRIENDS NOW!**

ADD FRIENDS THAT YOU MEET IN COMMON ROOMS

CHAT
BATTLE
FRIEND

"THE NEW FRIENDS THING AND DAILY QUIZ IS PRETTY IMPRESSING. THIS NEW VERSION IS WAAAAAY BETA!"
-SLIPPERY COMET

Design 2:

- See other users' personality questions
- Take 'photos' (artistic renderings of the character) at key moments during island gameplay
- View the photos of Friends
- See recent activity of your Friends when you log in



Monetization

Contribute to our bottom line without negatively impacting the user's experience

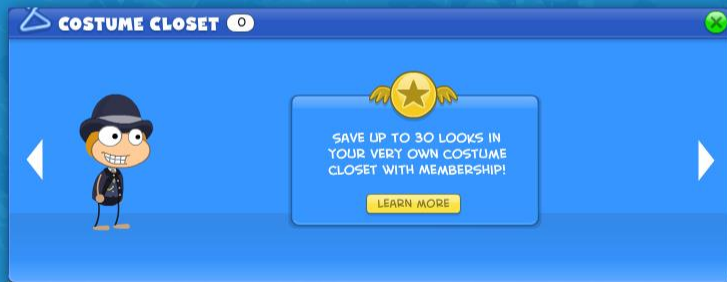
- Integrated advertising as part of the friends offering
- Sponsored feed items

Restrict some of the friends content to members

- Photos: users can collect all the photos but only view the first photo for each island adventure.
- Costume Closet: Members can save 30 costumes and non-members do not have access to the closet



"You have to make FREE membership or else you will loose money on membership!"



"I would like you to have FREE membership for everyone. That way people will finish islands faster and have more fun!"

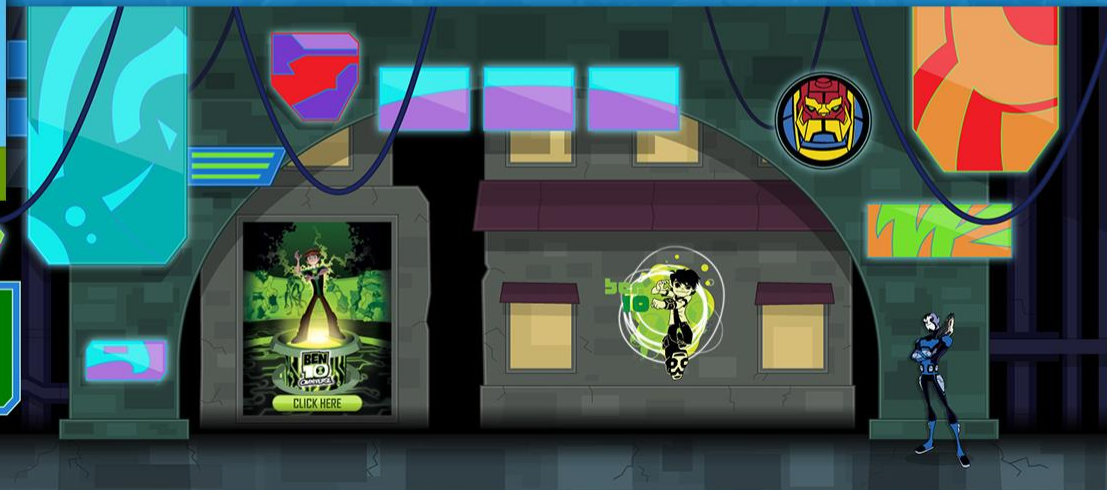
Technology:

Our technology is remarkably unremarkable

- Apache web servers running on Centos
- Our code is in PHP
- Database is just MySQL
- Our multi-player servers run on Red5 on Tomcat
- The game client is Flash
- We use Akamai as our content delivery network

MAX PLATFORM HEIGHT

MAX BUILDING WIDTH



Technology Challenges

- Concerned that existing hardware would be insufficient
- We did stress tests, scripts that hit the backend in the ways we expected the Flash to
- We designed each new feature to be able to be shut off independently
- It was indeed necessary to use the shutoff



Issues of Scale

- No maximum number of friends
- Current record over 10,000
- Constant addition of photos and Pop Quizzes
- Solutions:
 - Paginate data
 - Use lookahead to make it feel continuous where needed
 - Denormalize data where needed?

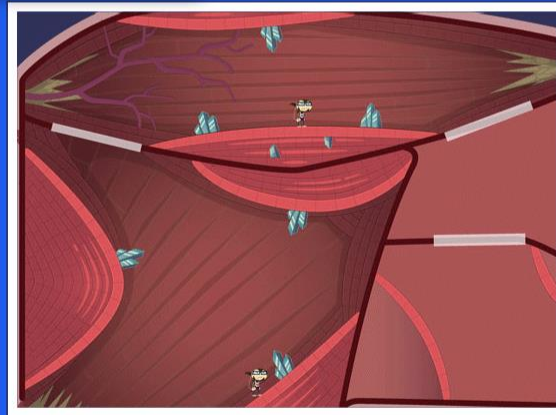
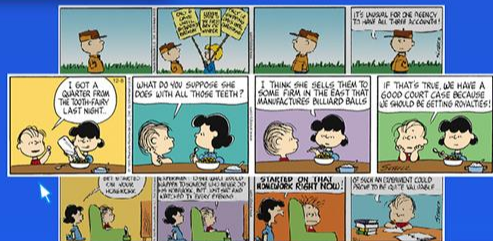


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Success!

- All friends functionality added using current backend
- Features added with zero downtime
- Zero data loss (Saving and loading was not interrupted)
- Continuous integration testing of codebase during development
- Full deployment testing
- Some features disabled for non-members while database queries were made more efficient
- Hot launch is difficult and maybe not worth it for others



AT ARMS LENGTH
I'VE GOT YOU UNDER MY
SKIN.



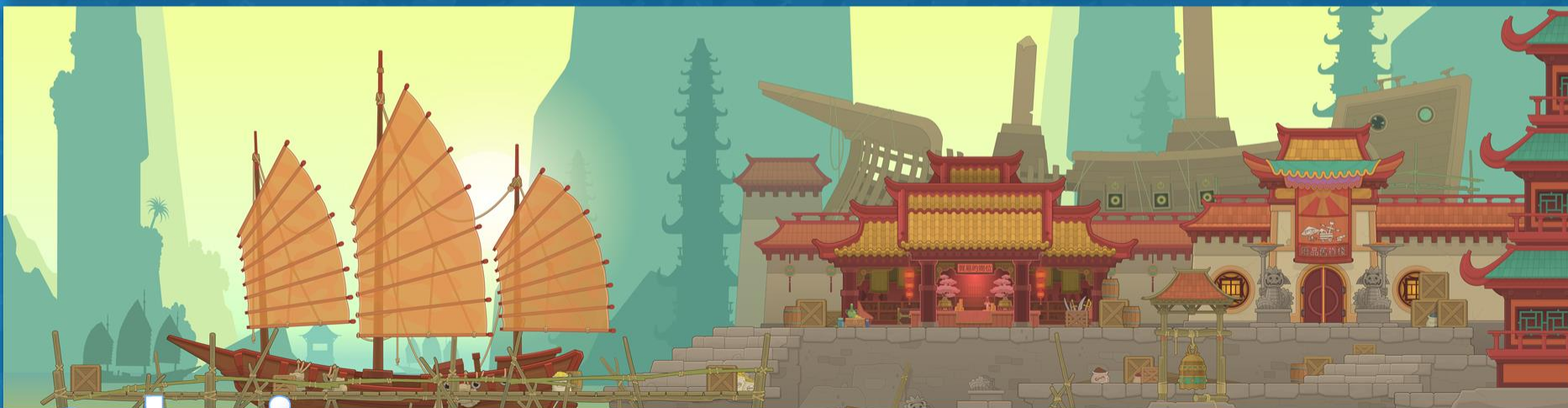
PREVIOUS

WANT TO FIND OUT MORE? VISIT THE CREATORS' BLOG

Pitfalls: Quizzes

While our end design looks cohesive and conforms to the high level goals of our product we don't always get it right on the first try...

- Pop Quizzes
 - Initial design text based
 - 20 question personality quiz style
 - Interesting to us... not so much so to our audience
 - Revised to single question visual pop quizzes



Pitfalls: Photos

Rewards progress aka badging

- Early designs used badges, much like console achievements
- Neat but complex and abstract, too extrinsic
- Revised into Photos
 - Mark the same events as badges would have
 - Show the player in the act being rewarded
 - Not just screenshots but artistic renderings of the scene
 - Much higher overhead than badges, for art and coding
 - Worth it to make progress rewards intrinsic to the gameplay.



Pitfalls: Monetization

- Identified locations for ad placement
- Highest impact position was on the friends hub
- It was designed to be the centerpiece of a friends ad offering
- It was invasive
- It didn't improve the game experience for the user
- The marketing team decided to remove it as soon as they saw it in the game.



Pitfalls: General Design

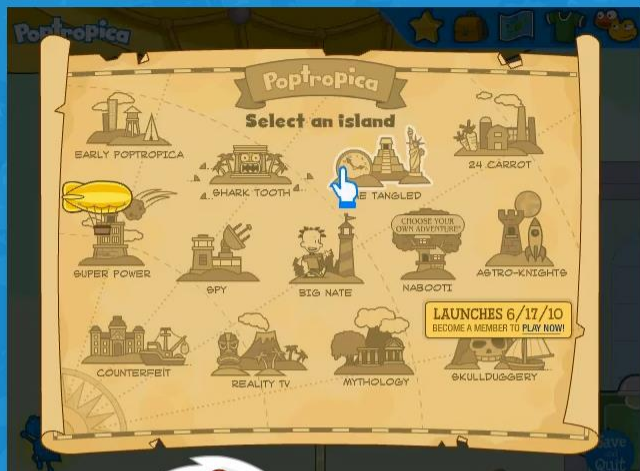
- First design: Facebook like, single page, several vertical screens
- Second design: player room navigated through platforming
- Third design: March of users like those found in existing store and art intensive personality quilt.
- User rooms are still part of the plan, but when and if they are created they will be a project in and of themselves.



Pitfalls: Map

Ongoing changes during friends development

- Too many islands for a single screen static map
- First redesign was a zooming map
 - very interactive
 - Exciting to use...
 - Ultimately disorienting
 - Easy to get 'lost'
- Second redesign moved to a long scrolling map
 - Allowed us to highlight new islands and provide a suggested order of play



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Outcome: Time on site

- 10% increase in session length

That might not seem like a lot but with our user base it has added up to 2,000 years of usage since the launch of friends



Outcome: Friendships

The most impressive and core number that we look to as an indicator of the success of our project is the number of friendships that have been formed.

Time	# of Friends
12 hours	500,000
48 hours	2,000,000
5 months	60,000,000
6 months	70,000,000
By GDC	~120,000,000



Outcome: Friendships

- We use a follower model more like Twitter than Facebook
- 5 people finding each other would generate 25 friendships
- While we have over 120,000,000 friendships they are among around 10,000,000 individuals with 11 friendships each.
- One individual has over 10,000 friends
- more than 20 users have 4,000 friends



Outcome: Personality Quizzes

- We launched Friends with 50 pop quizzes
- We now have 104
- Users are given 3 quizzes the first time they log in
- One additional quiz is unlocked each day they log in after that
- Presentation order is fixed per user but random between them
- 58,500,000 questions have been answered
- 5,000,000 users have answered pop quizzes

Which hat do you prefer?

top hat baseball hat beanie

What is the scariest monster?

zombie werewolf Cthulu

Have you ever met a celebrity?

no yes

How clean is your room?

spotless a little messy a pigsty

What is your favorite flavor of ice cream?

cream triple chocolate neapolitan

How do you prefer to talk to your friends?

in person on the phone by texting

What's your favorite watersport?

surfing sailing diving

Are you outgoing or shy?

outgoing shy

How clean is your room?

spotless a little messy a pigsty

Scorpion

SHOW ALL

MOST ACTIVE

RECYCLE

NEXT

Outcome: Photos

- Photos for all islands not just new ones
- 120 photos were produced pre launch
- Each photo is an artist's interpretation of a particular dramatic moment
- Each photo has multiple captions
- Photos show the user and whatever they looked like at the moment the photo was taken
- The system supports multiple versions of photos for added individuality between users.



Outcome: Photos 2

- We decided not to retroactively grant photos for completed islands
- Instead we implemented the ability for users to reset and replay islands
- Users can delete photos
- many users have played their favorite islands dozens of times
- 69,000,000 photos have been taken by about 8,200,000 users



Outcome: Mood

- 10,695,654 have seen their mood on their profile page, which defaults to happy
- 2,246,137 Poptropicans have changed their mood
- 8,449,517 Poptropicans have NOT changed their mood and are presumed to be happy being Happy
- Girls are more likely to change their mood than boys
- Users are most likely to change their mood to excited
- Users are least likely to change their mood to bashful
- Users are most likely to change their mood if they are 10



Outcome: Country

- Country is selected by name
- Country is shown by flag, the images are pulled from a partner site
- Country is pre-populated based on geo-ip
- Users say they are from 237 countries
- Location is clearly used by players to construct their Poptropican identity whether or not they are choosing their actual location

Selected

United States



United States

Canada



Canada

Australia



Australia

United Kingdom



United Kingdom

New Zealand



New Zealand

Mexico



Philippines

Philippines



United Arab Emirates

India



India

Singapore



Hong Kong

Ireland



Singapore

Geo-IP



Future Plans

- Friends is a platform for future features
- We have created a social graph in Poptropica
- So, what do we hang on our new Friends platform?
 - First Tribes [DONE]
 - Second presence detection
 - Asynchronous interaction with friends
 - Synchronous interaction with friends



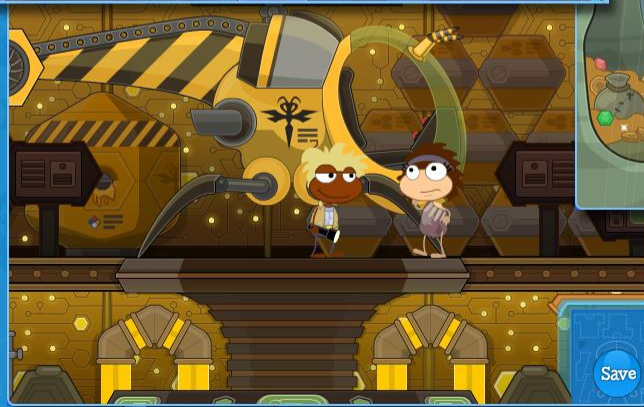
What are Tribes?

- Tribes are Poptropica's answer to Guilds
- Small number of strongly themed tribes
- Introduced through the in game fiction
- Produce smaller groups for the user to belong to



Tribes Outcome

- Tens of millions of users have joined a tribe
- On average a user completes 0.96 islands
- Users who are in a tribe complete 3
- Membership across tribes is not even
- Unsurprisingly members' play habits conform to the theme of the tribe they are in
- Members of the Pathfinders tribe complete 4.5 islands



The Future of Tribes

- Tribe specific Common Rooms [DONE]
- Tribal home pages
- Tribal Challenges



Vague General Takeaway

- Our answers are specific to our problem... and that is the most important takeaway.
- Look at your user base and your product
- Make sure that the answers you find fit them and not you, your development team or your company.



Substantive Takeaway

- Making any reward (achievement) system in your game intrinsic makes those rewards much more relevant to your players.
- Look at the level of complexity of your solutions and make sure they match your audience. What works for you as a 35 year old game developer may not be what a 6 year old wants or needs to enjoy your game.
- When adding to an existing game make sure your additions complement what is already loved about your game.

Substantive Takeaway

- Limit the amount you alter your game in with each addition and assess how it is received. Change direction if needed. The features we implemented prior to Friends were not well received and we changed our direction based on that reception and produced Friends as a result.
- Be prepared for failure. We limited the resources dedicated to Friends so that our other game development could move forward and the game would not fail if Friends was not a success.

Substantive Takeaway

- Be prepared for success. Our hardware resources are very limited, and though we did simulated load testing, we could not know how our servers would hold up to real usage patterns. We built each feature we added in a way that allowed it to be turned off or limited to our paying members if needed to reduce load. In the first days after launch we did indeed need to limit several features while we made optimizations. The idea to design the new features in this way came directly from a lecture here two years ago by Zynga about their Farmville architecture.

Substantive Takeaway

- Just because you 'can' put an ad there doesn't mean you 'should' Consider your user's experience and the long term health of your game and brand.
- Evolve your technology. It's never too late to start building features so that they can be upgraded.
- Use the technology you evolve. If you have done something like what you need to do then generalize that technology and re-use it. If you are doing something for a second time you will probably do it for a third and even if it takes longer to rework and reuse something this time it will save you time on your next iteration.

Substantive Takeaway

- Design the tools you will need to use for continued content deployment. I personally skimmed on this a bit in several areas and ended up doing a huge amount of work to keep content flowing smoothly after launch. That could have been avoided by taking the time to develop the content management tools that our content producers would need before they needed them!

Substantive Takeaway

- Build in metrics! Within minutes of launching I began to receive requests for metrics. We built both a high volume aggregate metrics system that works off of parsing the server logs and also designed our production databases to allow ad hoc queries. Having user data available through a data warehouse is also highly recommended; there are just some things that you can't ask a 500,000,000 row production table without setting fire to the server. We are in the process of implementing data warehousing but that's a different talk.



IF YOU HAVE ANY QUESTIONS FEEL FREE TO EMAIL ME:

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