

# ADPQ Vendor Pool

reachout  
Search, Share, Support

June 9, 2016

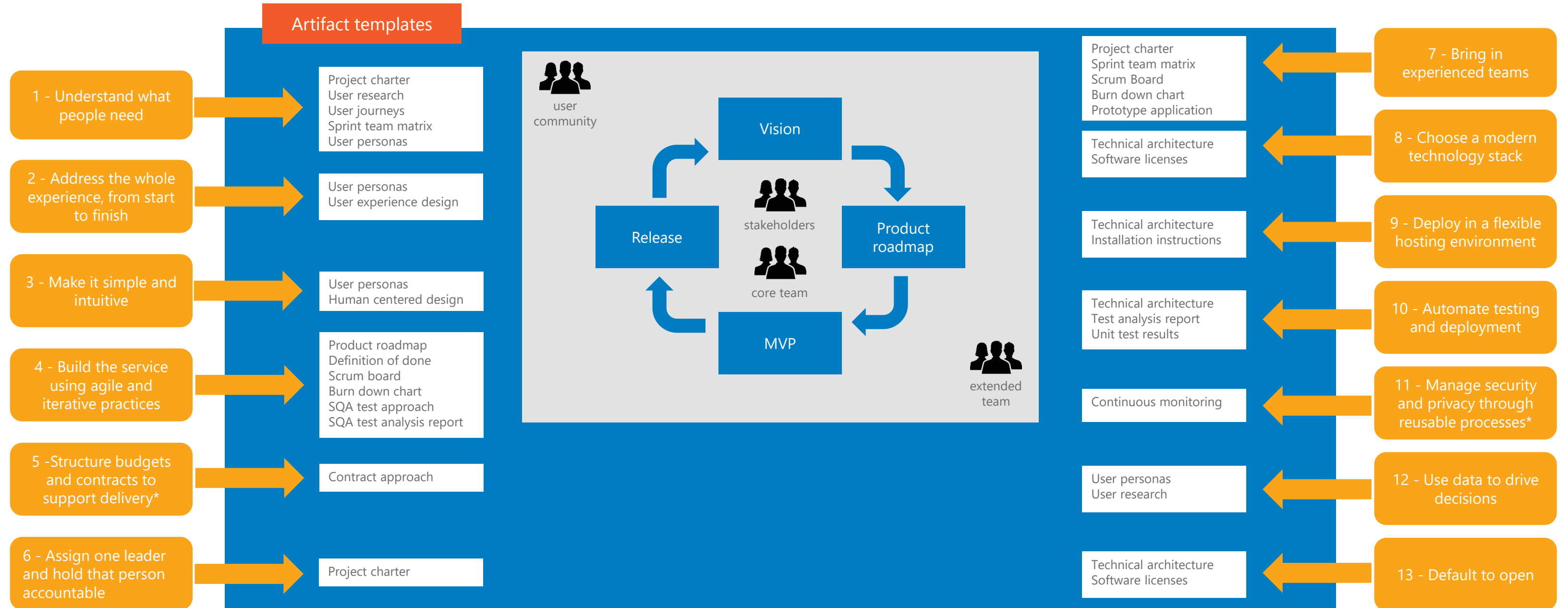
# Best practice digital service plays

- 1 Understand what people need
- 2 Address the whole experience, from start to finish
- 3 Make it simple and intuitive
- 4 Build the service using agile and iterative practices
- 5 Structure budgets and contracts to support delivery
- 6 Assign one leader and hold that person accountable
- 7 Bring in experienced teams
- 8 Choose a modern technology stack
- 9 Deploy in a flexible hosting environment
- 10 Automate testing and deployment
- 11 Manage security and privacy through reusable processes
- 12 Use data to drive decisions
- 13 Default to open

Infosys agile method aligns with these plays

When a process step maps to a play it is highlighted with #

# Infosys agile artifacts align with digital service plays



There is a close correlation between the Infosys agile method and artifacts and the digital service plays

Subsequent slides provide additional details on individual agile method steps

\* The RFI scenario scope does provide an opportunity to soundly demonstrate plays 5 and 11, although these are part of the Infosys agile method

# Infosys *Design Thinking* is...

*"...a method for improving the creative confidence of individuals, teams and organizations to explore areas of significant opportunity which are also complicated by substantial ambiguity."*

driven through a state of mind that is

Human centric,  
empathetic

- Engage with customers
- Observe users in context
- Experience their lives first hand
- Understand their motivations
- Uncover their emotions

Iterative

- Dynamic
- Fast feedback
- Quick to optimize and re-align
- Unwavering focus on user needs

Design think. Design do

- Taking action is part of the problem solving process
- Experiment
- Storyboard
- Role play
- Prototype to learn
- Prototype to crystallize ideas

Collaborative

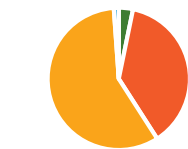
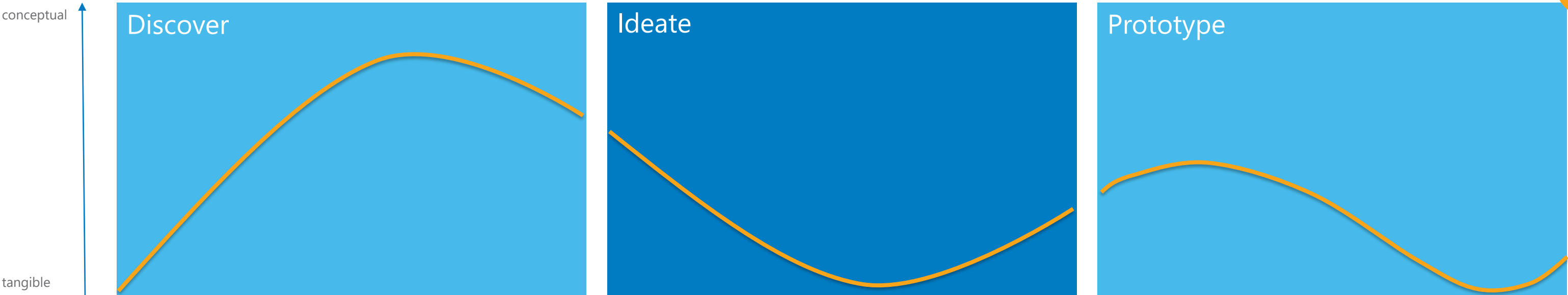
- Unlock creativity
- Interdisciplinary teams
- Collective ownership of ideas

*Design Thinking* isn't a method or a prescription

*Design Thinking* is a state of mind which overlays everything we do

# Infosys *Design Thinking* demands user centric design techniques

- 1
- 2
- 3
- 4
- 12



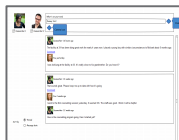
User research



Personas



User journeys



Wireframe walkthrough



Prototypes



User group testing



Inter disciplinary team



Brand survey



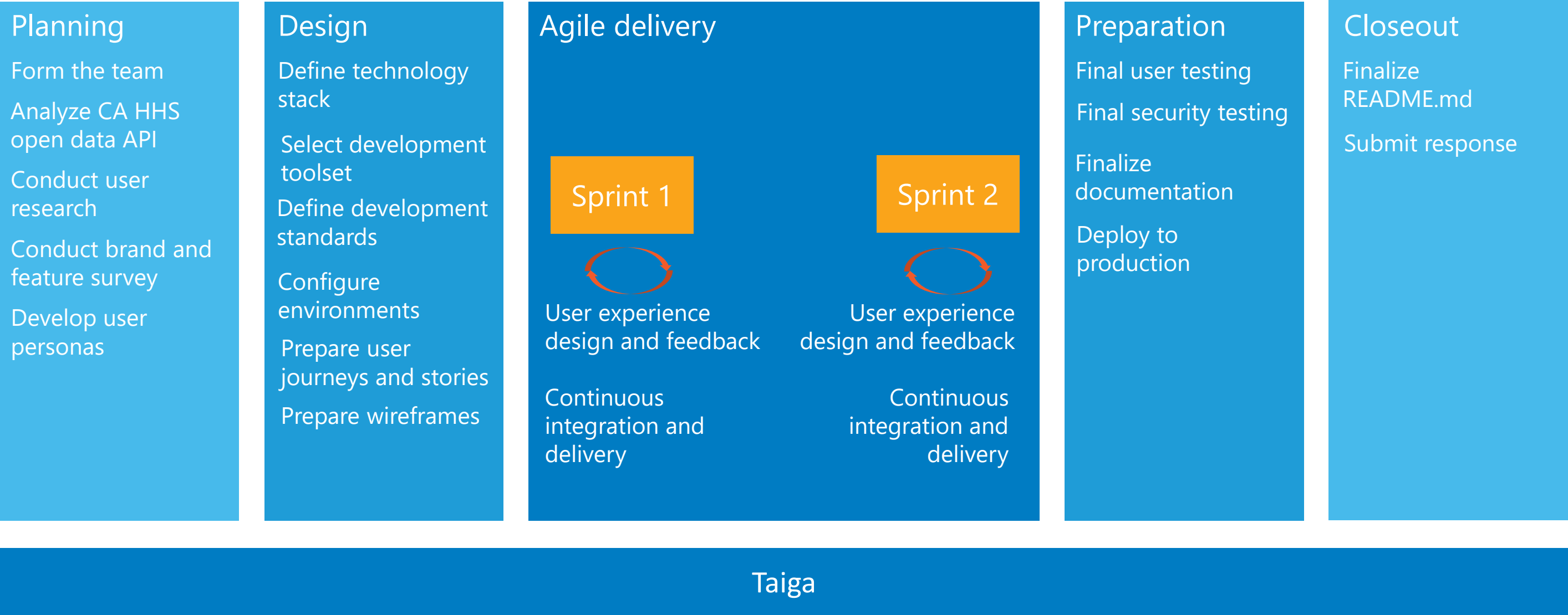
User survey



A/B testing

Our team employed 10 user centric design techniques

Subsequent slides provide additional detail on each technique employed



We estimated 85 points to be delivered

Based on the user stories we developed a 2 sprint plan and used Taiga to manage our work



# Assemble an experienced interdisciplinary core team

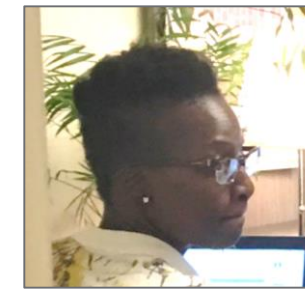
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Product manager:  
Kevin Bell



Interaction designer,  
Usability tester:  
Annette Ross



Delivery manager:  
SurendaNath Indarapu



Front end developer:  
Prasad Hirlikar



Technical architect:  
Satish Mutalik



Back end developer:  
Ganesh Rajagopal



DevOps engineer:  
Mahikdeep Singh



Visual designer:  
Paneer Selvam



Our product manager provides oversight and decision making for the entire *reachout* product  
Each of our chosen core team has experience in agile methods, three have child welfare experience

# Assemble an extended interdisciplinary team – experts and influencers

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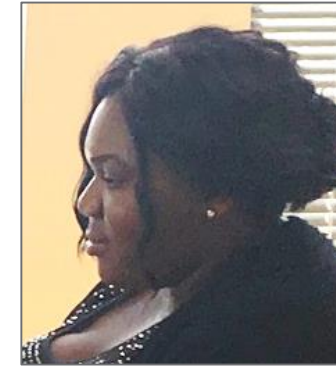
core team



on call internal experts



John Santucci  
Security Engineer



Crystal Peyton  
Writer/Content Designer



Jayantha Ghosh  
Agile Coach



Kuldeep Saini  
Digital Performance Analyst

user representatives



moms and dads

Internal experts on demand to provide technical and functional guidance

External user representatives help build user stories and participate in user testing



# Create personas

1

2

12



## Meet Emily – a parent

*"I want to make sure my son is well cared for, and work on getting him home as quickly as I can"*

Emily is 24 years and is the mother of Michael – a lively 5 year old. Michael's father left California shortly after his birth and intermittently pays child support. Emily completed high school and primarily works in retail in downtown San Francisco. Emily has an apartment in Bayview and relies on public transport to get around. Emily has a smartphone but tries to minimize the use of her data plan to avoid overage charges. She has an iPad at home which is her primary means of internet access. Emily has found it difficult to find and hold steady employment, in part because she has no family supports in the area and has relied on neighbors to take care of Michael while she worked. Recently, Emily has found a job offering more hours, but has not been able to find child care for all of the time she is away from the home. When she is at home, neighbors hear the sound of arguments from Emily's apartment. Three days ago, CPS became involved when Michael was found wandering unattended outside of Emily's apartment building. CPS removed Michael for his own safety after failing to immediately find Emily.



## Meet Anna – a case worker

*"I want to reach out to my families even when I can't see them face to face to help them get back on track"*

Anna is 37 years old. She has been a child and family social worker for almost 8 years, after completing her MSW degree. She is considered one of the more senior case workers in her office. Anna currently has a child caseload of 26 children – including Michael. Anna sometimes struggles to see each family as often as she would like. She spends a lot of time travelling between families, court, schools etc. and worries that she could do more to advise and support families outside of her scheduled visits. Anna has a state issued smartphone that she uses all the time to keep up with her case schedule, look at emails and ask her supervisor for advice. She also uses an office based PC to document her casework, but her travel schedule means that this is not always completely up to date. Anna would like to use natural downtime in her day (on the BART, waiting in court) to keep up with her work and connect more often with her assigned families.

Personas allow us to understand needs and develop opportunities

When developing user stories and reviewing system iterations we ask "What would Emily and Anna think of this?"

# Product definition – *reachout*



*reachout* will:

- Engage the parent at a difficult time
- Bring the parent into the decision making process around foster care
- Give the parent and caseworker an informal communication channel to use between scheduled visits

And nothing else...

Tightly define a product that genuinely helps Emily and Anna through a difficult circumstance

Build a product identity that the team can march behind

See Appendix B for additional details regarding our brand reaction survey

# User journeys help us explore the situation from a user perspective

	Pre Removal	Michael Removed	Seek Support			Michael Returns Home
Activity	Working long hours Juggling child care for Michael	Try to find out where Michael has gone	Try to understand fostering options for Michael Try to exert control on foster care location	Seek state subsidized child care services	Attend counselling for parenting skills and anger management	Maintain stability with Michael while still working Settle Michael in new day care facility Demonstrate to CPS that situation has been resolved
Questions		Why me? What did I do wrong? What do I need to do to get Michael home? Who can I turn to for support?	How can I be sure that Michael is in a safe place? How can control where he goes? How can I keep in contact with Michael?	How can I keep working while providing care for Michael? How much will daycare cost?	How do I demonstrate that my parenting skills have improved? What is CPS looking for?	How do I demonstrate that my parenting skills have improved? What is CPS looking for? Might they remove Michael again?
Emotion	Stress Exhaustion	Shock Despair Fear	Frustration Powerlessness Uncertainty	Hope	Hope Uncertainty	Joy Relief
Opportunity	Easier access to support before situation becomes critical		Provide information to assist Emily in becoming comfortable with placement decisions Provide mechanism to allow Emily to exercise some influence on placement decisions based on her needs and her wishes for Michael Provide mechanism to seek, and quickly get, updates, reassurance and advice Provide mechanism to report progress against agreed turnaround actions	Provide ongoing, frequent informal support and encouragement Frequent checkpoints by caseworker can assist in keeping Michael safe and preventing a repeat		

We consider the whole experience – end to end

We consider what the user does

We consider the sequence of user actions

We consider questions and uncertainties the user uncovers

We consider what the user feels at each activity

We discover opportunities for improvement

The period of Michael’s removal is the most traumatic period for Emily and Michael

The highest impact goal will be to shorten the period of removal and ensure stability when Michael returns home

# Create user journey for Emily

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Activity

Questions

Emotion

Opportunity

## Pre Removal

Working long hours  
Juggling child care for Michael

## Michael Removed

Try to find out where Michael has gone

## Seek Support

Try to understand fostering options for Michael  
Try to exert control on foster care location

Seek state subsidized child care services

Attend counselling for parenting skills and anger management

## Michael Returns Home

Maintain stability with Michael while still working  
Settle Michael in new day care facility  
Demonstrate to CPS that situation has been resolved

CPS case closed

Why me?  
What did I do wrong?  
What do I need to do to get Michael home?  
Who can I turn to for support?

How can I be sure that Michael is in a safe place?  
How can control where he goes?  
How can I keep in contact with Michael?

How can I keep working while providing care for Michael?  
How much will daycare cost?

How do I demonstrate that my parenting skills have improved?  
What is CPS looking for?

How do I demonstrate that my parenting skills have improved?  
What is CPS looking for?  
Might they remove Michael again?

Stress  
Exhaustion

Shock  
Despair  
Fear

Frustration  
Powerlessness  
Uncertainty

Hope

Hope  
Uncertainty

Joy  
Relief

Easier access to support before situation becomes critical

Provide information to assist Emily in becoming comfortable with placement decisions  
Provide mechanism to allow Emily to exercise some influence on placement decisions based on her needs and her wishes for Michael  
Provide mechanism to seek, and quickly get, updates, reassurance and advice  
Provide mechanism to report progress against agreed turnaround actions

Provide ongoing, frequent informal support and encouragement  
Frequent checkpoints by caseworker can assist in keeping Michael safe and preventing a repeat

Emily needs a way to be involved in decision making for Michael

She wants ways of seeking support between social worker visits for advice, progress reporting and encouragement

# Create user journey for Anna

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Activity

Questions

Emotion

Opportunity

Pre Removal

Michael  
Removed

Provide Support

Michael Returns Home

Assess whether Michael's safety is at risk  
Try to find out who the mother is and where she is  
Remove Michael

Try to understand Emily's needs for a foster placement close to home, school or place of work  
Find a longer term foster placement

Identify state subsidized child care services for Emily

Refer Emily to counselling services for parenting skills and anger management?

Return Michael to Emily  
Monitor the family for continued stability

Close the CPS case

Which facility has an available slot for Michael?

How can I involve Emily in the decision making?  
How do I balance her needs with Michael's?

Will stable child care be enough for Emily to turn things around?

How can I support and encourage Emily more frequently?  
How can I check in to see that she is attending counselling and it is helping?

How can I check in with Emily outside of scheduled visits to encourage her and seek early warning if the situation is deteriorating?

Stress

Rushed

Rushed

Rushed  
Pleased with progress

Rushed  
Hopeful  
Fulfilled

Rushed  
Fulfilled  
Joy

Mobile directory of available placement slots

Provide information to assist Emily in becoming comfortable with placement decisions  
Provide a mechanism for Anna to provide support and encouragement to Emily while Michael is removed  
Provide a mechanism for Anna to suggest additional services that might help  
Provide a mechanism for Anna to check on Emily's progress with counselling

Provide ongoing, frequent informal support and encouragement  
Frequent checkpoints by caseworker can assist in keeping Michael safe and preventing a repeat

Anna needs a way to bring Emily into the decision process for Michael's placement and keep her engaged  
She needs a way to reach out to Emily to provide advice, encouragement and check on progress between visits



# Collaborative working, multiple stakeholders

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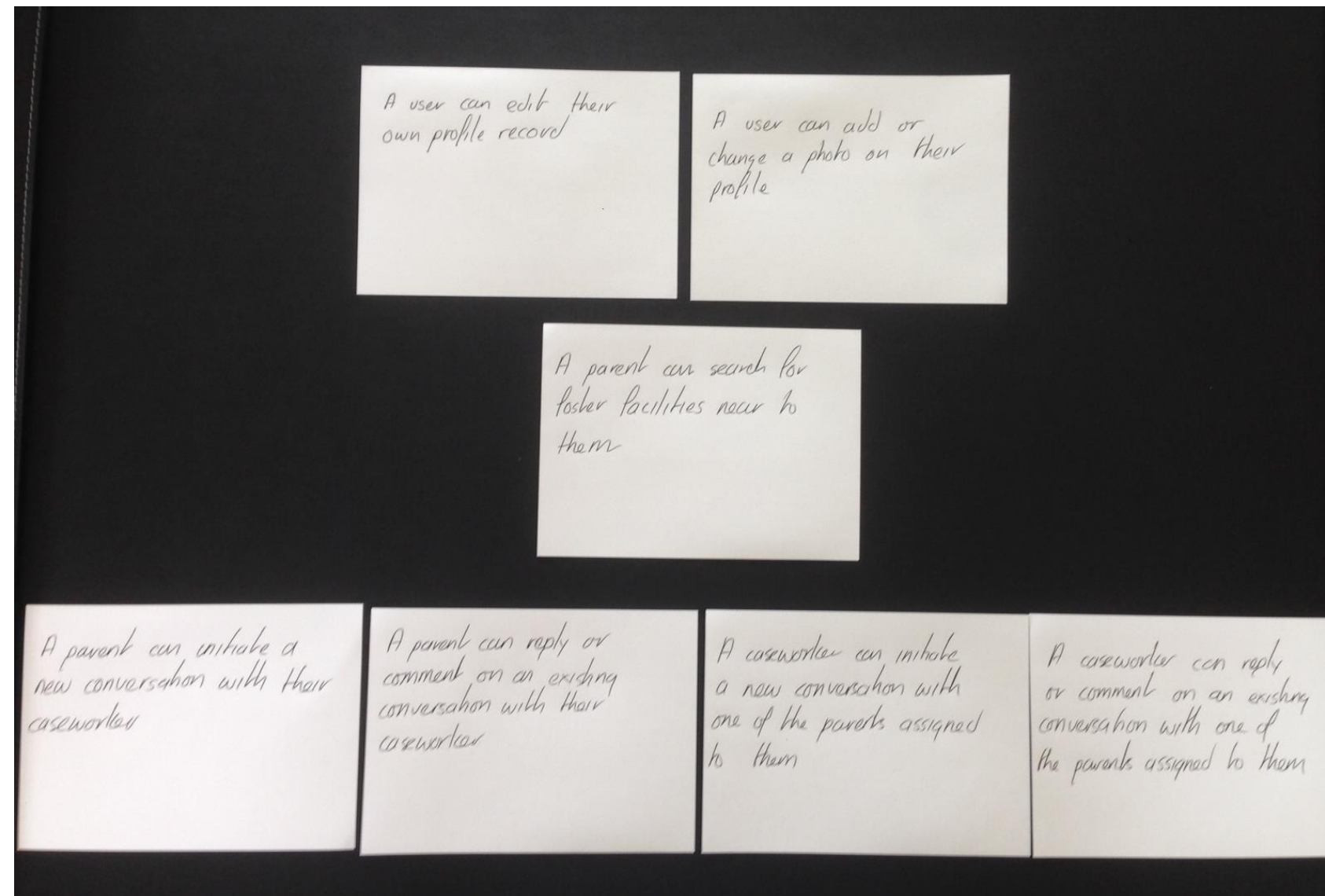


Widest possible combination of viewpoints  
Agile coach helped to keep everyone focused and on track

# Journeys inform user stories

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We initially identified seven user stories falling under three broad categories

Editing a user profile, searching for facilities and conversations between the parent and case worker

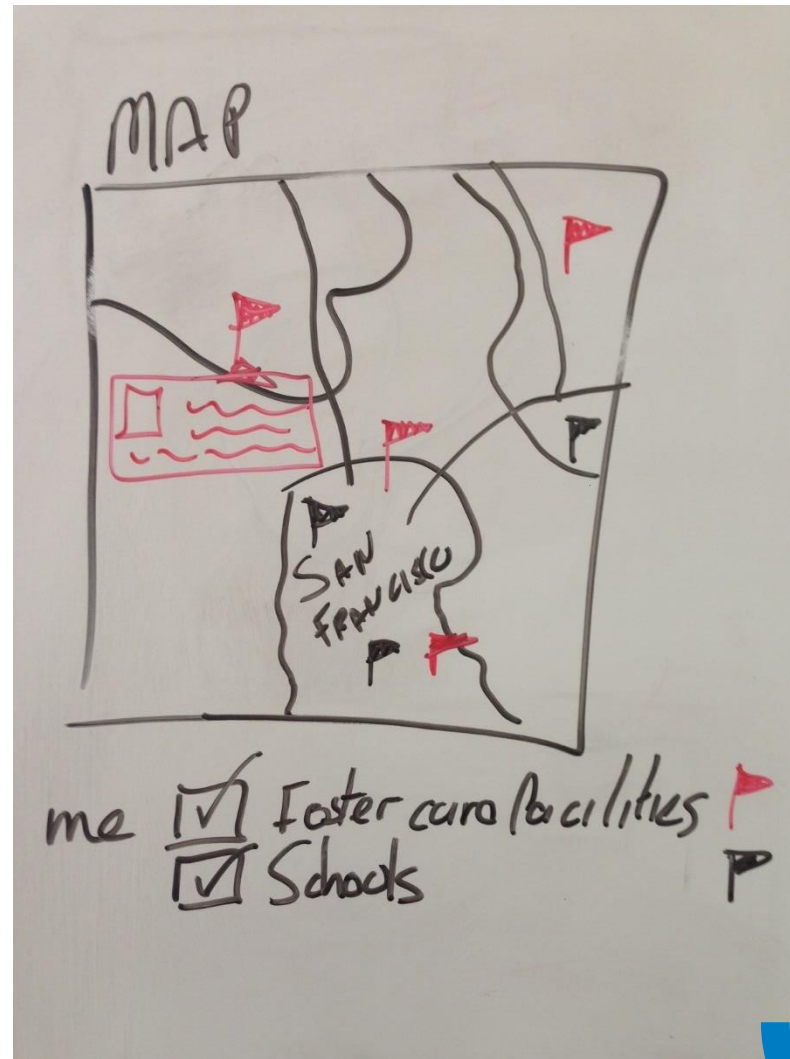
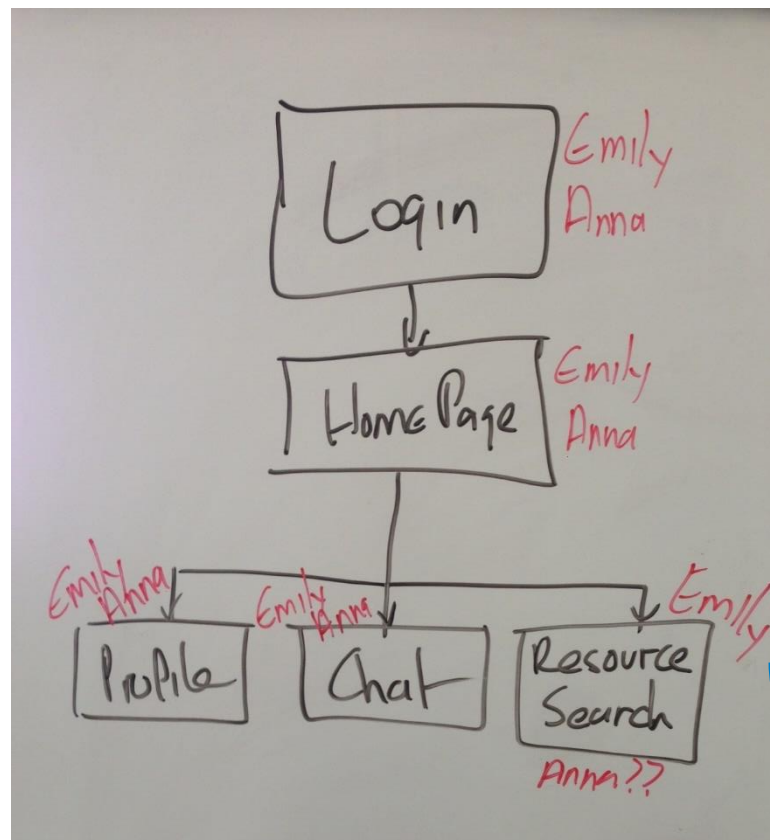
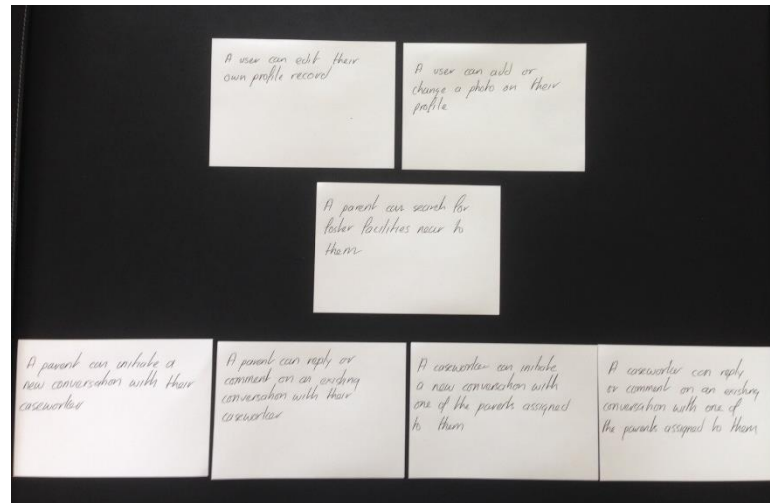


# User stories informed product flow, wireframes and features

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- 1/ Shows Foster care facilities within 20 miles of profile address *Need default*
- 2/ Only show licensed facilities
- 3/ Left checkboxes offer additional types to be plotted: schools, subway, others?
- 4/ Selecting a mapped facility shows: Facility name, address, phone, contact person capacity
- 5/ Can the user change zip to start search
- 6/ Do they need directions from profile address

Each user story generated multiple product features

All user stories and requirements are captured with experts and user representatives, then transferred to Taiga tool

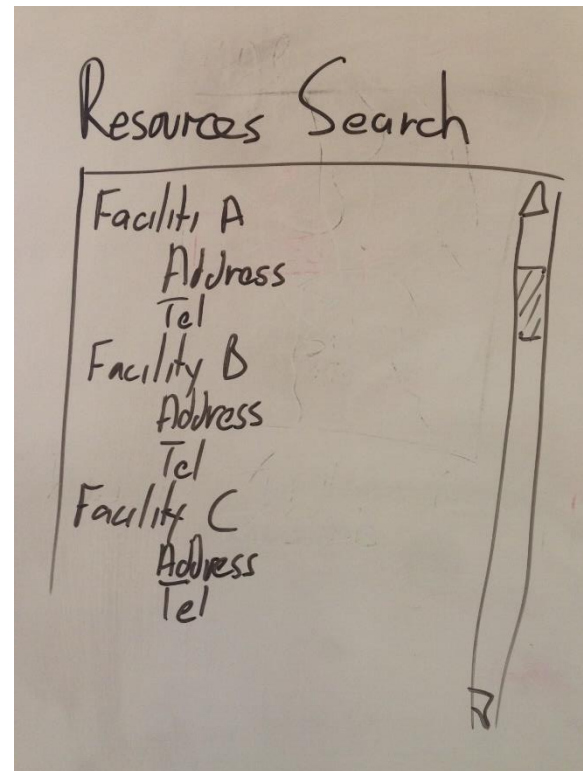
# Survey A/B testing used to select between feature alternatives

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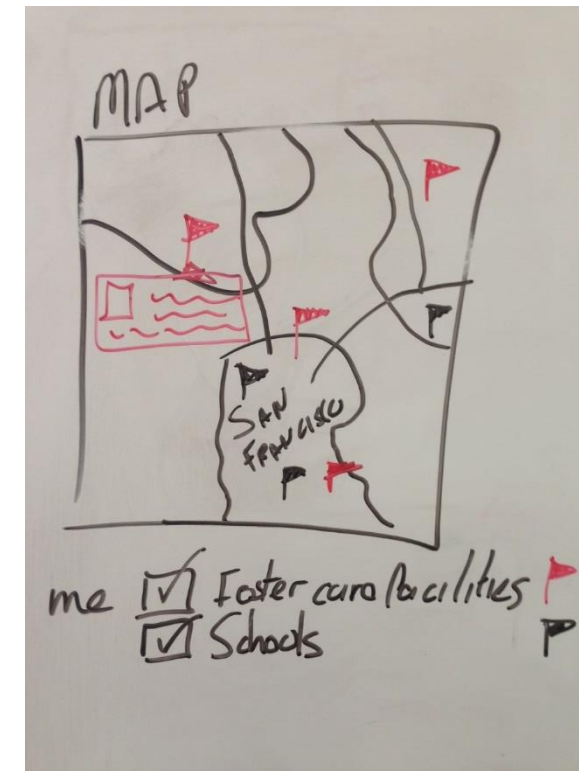
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Option a – the list  
Search results displayed in a table  
Search results based on zip code  
No geographical context



Option B – the map  
Search results displayed graphically  
Search results based on geocode – not zip code  
Nearby useful locations also displayed

We selected the map approach for this feature

Our survey suggests this is the preferred presentation method for geographic based data

See Appendix B for additional details regarding our feature set survey

# Define technology stack

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11 13

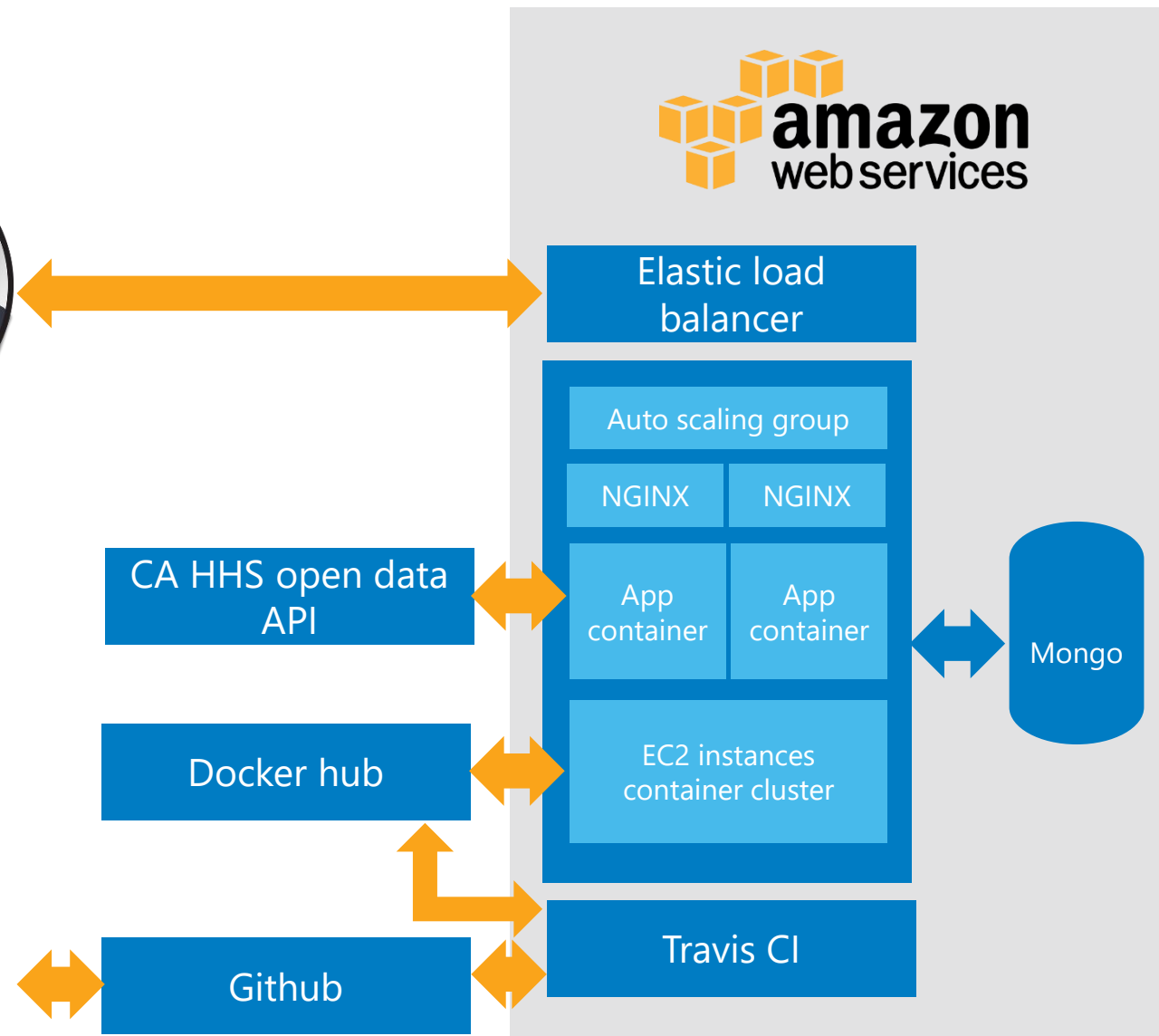
Physical



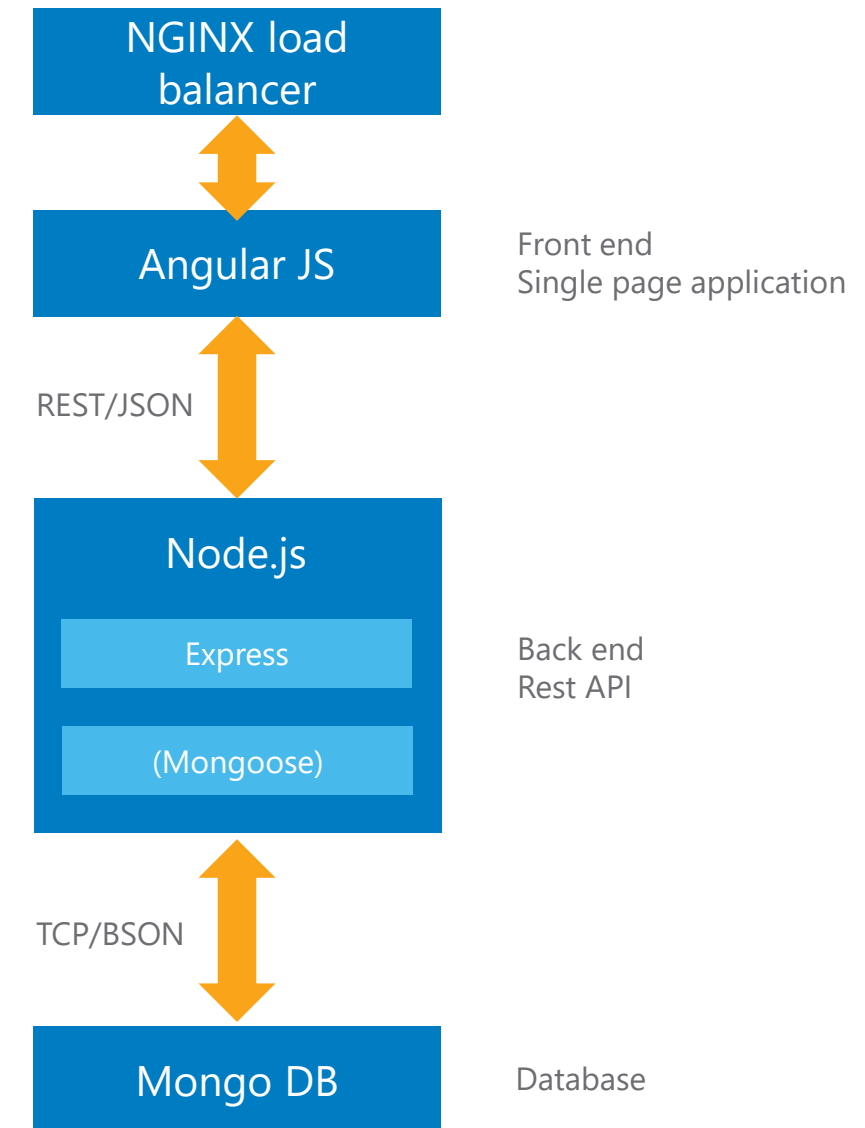
Users



Project team



Logical



We selected a modern and open stack

Our selection aims to support easy integration between disparate components



# Product selection



Tool	Function	Rationale for selection
Mean.js Framework Mongo DB (v 3.2.6 April 2016), Express.js, Angular.js, Node.js (v 6.2.0 May 2016), SuperTest.js	Database plus front end and middleware frameworks	Single open source tool stack: REST-JSON API, No-SQL database Improved separation of concerns, to promote reuse and maintainability
Github	Cloud based source code control	Open source Aligns with CA RFI technology direction
Travis CI	Continuous integration engine Automated unit testing execution Cloud based	Open source Synchronizes with GitHub Deploys to AWS Automated test script execution
Docker	Application container	Open source Eliminate environment inconsistencies
Taiga	Agile project management tool Cloud based	Open source
Google Analytics	Web analytics	Widely used analytics tool Supports A/B testing
New Relic	Application performance monitoring Cloud based	Deep application and transaction monitoring Easy integration with node.js framework
Amazon Web Services hosting	Cloud based hosting infrastructure	Scalable, elastic and secure Proven cloud infrastructure
Pencil (v2.0.5 2012)	Wireframe development tool	Open source
Mocha	Back end test scripting tool Cloud based	Open source Integrates with Travis CI
Karma	Front end test scripting Cloud based	Open source Integrates with Travis CI
Survey Monkey	Survey creation, capture and analysis Cloud based	Ease of use Ability to poll anonymous users for generic questions

All but one software tool (New Relic) are available as open source and/or free licenses

Every tool selected meets your definition of modern



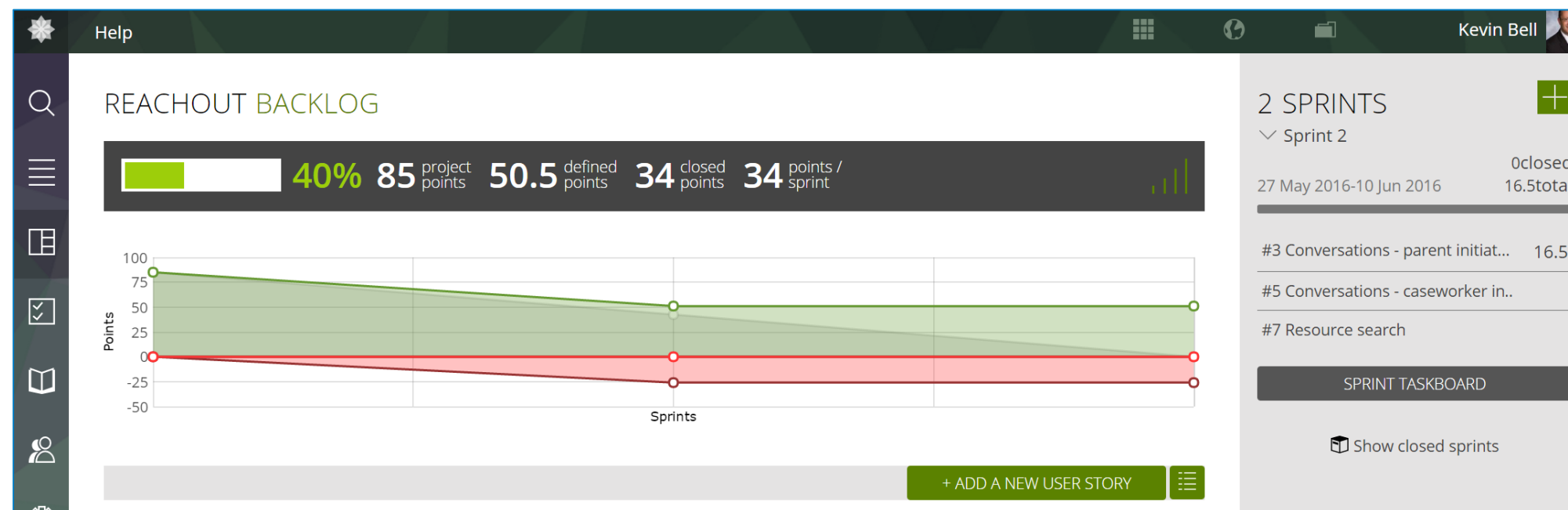
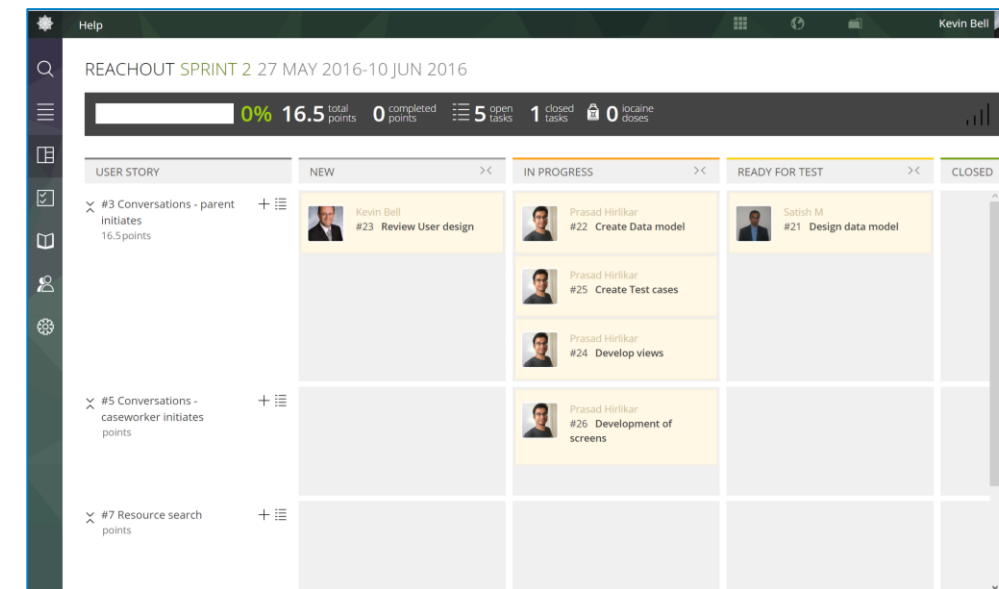
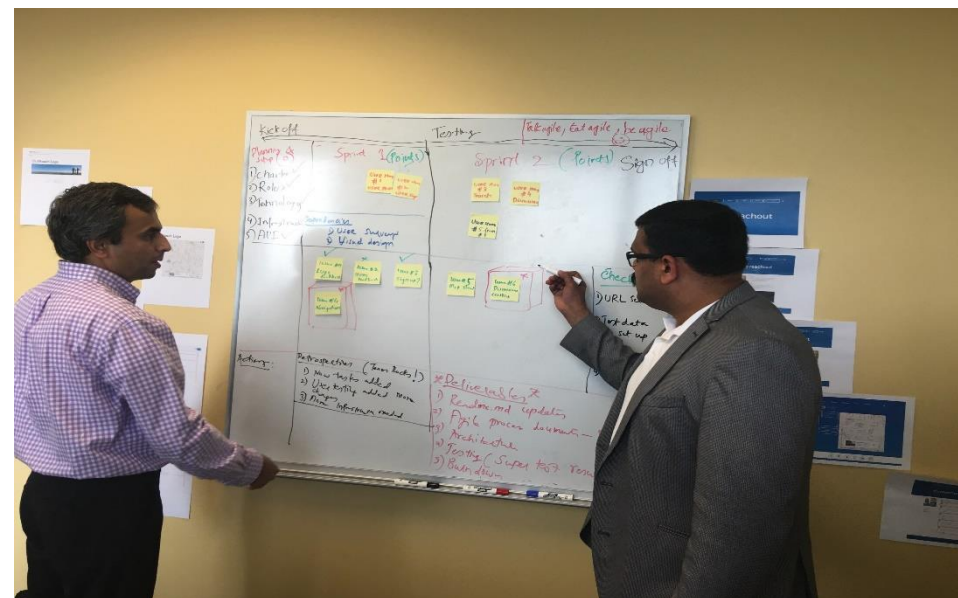
<https://uspto.github.io/designpatterns/index.html>

USPTO UI Design Library is an open source library designed for use in governmental applications  
Contains a style guide, pattern library and Bootstrap theme

# Sprint planning and management

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Taiga was used to document and manage all project development activities

Taiga status used to manage scrum meeting agenda and retrospectives

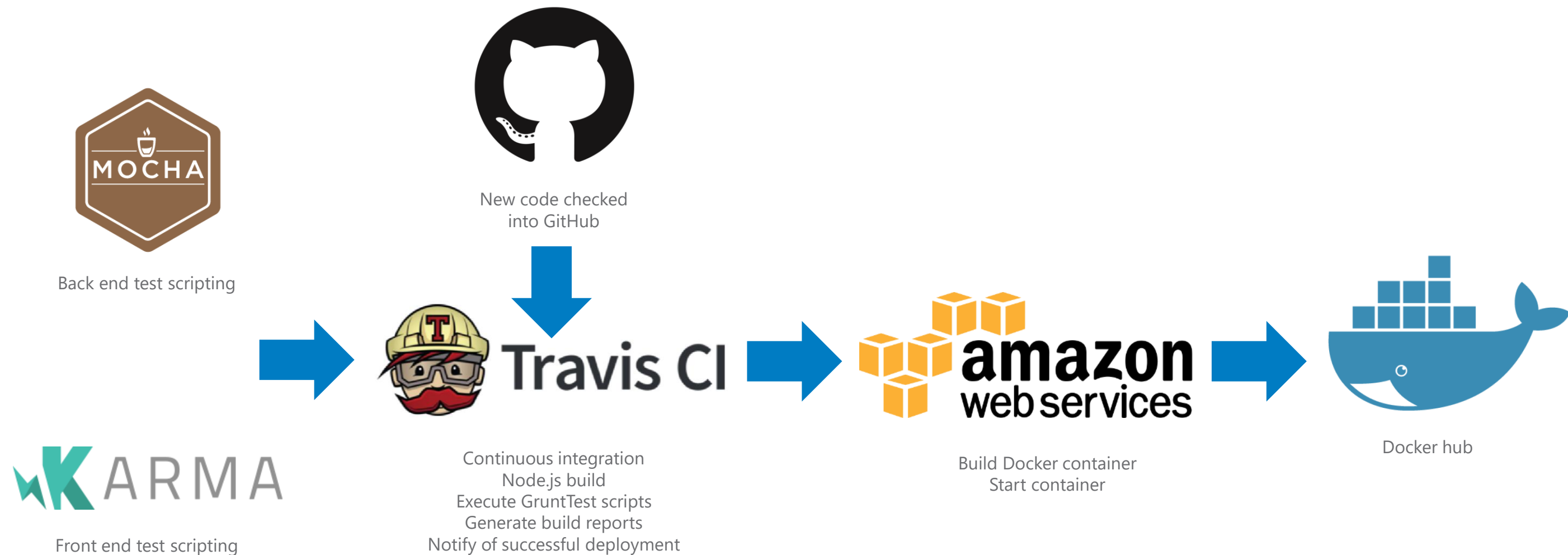
# Continuous integration, automated unit testing, containerization

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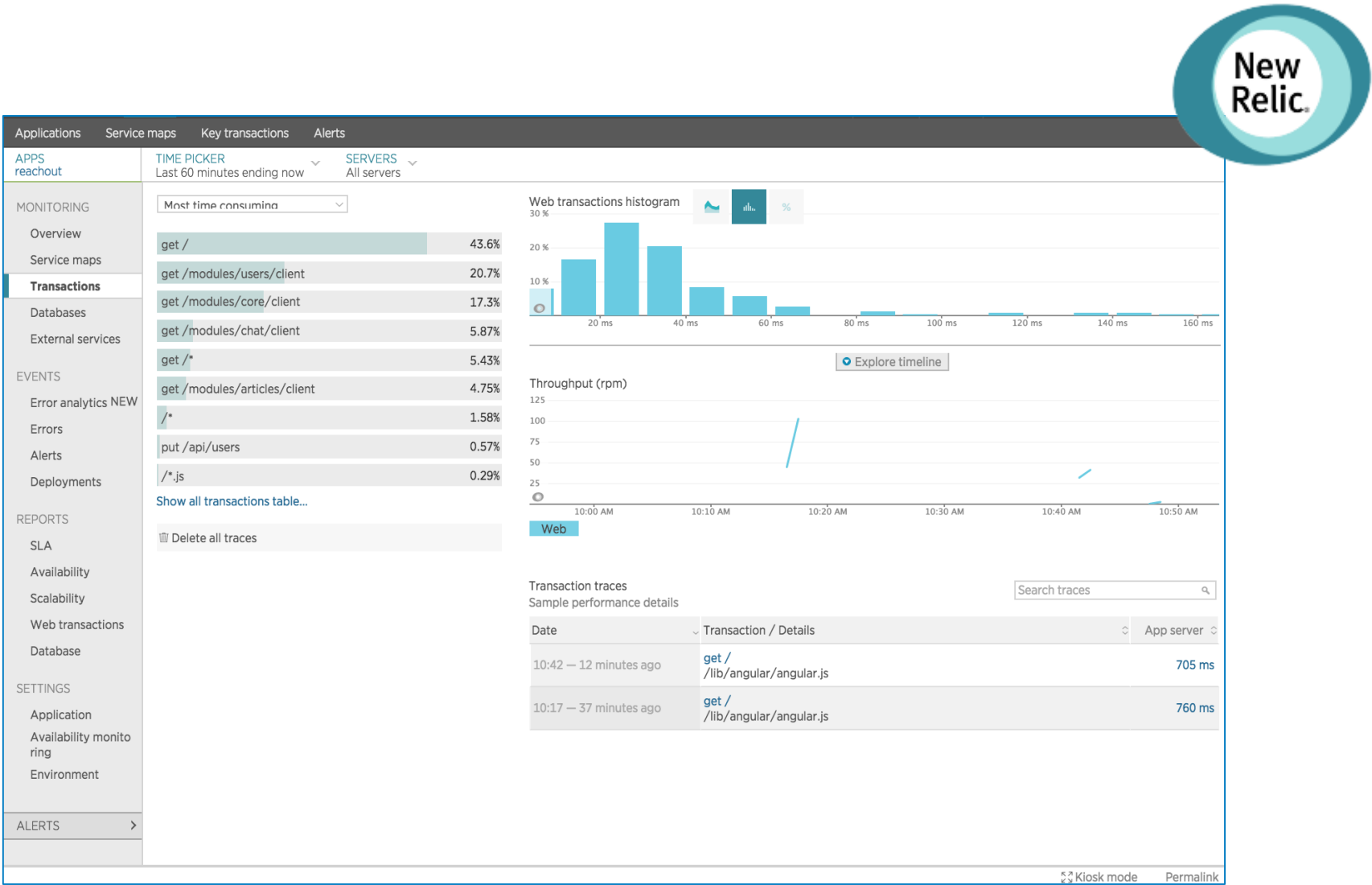
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When new code is checked into GitHub, Travis CI automatically conducts a build  
Unit test scripts are automatically executed and, if successful, the code is deployed to AWS within a Docker container

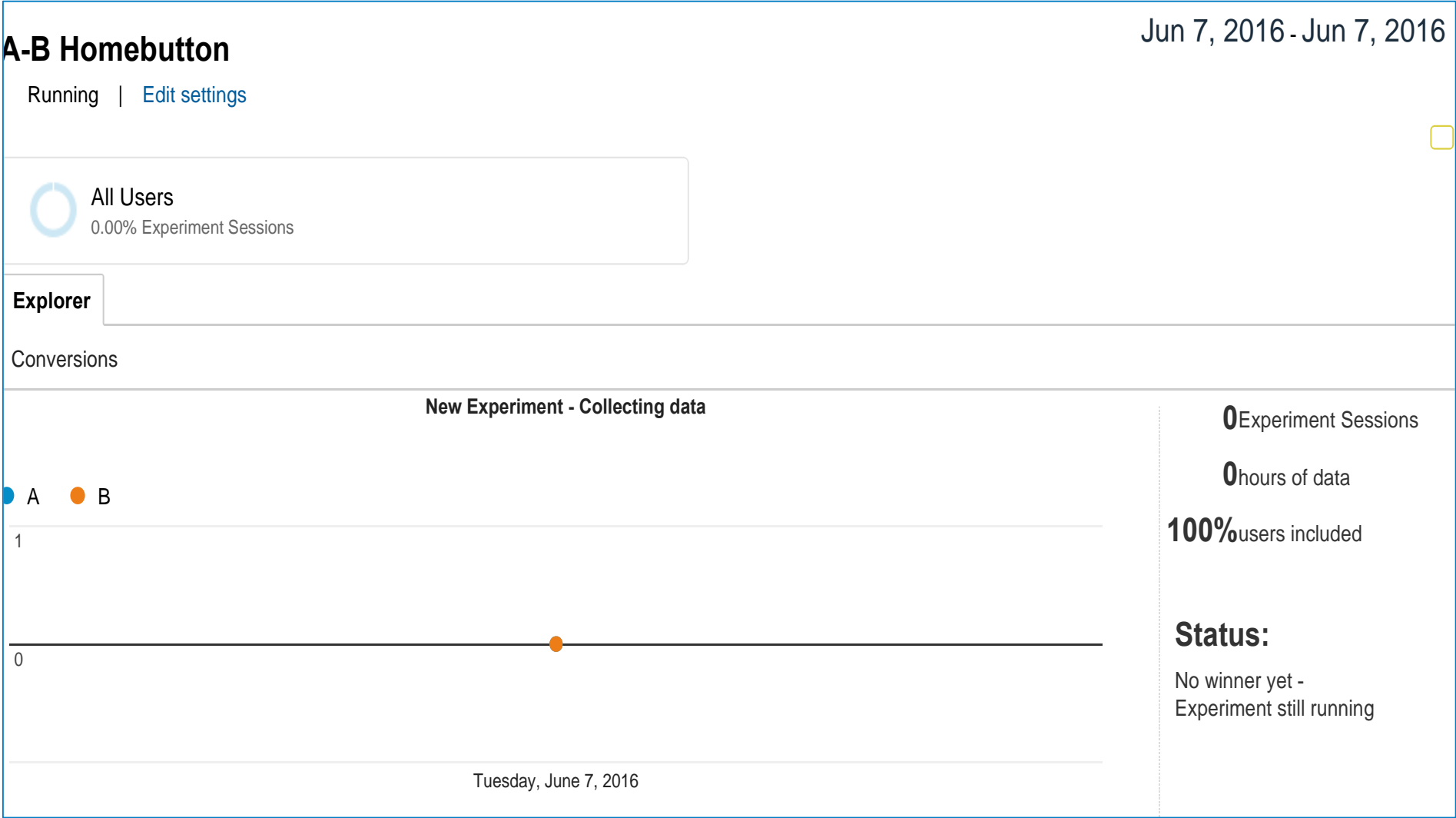
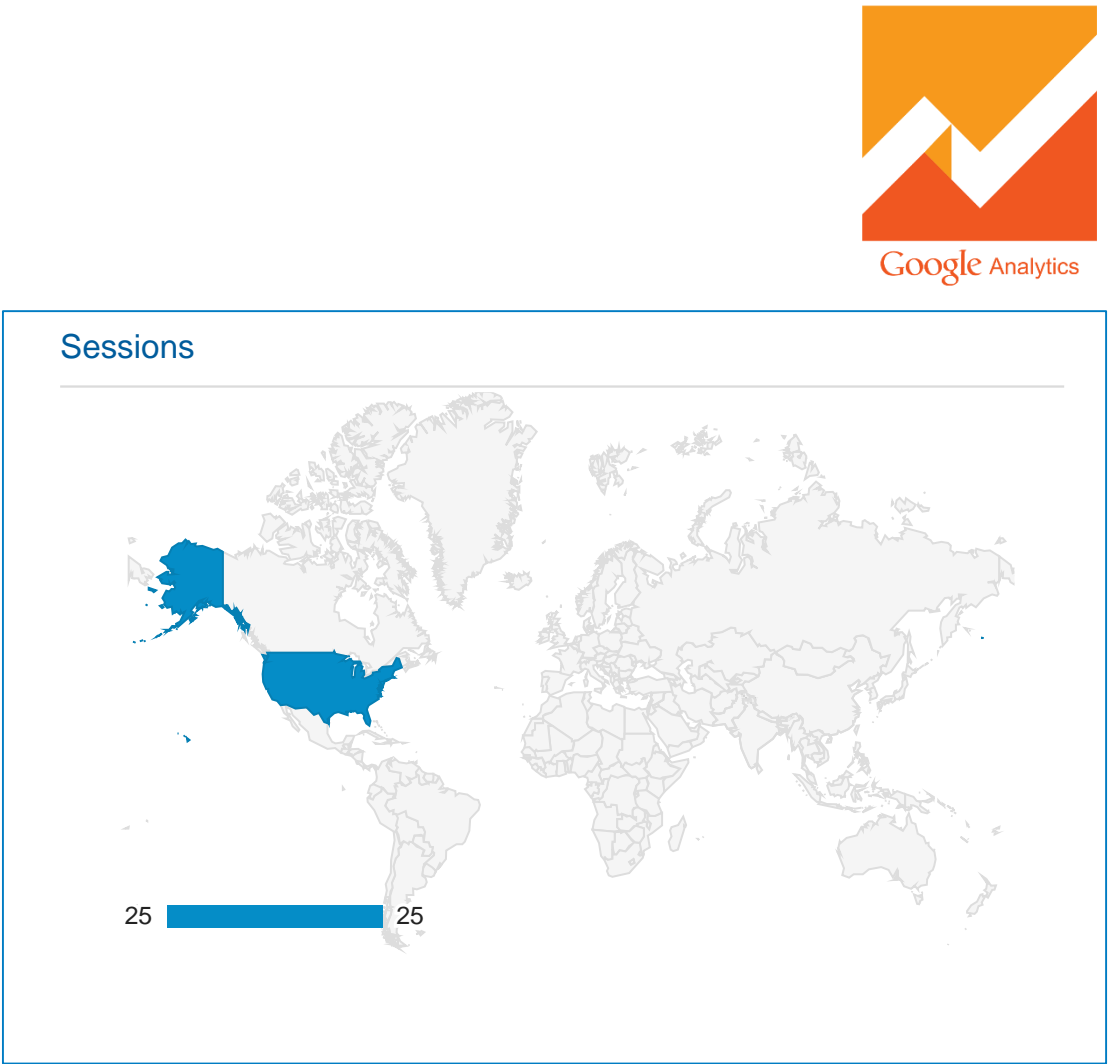
# Continuous monitoring



New Relic allows us to continuously monitor deployed *outreach*

Deep performance monitoring allows traceability down to the transaction level

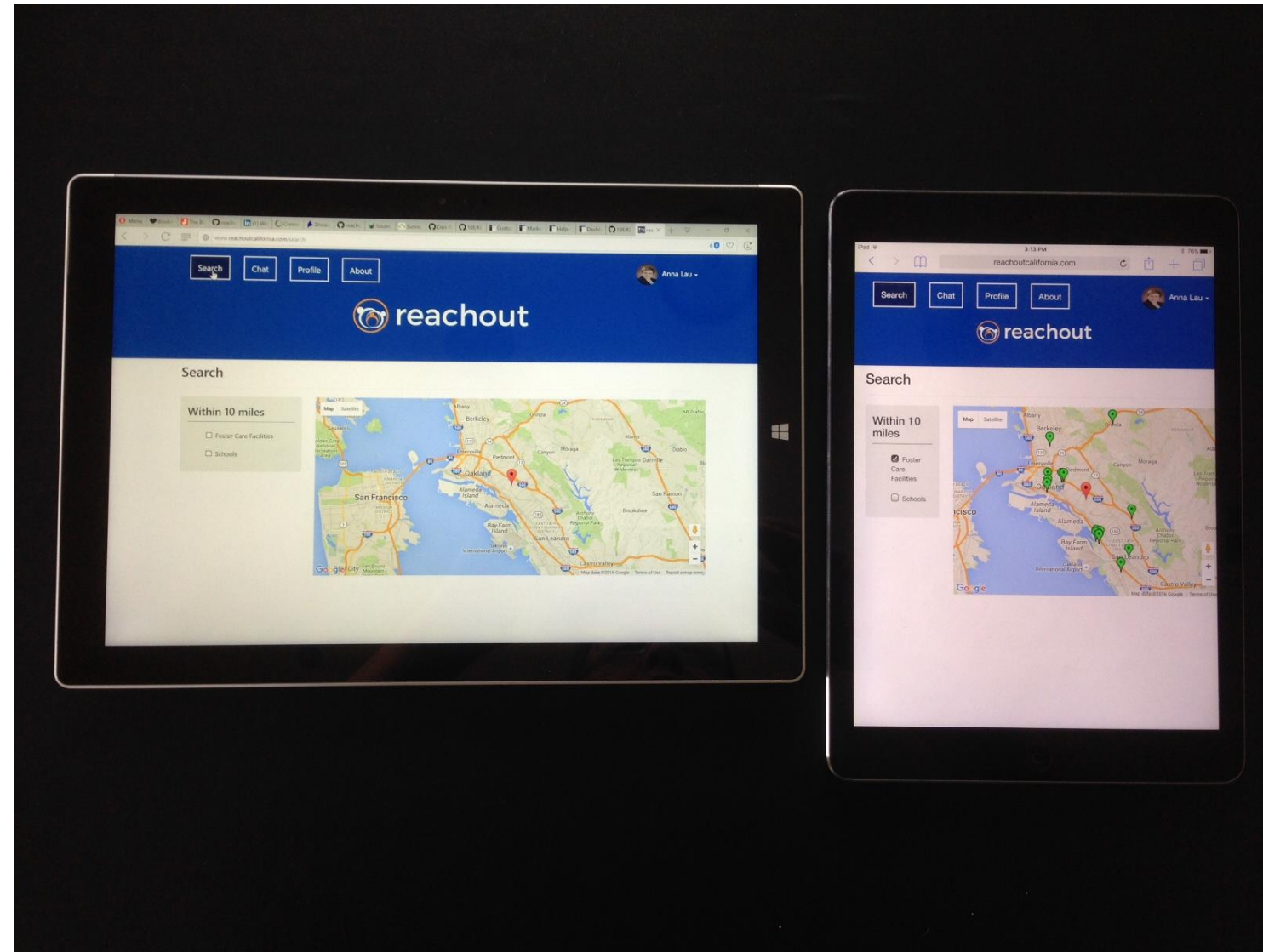




Google Analytics was selected for user monitoring  
A/B testing was used to discover the optimal positioning for navigation buttons

# Responsiveness, device and browser testing

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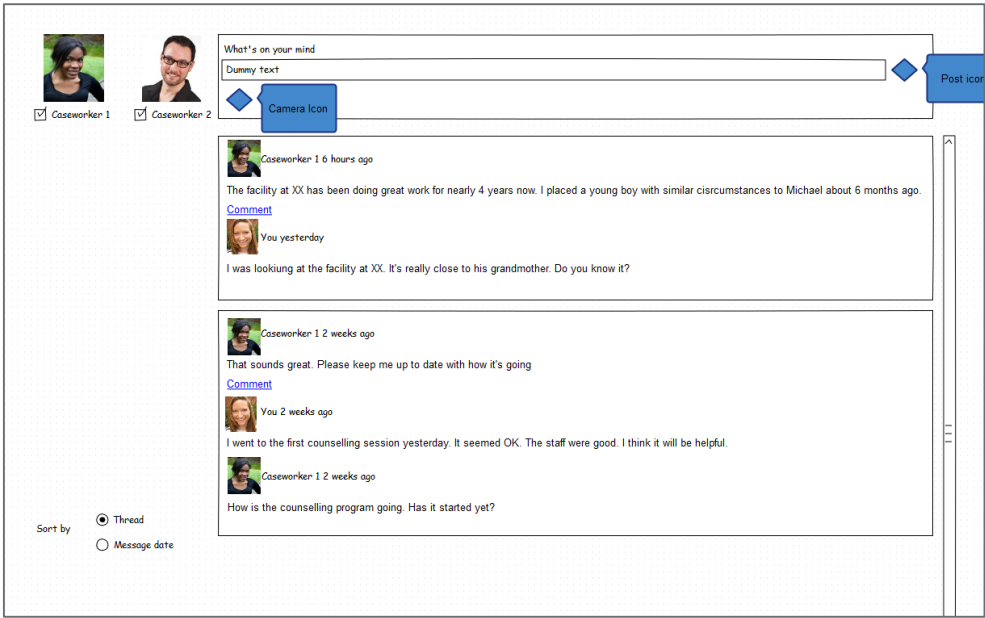


*reachout* tested on multiple devices: PC, Mac, Surface Pro, iPad and iPhone

*reachout* tested on multiple browsers: Chrome, Safari, IE and Opera

# User testing approaches

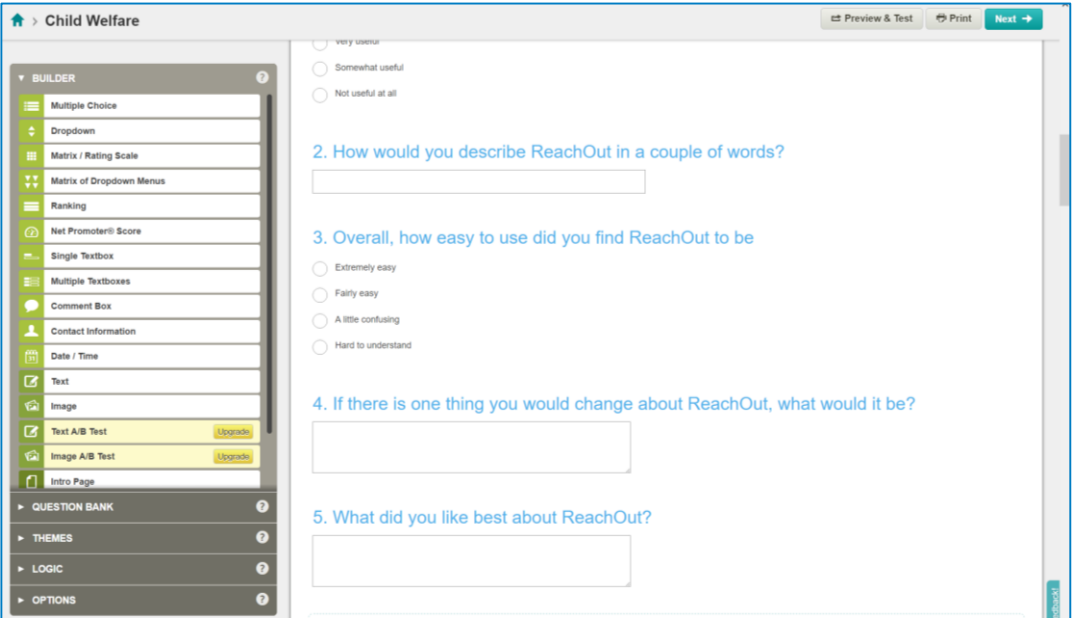
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Wireframe prototype testing with user groups



User group testing



User survey on prototypes

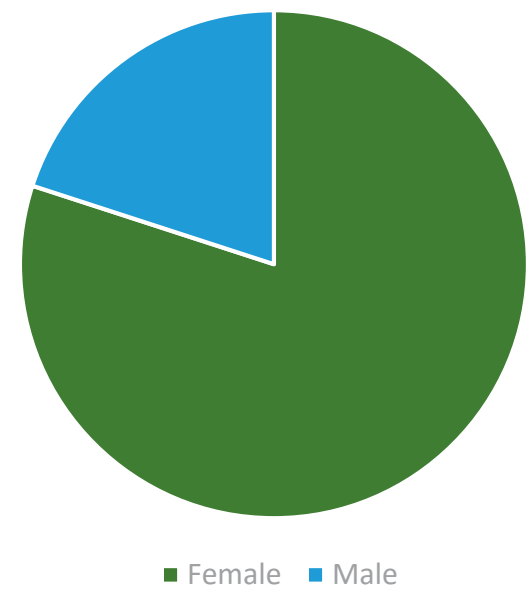
Internal and external stakeholders polled early and often  
Multiple techniques are used to overcome user bias, statistical flaws,

See Appendix C for additional details regarding our user group reaction survey

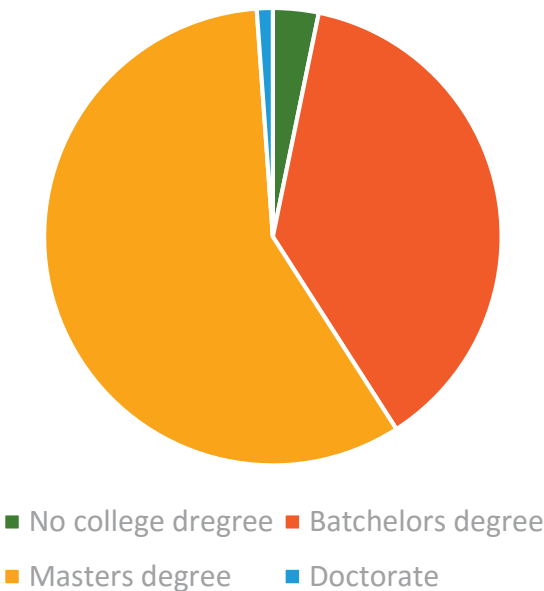
# Appendix A – User Research

# Learning about CPS social workers in California

Gender of social workers 2013 (Policy.Mic)



Education of California Social Workers 2012 (California Social Work Education Center)



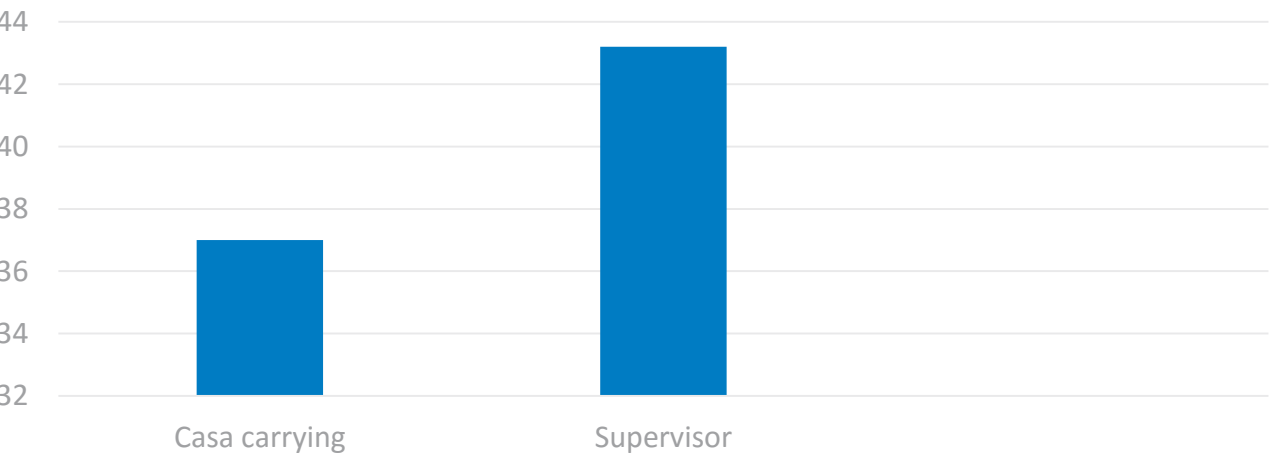
Social Worker Salary Comparison With Other Service Careers 2011 (Sokanu)

## Social Worker salary comparison

Social Workers earn more than 76% percent of Services careers in California. Social Worker salaries are in the top 65% of all careers in California.

Counseling Psychologist Salary in California	\$81k	<div></div>
Firefighter Salary in California	\$69k	<div></div>
<b>Social Worker Salary</b>	<b>\$65k</b>	<div></div>
Energy Broker Salary in California	\$56k	<div></div>
Embalmer Salary in California	\$48k	<div></div>
Financial Clerk Salary in California	\$41k	<div></div>
Sailor Salary in California	\$34k	<div></div>
Courier Salary in California	\$29k	<div></div>
Janitor Salary in California	\$24k	<div></div>
Nail Technician Salary in California	\$19k	

Age of Social Workers 2012 (California Social Work Education Center)



Most CPS social workers are female and in their mid-thirties

They are highly educated and compensated moderately well, but perhaps not in line with their education



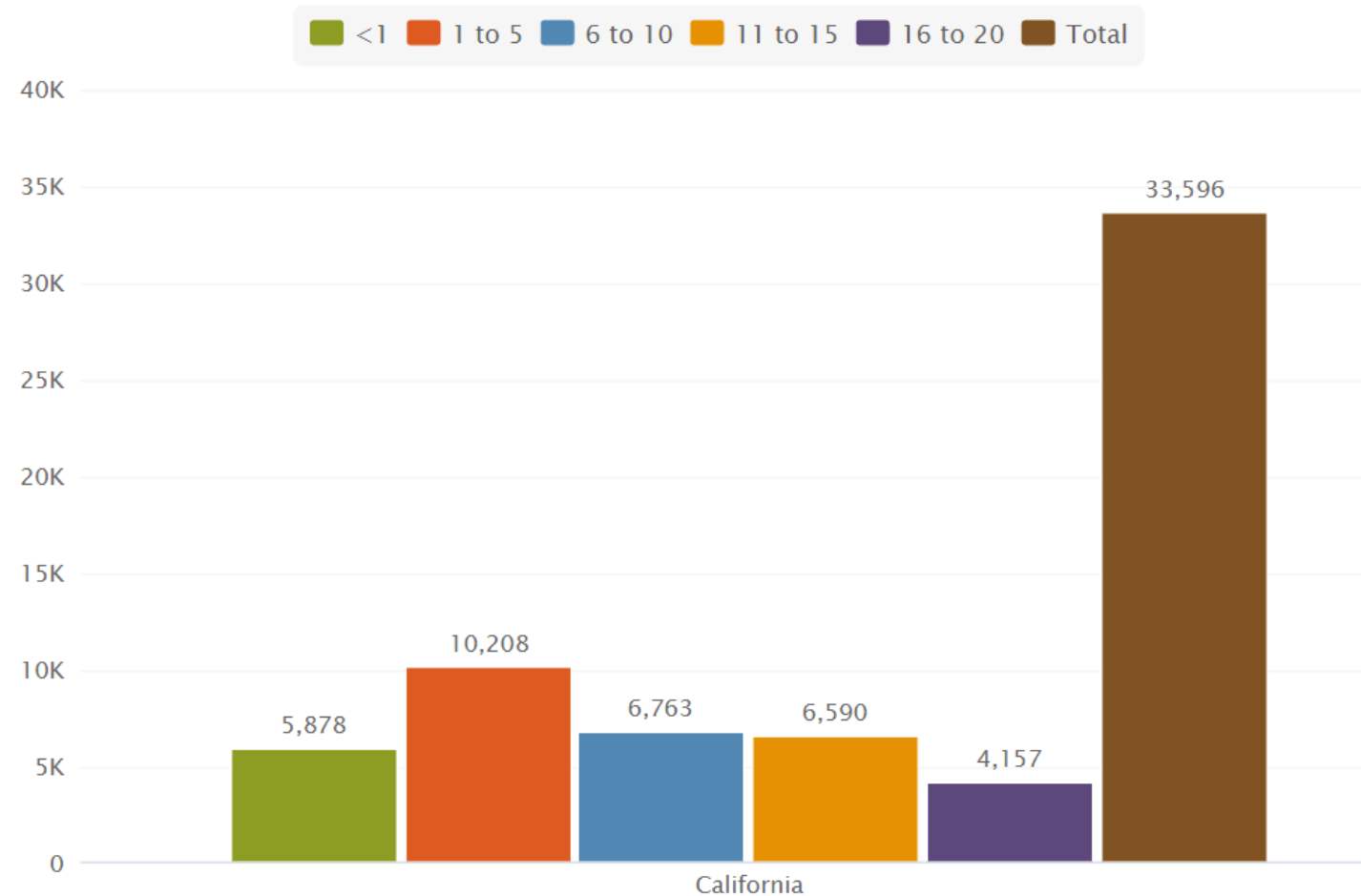
# Learning about children removed by CPS in California

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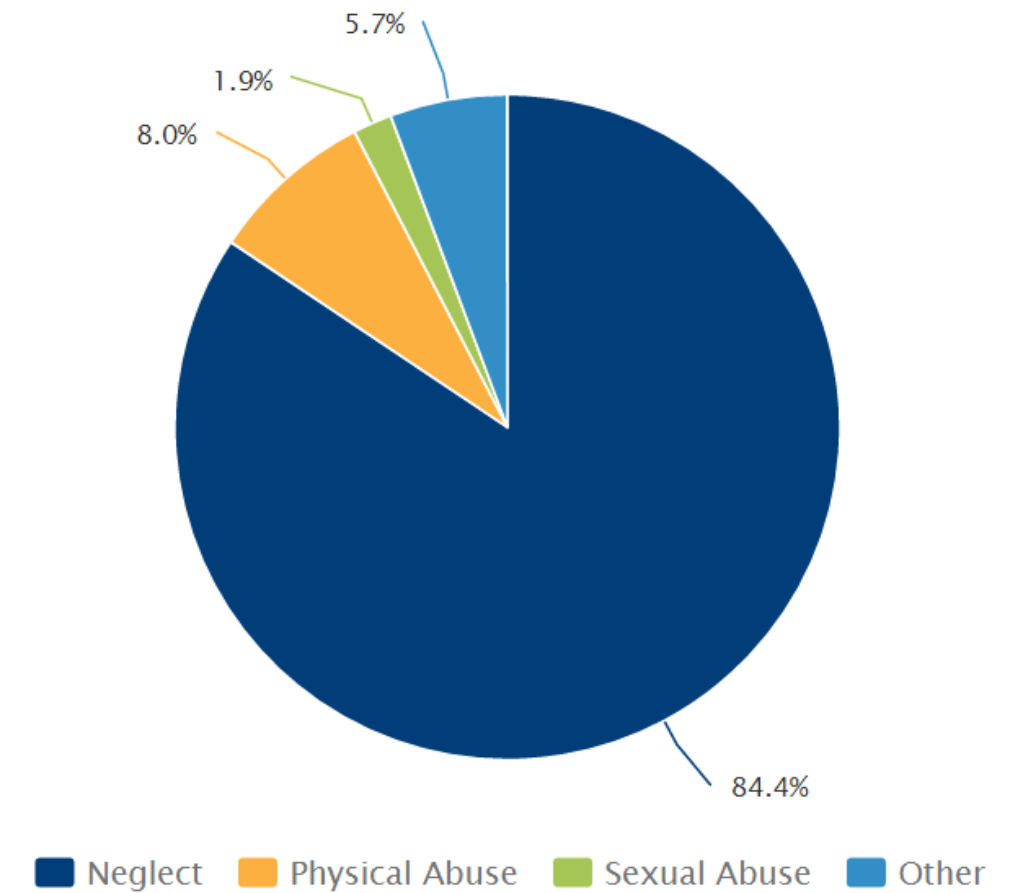
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Number of children removed 2013 (National KIDSCOUNT)



Reason for removal 2014 (kidsdata.org)



10,208 children in the 1-5 age group were removed in 2013

Most children were removed for reasons of neglect

“Average wait for CPS services in California is 16 days” – ACF 2012

“23% of unmarried mothers receive child support in California” – Annie E. Casey Foundation 2013

“Foster youth on average move schools two or three times per year” – CA OAG 2014

Once CPS is involved, it can take time to get things in motion – a critical and worrying time for the parent  
Keeping the child on track at school is a challenge

# Appendix B – Brand Reaction & Feature Set Survey



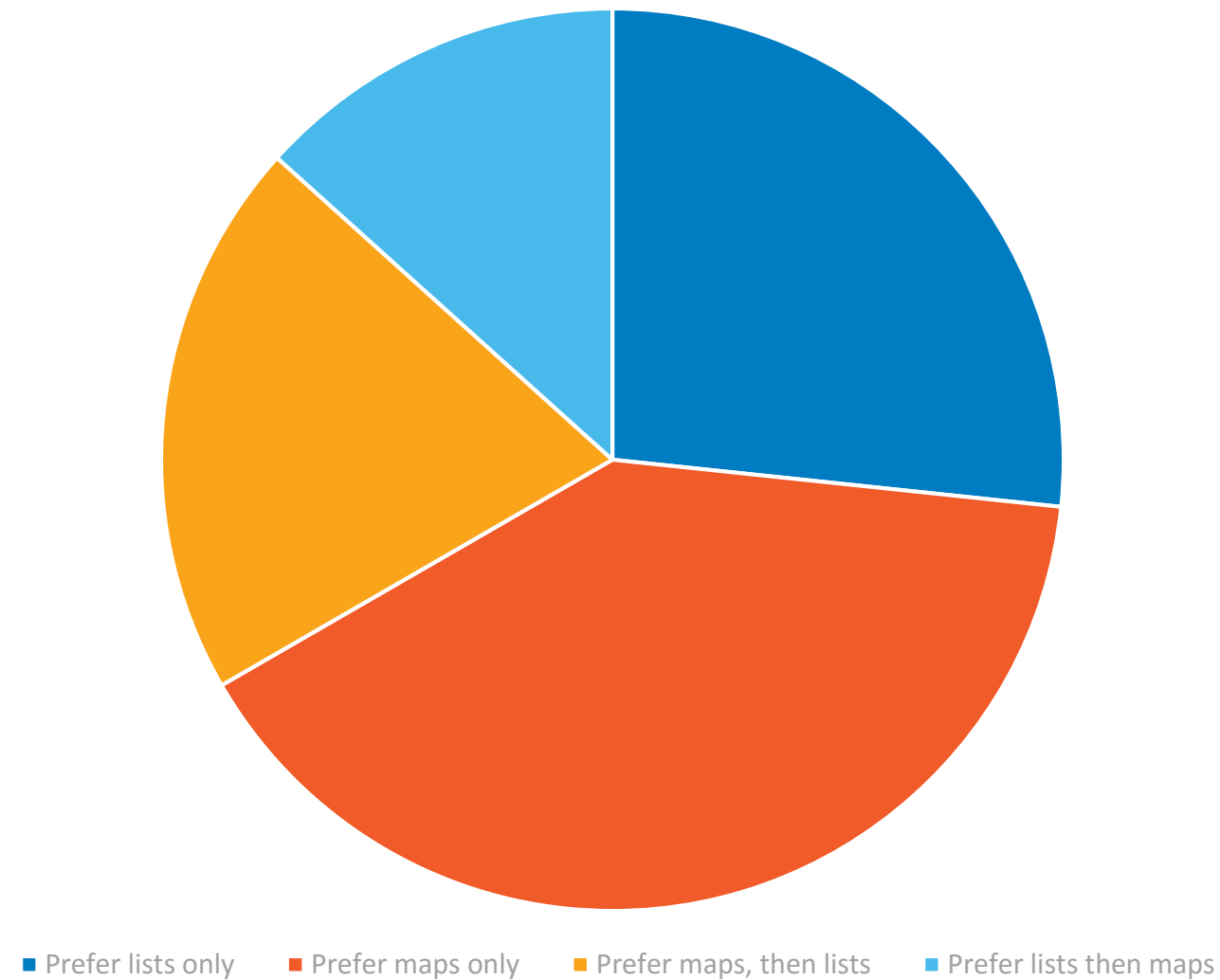
Based on 51 responses from randomized individuals

'Teddybear' was a surprise inclusion, but given the context we decided it was a favorable association

# Survey results for A/B testing on facility search feature

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Geographic data: preferences for interaction model



Almost 45% used maps only, to find a nearby restaurant  
Almost 30% preferred not to use maps  
60% led their search with maps

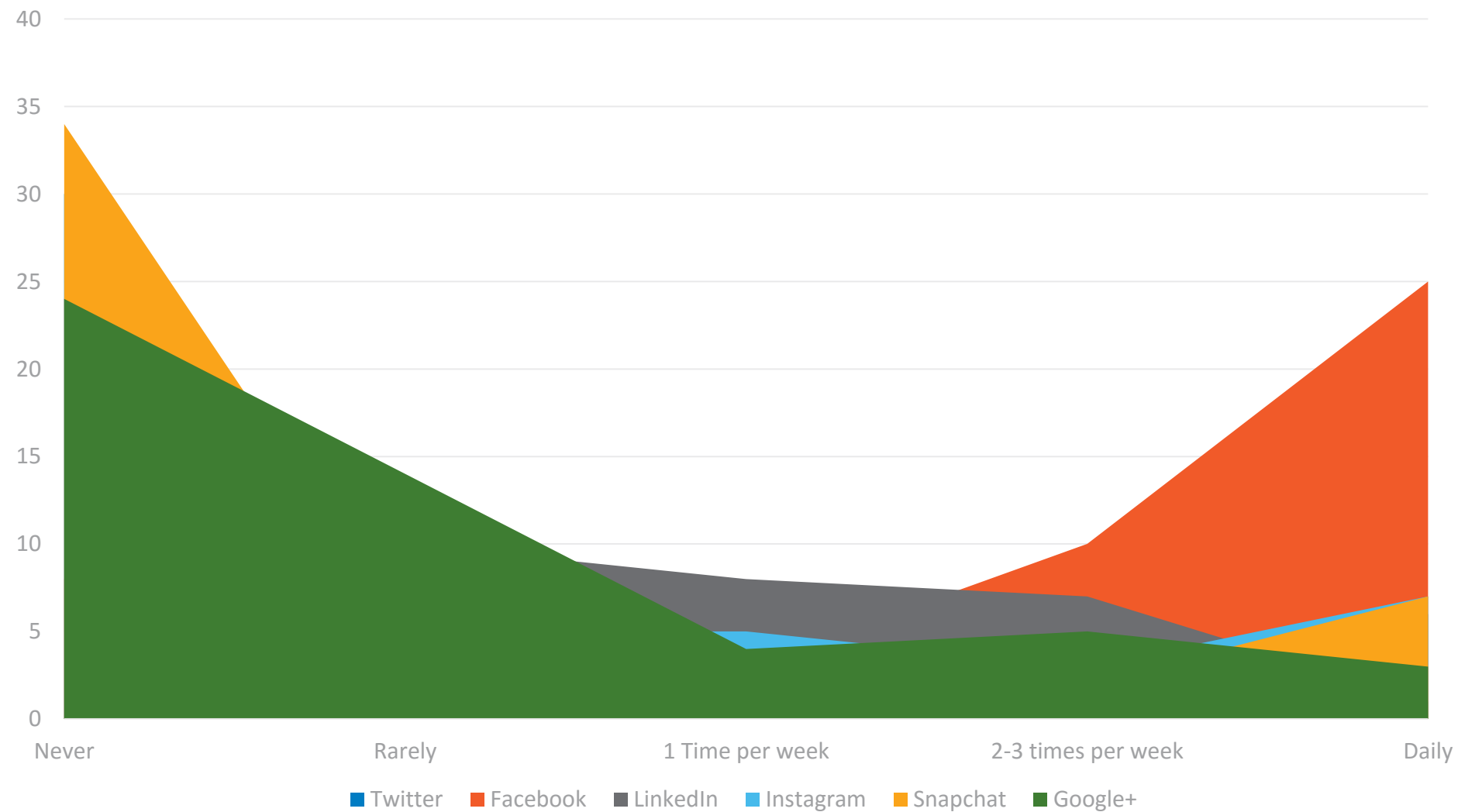
Based on 51 responses from randomized individuals, based on their use of Google maps to find a nearby restaurant  
We wanted to base our foster facility search feature on how most people interact with geographic data



# Survey results for social media usage

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Social media usage 2016



Facebook is clearly the most used social media tool  
Almost 50% of respondents use it every day  
Over 75% of respondents use it at least weekly

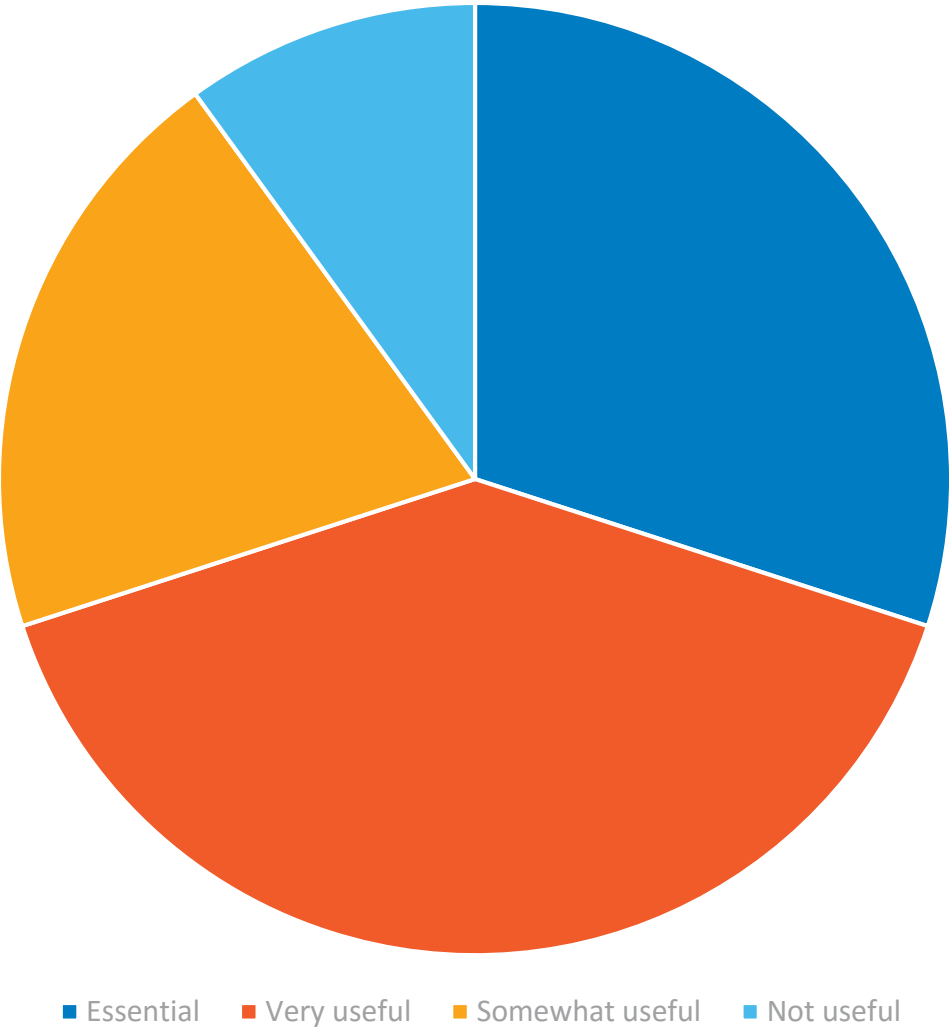
Based on 51 responses from randomized individuals

We wanted to base our caseworker communication feature on the most likely used social media tools

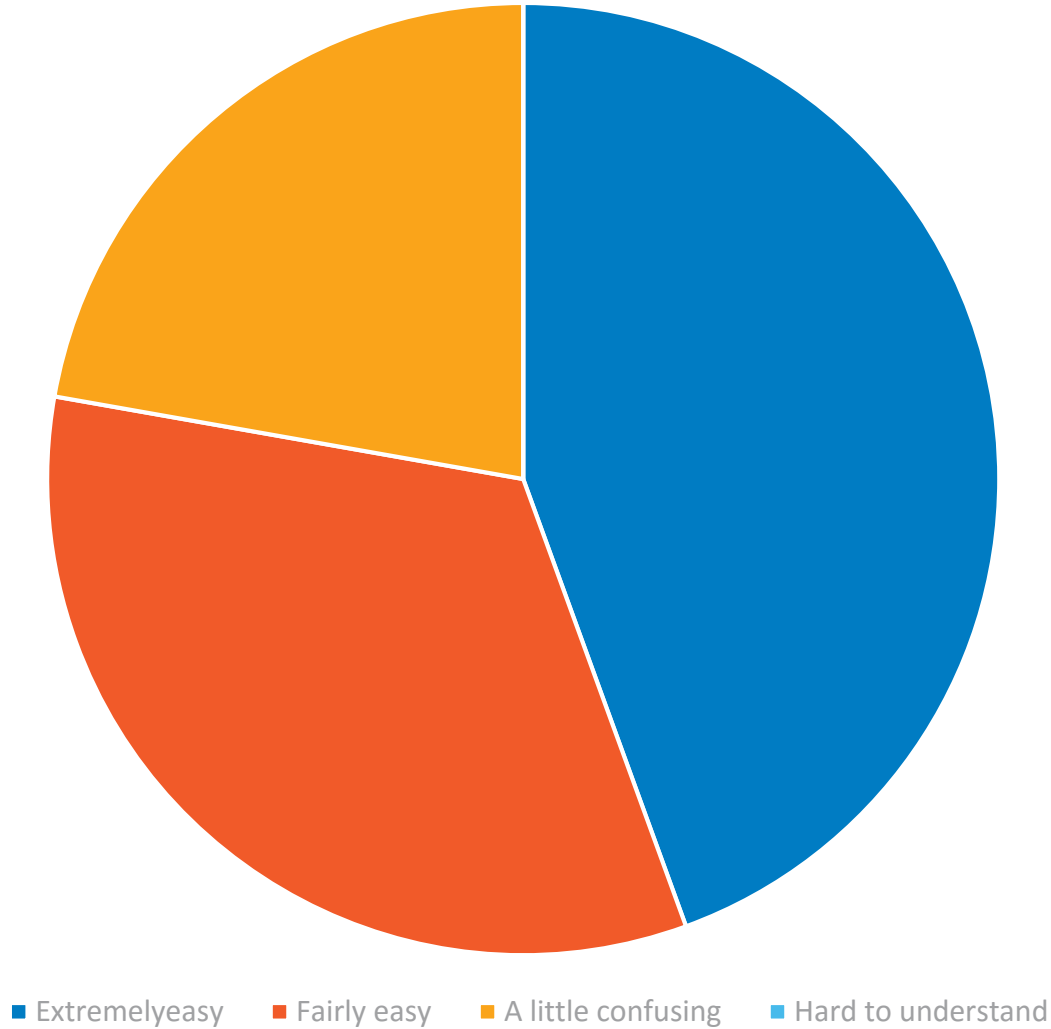
# Appendix C – Prototype User Test Survey

# Survey results for functionality and ease of use

How useful do you think *reachout* is for a parent?



How easy to use is *reachout*?



Based on 9 responses from user representatives who are parents of young children *reachout* is easy to use and thought to be useful

# User reactions to *reachout*

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## Things they liked

- Using the map to locate foster facilities
- Including the schools on the map
- Immediacy of the chat feature, especially when the case worker was online
- Online offline indication for chat participants
- Use of photos to select chat participants
- Inspiring story on the home page
- The name *reachout*

## Things they wanted to add or change

- More info on each foster facility when clicked on – especially capacity and past performance
- Change the search radius default – especially in a rural area
- Ability to change the center of the search radius – perhaps they want to search around grandparents address
- Ability to upload photos in chat
- For caseworkers, a different way to juggle conversations with multiple parents
- Notification via text message when a new chat message appears
- Less scrolling on the desktop version

Overall, our user thought *reachout* a good and useful product

We have identified a number of backlog enhancements for future versions



Building  
**Tomorrow's** Enterprise

UNITED STATES

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