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Over the Waterfall in a Barrel - Adapting Agile Techniques to User Experience in a non-Agile World

AgileRemote.com ®

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About John F. (“Jeff”) Kelley

- IBM Master Inventor; Sr. Managing Consultant in Usability Engineering with IBM Interactive
- Adjunct Professor, Georgia Tech, Dept. of Engineering Psychology.
- Director, Board for Certification in Professional Ergonomics; HFES Executive Council Member

- B.A. Human Factors & M.A. Ergonomics, Univ. of California
- M.A. Experimental Psych & Ph.D. in Engineering Psych from Johns Hopkins (Advisor: Alphonse Chapanis)
- 1982-2000 Research Staff Member, IBM T.J. Watson Research
- 2000-2004 Sr. Consultant, IBM Usability Engineering (GBS)
- 2004-2006: Program Manager with SA Technologies' Warfighter Machine Interface Systems (Future Combat Systems)
- 2006-Current: Sr. Managing Consultant, User Research & Design National Practice (GBS/IBM Interactive)
- 5th Plateau inventor with IBM (gearless transmissions, ice trays, pen-sized displays, automotive telematics, search-and-rescue, solar power, user interface designs, etc)
- IBM Outstanding Technical Achievement Award (1996, team)
- IBM GBS Regional Technical Award for AgileRemote (2010, individual)
- Board-certified Human Factors Professional
- Fellow of Human Factors and Ergonomics Society (HFES) & Institute of Ergonomics / Human Factors (UK)
- Winner of the HFES Alexander C. Williams Jr. Design Award
- Former Editor of *Ergonomics In Design*
- HFES: 2008 President, 2012 member Executive Council

- Inventor of the "Wizard of Oz" experimental technique, in wide use today among Usability practitioners.
- Chair, IBM UX Community of Practice; Co-chair, IBM UX + Agile working group; Co-chair IBM UX/Web 2.0 Invention Development Team
- Member: IBM AoT Green IT Initiative, IBM Smarter Cities Strategy Study; IBM One UI Standards Cmte

Challenge & Response

Challenge:

Agile Software Development: an elegant opportunity to introduce iterative design (a Usability Engineer's bread and butter) into application development, but…

- "Agile methods largely ignore issues of designing the user interface."
  Mike Cohn, User Stories Applied for Agile Software Development, 2004
- "[Agile] developers might bypass usability because they assume there's no time to do testing or other user research"
  Jakob Nielsen , AlertBox, 2008

Response:

- ***Include foundational user research*** (e.g. a library of UI/Style guides, personas, work flows)
- Find a way to ***do UCD Work in parallel*** with Development (but looking 2 to 3 steps ahead)
- Adapt traditional UCD techniques to be fast (e.g., ***employ "discount usability" & table-driven prototyping***) … Hence: AgileRemote®

The Agile Manifesto [*]

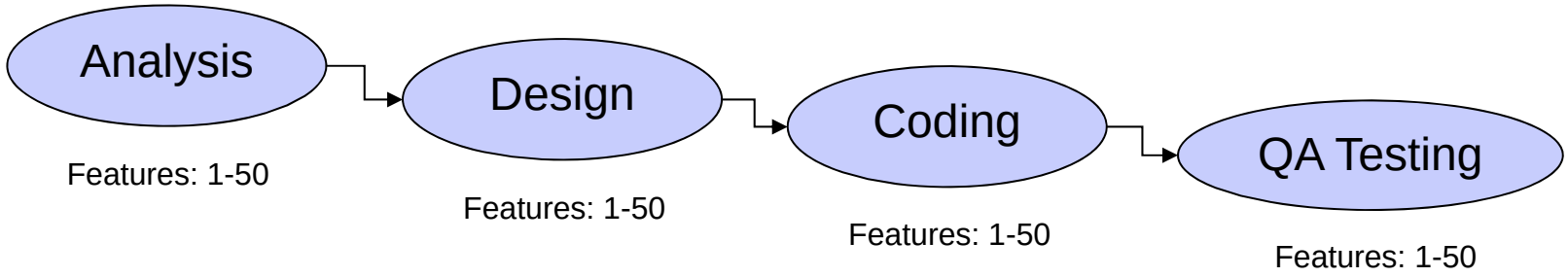
1. Our highest priority is to ***satisfy the customer through early and continuous delivery*** of valuable software.
2. ***Welcome changing requirements***, even late in development. Agile processes harness change for the customer's competitive advantage.
3. Deliver working software frequently, from a couple of weeks to a couple of months, with a preference to the shorter timescale.
4. Business people and developers must work together daily throughout the project.
5. Build projects around motivated individuals. Give them the environment and support they need, and trust them to get the job done.
6. The most efficient and effective method of conveying information to and within a development team is face-to-face conversation.
7. Working software is the primary measure of progress.
8. Agile processes promote sustainable development. The sponsors, developers, and users should be able to maintain a constant pace indefinitely.
9. Continuous attention to technical excellence and good design enhances agility.
10. Simplicity--the art of maximizing the amount of work not done--is essential.
11. The best architectures, requirements, and designs emerge from self-organizing teams.
12. At regular intervals, the team reflects on how to become more effective, then tunes and adjusts its behavior accordingly.

[*] man-i-fes-to: a written statement declaring publicly the intentions, motives or views of the issuer (i.e., a mission statement)

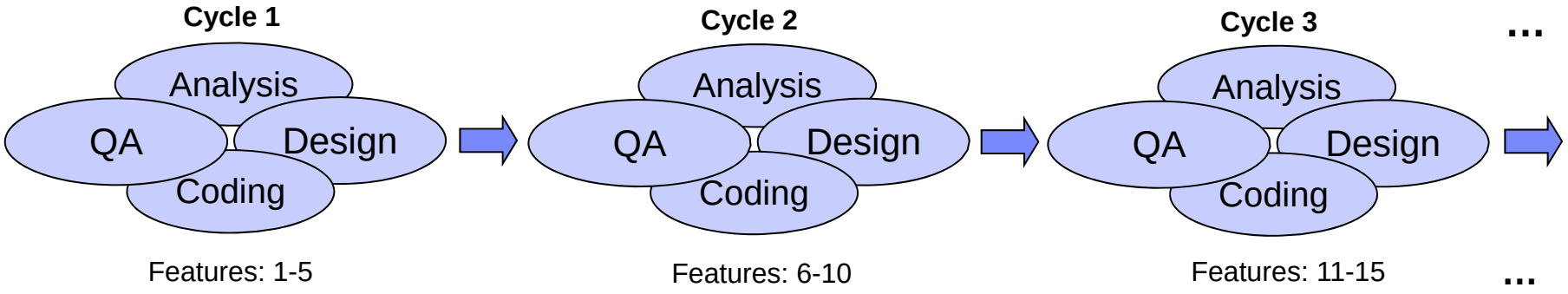
agilemanifesto.org

Traditional Waterfall Design vs. Iterative Design

Waterfall:

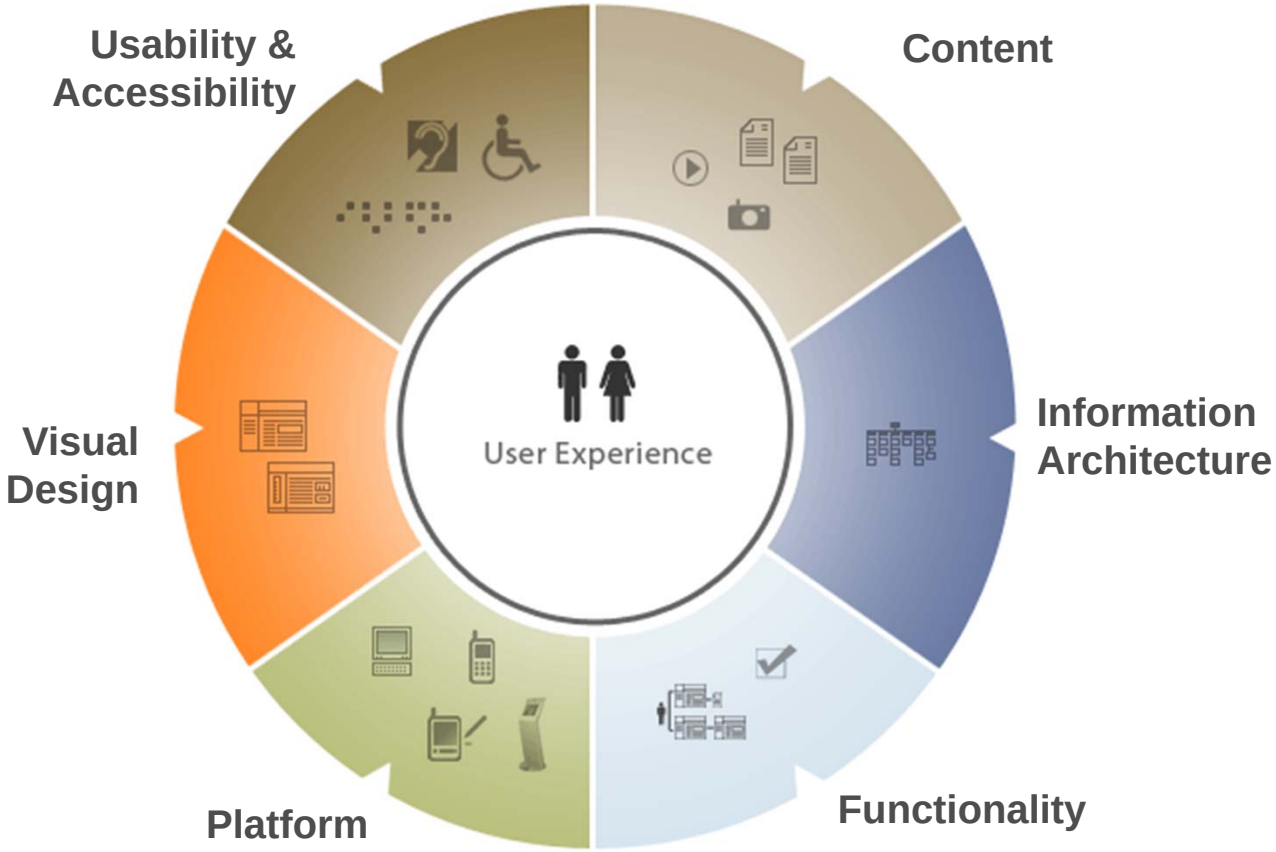


Iterative (e.g. Agile):



Adapted from Sy, 2007

Usability Engineering is not just “Look & Feel” – It has Six dimensions with “User Experience” as the focal point

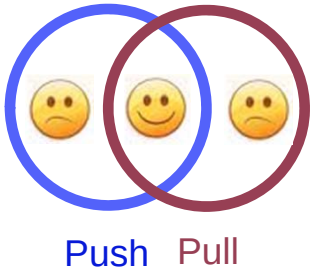


UX: Usability Engineering / User-Centered Design

- Early and continuous involvement of users in the definition of requirements and the design of applications
- The goal is to produce applications that are:
  - ***Useful* –** Meets business and user needs
  - ***Usable* –** Introduces as few obstacles as possible between a user and his/her goals
  - ***Engaging* –** The content and functionality (not bells & whistles) engage the user

How can UX contribute?

- Understand the business and its requirements ("push" – e.g., process maps)
- Understand the users and their requirements ("pull" – e.g., User Stories)
- Understand the push-pull gap
- Understand the context of use
- Understand the delivery capabilities
- Employ user-centered, iterative, prototype-driven design strategies



Agile + UCD … Strange Bedfellows?

"Misery acquaints a man with strange bedfellows."

William Shakespeare, *The Tempest*

Spoken by a man who has been shipwrecked and finds himself seeking shelter beside a sleeping monster.

Irritation: Some Classic Agilista* Responses to UCD
Determination: Yeah, but…

- "We'll give you two weeks up front to do your thing, write up some UI guidelines and then go home and leave us in peace to design and build the application."
- Guidelines and Best Practices will get you maybe 30% of the way there – they will never be sufficient out of the box. User-Centered Design is an *iterative* process that is crucial *throughout the development lifecycle*.
- "After all, we do constantly talk to stakeholders/customers, so we know what users want."
- Stakeholders are ***not*** end-users. What's worse: they think they ***are*** good proxies for end-users.
- "And, we have Acceptance Testing as a formal part of each of our iterations, so we'll know when we're on the right track."
- Acceptance testing is NOT usability testing. No end-users are involved -- you'll have ***no idea*** if you're on the right track from a usability perspective …

Ergo: Agile projects need UCD

* Hey, if we can call our mission statement a "Manifesto", I can call us "Agilistas"!

AgileRemote® Method

AgileRemote: ***full-lifecycle, table-driven tools*** for rapid, collaborative visioning, requirements gathering, rapid prototyping, and development (co-located OR remote)

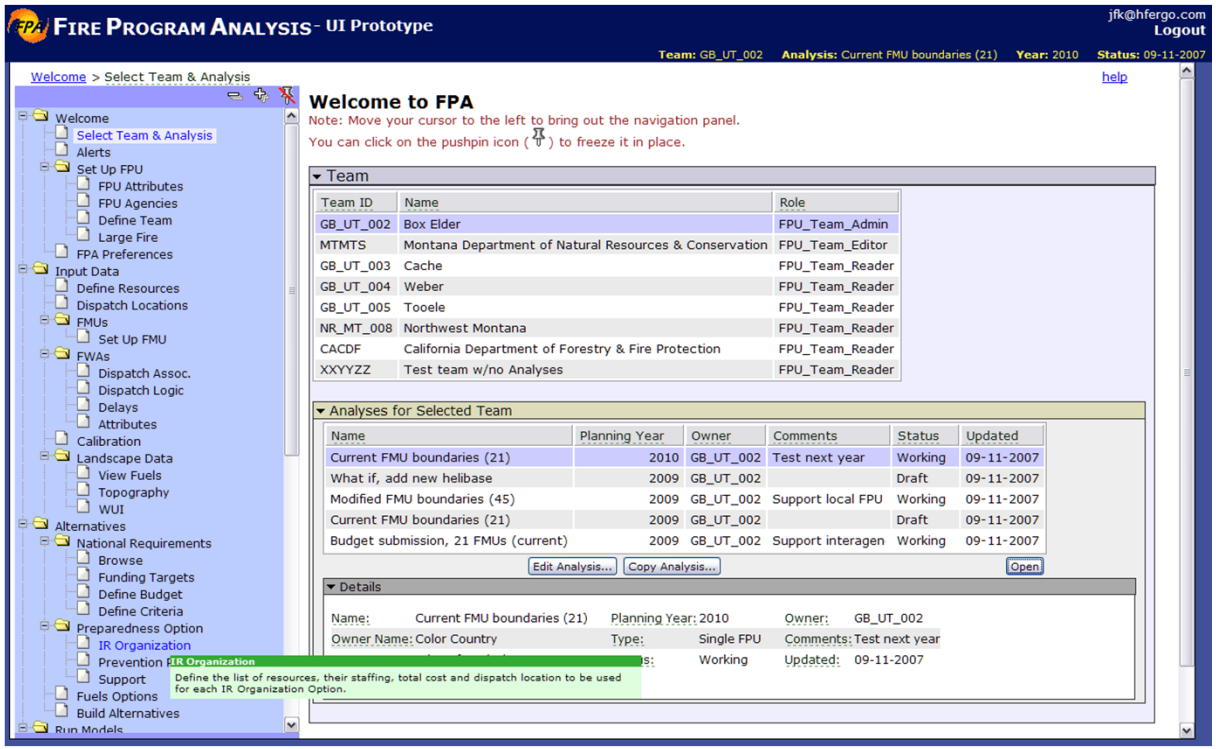
Key steps:

1. ***Initial Requirements Collaboration*** - quick online survey among stakeholders/SMEs; gather & rank initial User Stories; refine throughout design and development.
2. ***Conceptual Model*** (vision) - based on the User Stories and built using a table-driven, rapid, ultra-high-fidelity prototyping techniques
3. ***Iterative Design with High Fidelity Prototyping*** - user-centered, task-based, prototype-driven design with user input. Can be concurrent with development.
4. ***Remote Usability Testing*** - built into the prototype.
5. ***Demo & Training Support*** - including auto playback -- built into the prototype.
6. ***Support Development*** - export directly to dev platform (xml, CSS, SQL, etc.)

Proposition: UCD always involves SOME prototyping…

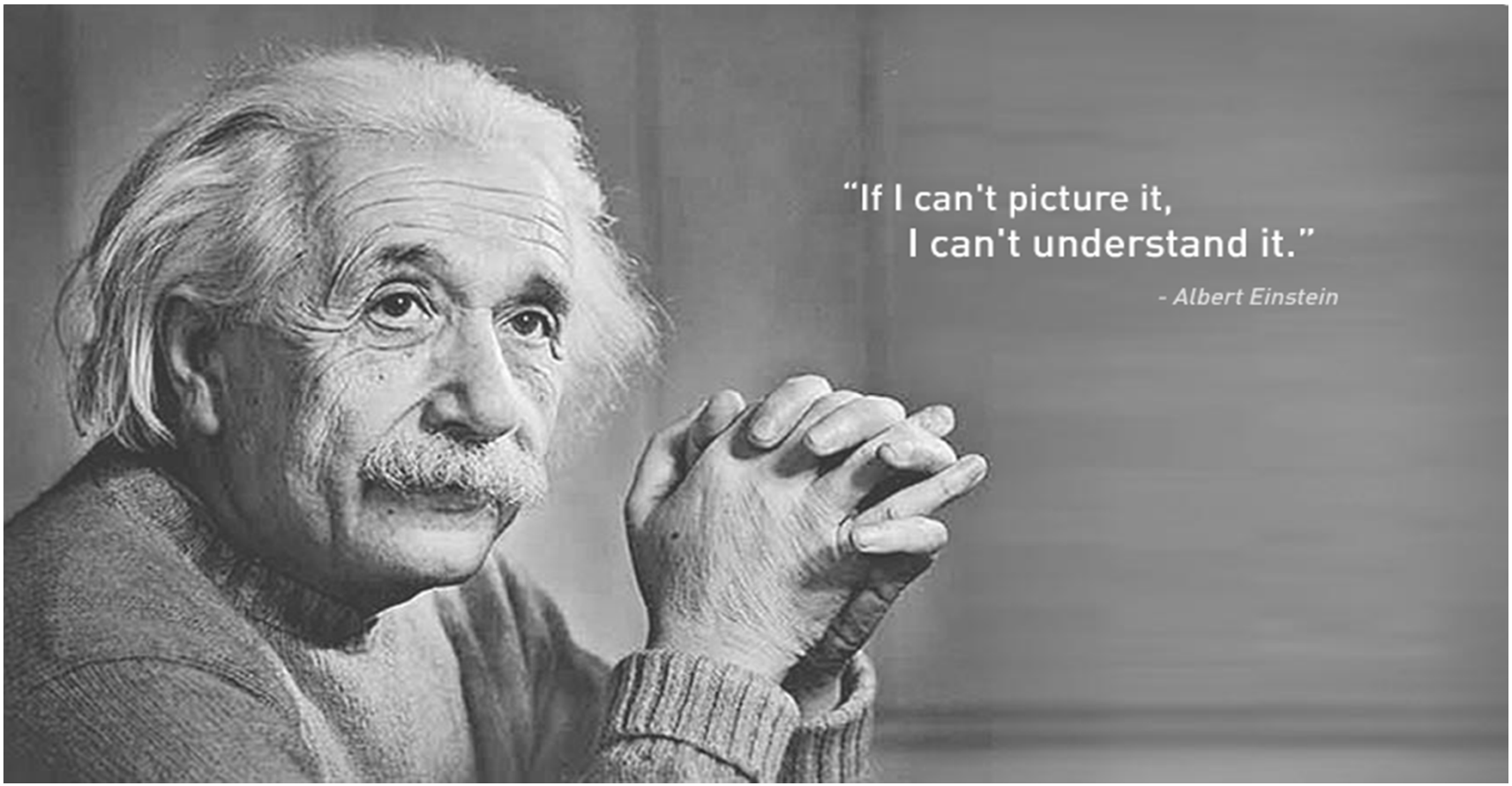
- Could be as simple as a sketch on a napkin…

- Or as complex as an ultra-high-fidelity prototype…



Pretentious Alert: Einstein Quote coming on next slide …

Advocating prototypes…



"Prototyping maybe, but *High-Fidelity* Prototyping?!?"

- Hi-Fidelity Prototypes used in a UCD process ***supply what is missing*** from traditional approaches:
  - iterative design and evaluation of ***holistic, overall UX design***
  - initial selection and ***ongoing validation/refinement of the conceptual/navigation metaphor***.
- "Prototype" -- ***model large-task suites early*** - well before the entire application is coded.
- "Hi-Fidelity" -- ***actual users performing actual tasks*** in an environment that closely models the target environment yields more concise and valid data
- Task-based, iterative usability evaluations – ***Task-based testing focuses the users on the semantics*** of the application and the real usability issues in the emergent designs rather than focusing on politics, opinions, and ego. [*]
- Prototypes with articulated proposed data models (as opposed to UML for example) can ***help stakeholders visualize the data*** and give meaningful input.

[*] The author has no fundamental objection to politics, opinions, and ego – in their proper place they can be an engine for innovation. In usability tests, however, they can obfuscate the results.

"But, aren't prototypes throw-away code? I.e., A waste of time?"

- Not necessarily. High-Fidelity, iterative, UCD prototyping can be useful in rapid development projects to the extent that it ***contributes usable designs*** to developers and ***does not negatively impact cycle times***.
- Even "throw-away" High-Fidelity prototypes can accelerate development where ***the artifacts are reusable*** in the actual application. Reusable artifacts can take the form of (in ascending order of utility to developers):
  1. ***Static Screen shots*** + full documentation of style & behaviors [traditional]
  2. ***Clickable prototype screens*** modeling key behaviors + light-weight descriptions of style and any un-coded (or non-obvious) behaviors
  3. #2 plus ***re-usable CSS***
  4. #3 plus ***selected API definitions*** from prototype JS code to build standard widgets (e.g., intelligent tables), for developer use in configuring production library
  5. #4 plus ***re-usable JS snippets*** for RIA (Rich Internet Application) behaviors
  6. #5 plus ***re-usable driving tables*** and/or XML that define layout, style, components, tables, and behaviors
  7. #6 plus ***actual development code***/modules (e.g., JSP, JSF, Java) where the prototype is developed and iterated on the same platform as development

Q: "But, how do you do all that and not impact cycle time?"
A1: Table-driven, rapid prototyping

To be "agile", Hi-Fi prototypes should be ***table-driven*** and ***easy/fast to modify***.

I have used tables (mostly spreadsheets jointly authored with stakeholders) to:

- ***Define and rank User Stories*** to schedule and drive design and development.
- ***Review fields/tables with stakeholders***, including Displayed Names, DB Names, Formats, Behaviors, Grouping, Sorting, Categorization (i.e., elaborating Requirements).
- ***Define Sample Data*** – offload to stakeholders
- ***Define navigation*** hierarchy using client-side, runtime js.
- ***Define role-based access*** (who can read and/or modify which pages).
- ***Define Task & DemoTracks*** to help users navigate through complex applications and help project managers get "buy-in".
- ***Automate generic page content*** before actual pages are defined. This enables ***up-front modeling of an entire application***, allowing viewing of sample tables, fields, and button clicking, before a single page is designed.
- ***Automate FAQs*** – derived directly from User Story spreadsheet
- ***Export Directly to Development*** – e.g., Navigation, CSS, Behaviors
- ***Serverless Simulation*** – can simulate complex back-end transactions

More…

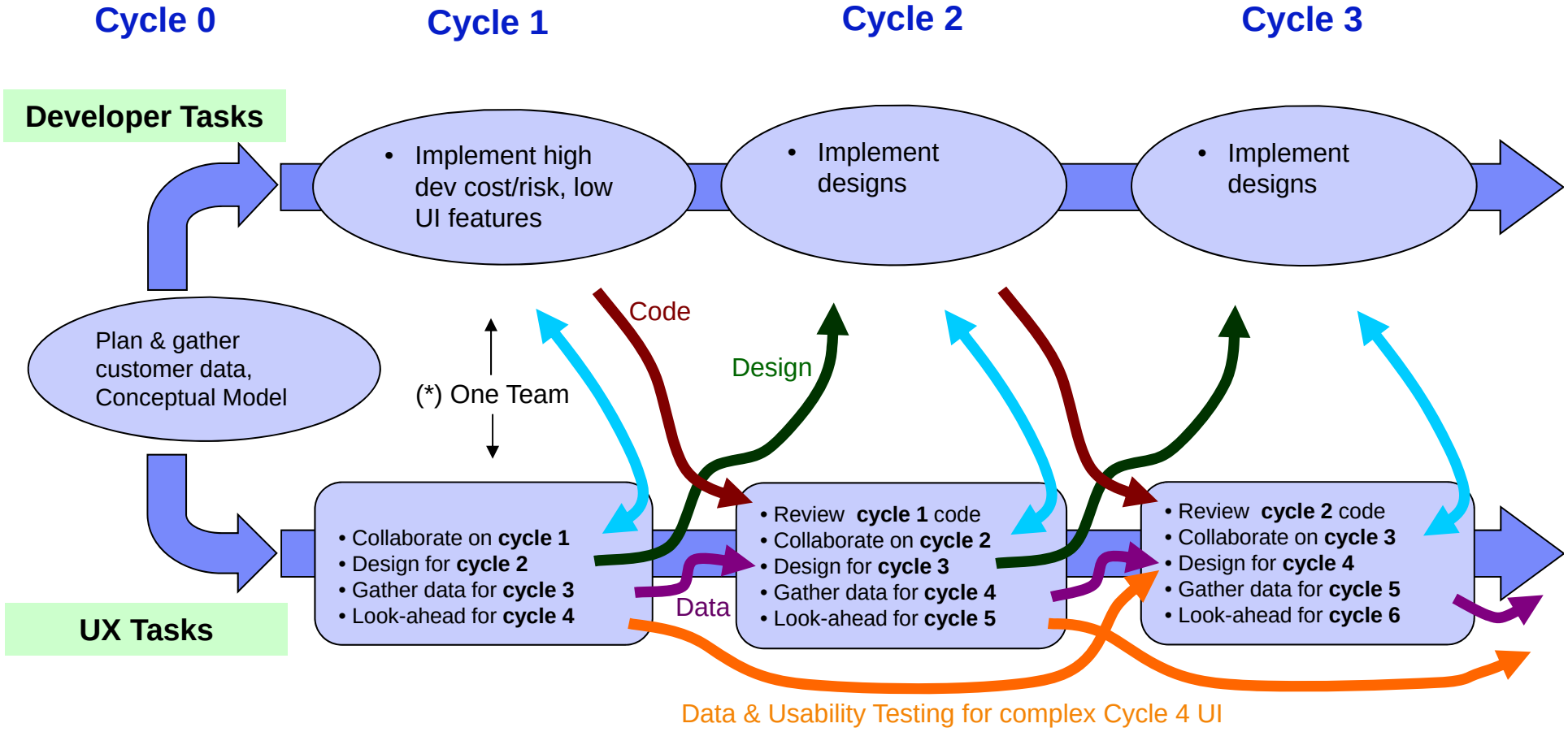
Table-driven, rapid prototyping (2)

- ***Define remote usability testing***, including: task setup, instructions, cheat sheets (for when remote user is stuck or lost), survey questions, quiz questions, correct task completion criteria, and task sequencing.
- ***Define navigation tooltips*** for all pages:
  1. *Nav tooltips should provide a narrative -- in language easily understood by any member of the target design population -- what a user can do on every page and why (from the User Story). If no such description can be created by the business team, then you have to question why the page has been proposed.*
- ***Collaborate*** – Requirements & Design spreadsheets can be hosted on Google Spreadsheets or MS Sharepoint to keep stakeholders engaged

- When the prototype architecture supports it, it is a very dramatic moment the first time you are in a requirements meeting with stakeholders, revamping a requirements spreadsheet and you say “let’s see how this will look” and push a few buttons and, viola!, show them the results in a fully-rendered prototype.

Q: "But, how do you do all that and not impact cycle time?"

A2: Work in parallel (*), look ahead 2 to 3 cycles and back 1 cycle



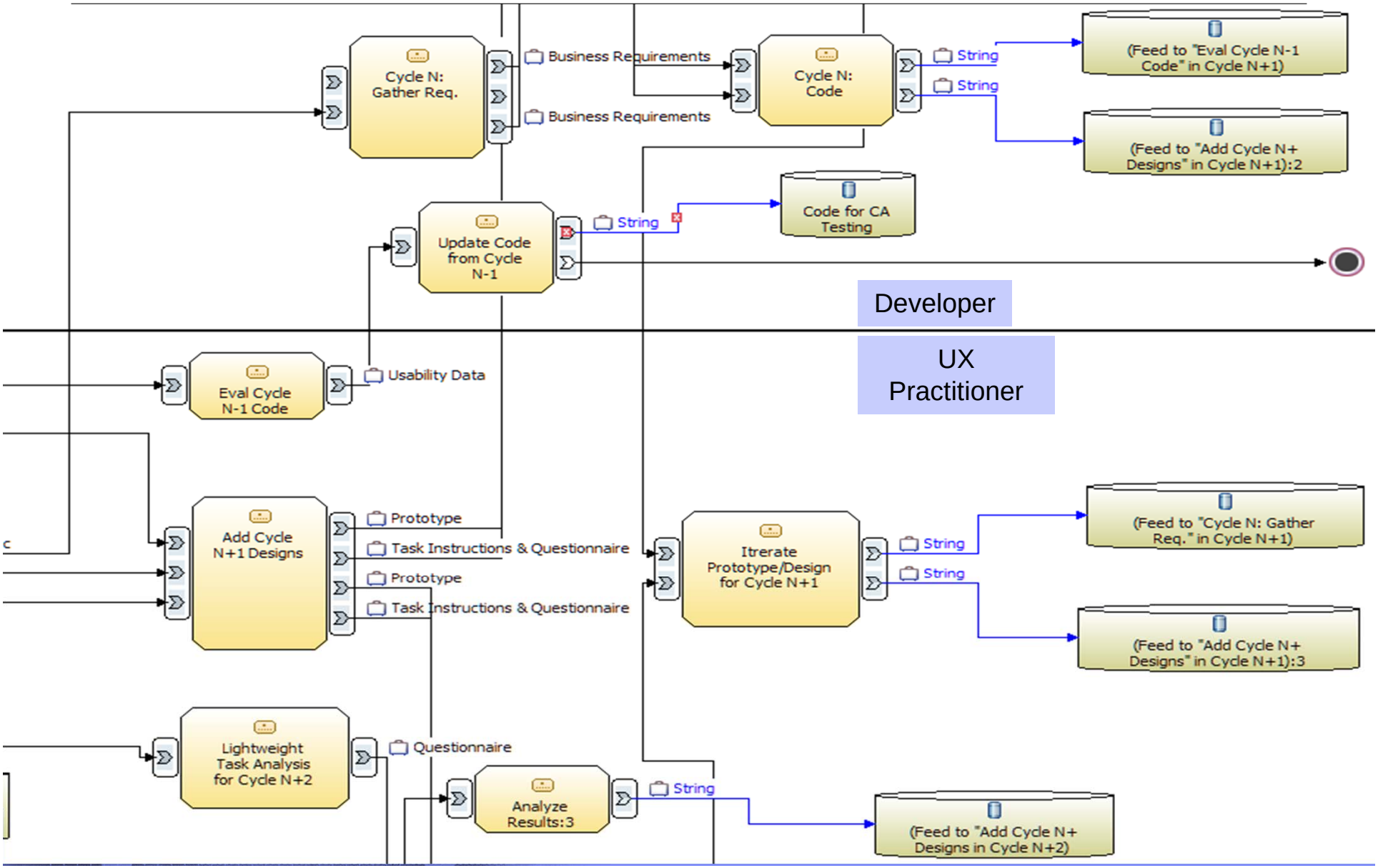
Note: This is an ambitious workflow for UX, not for the faint of heart. A more traditional practice is to fold iterative UI design into an expanded Cycle 0.

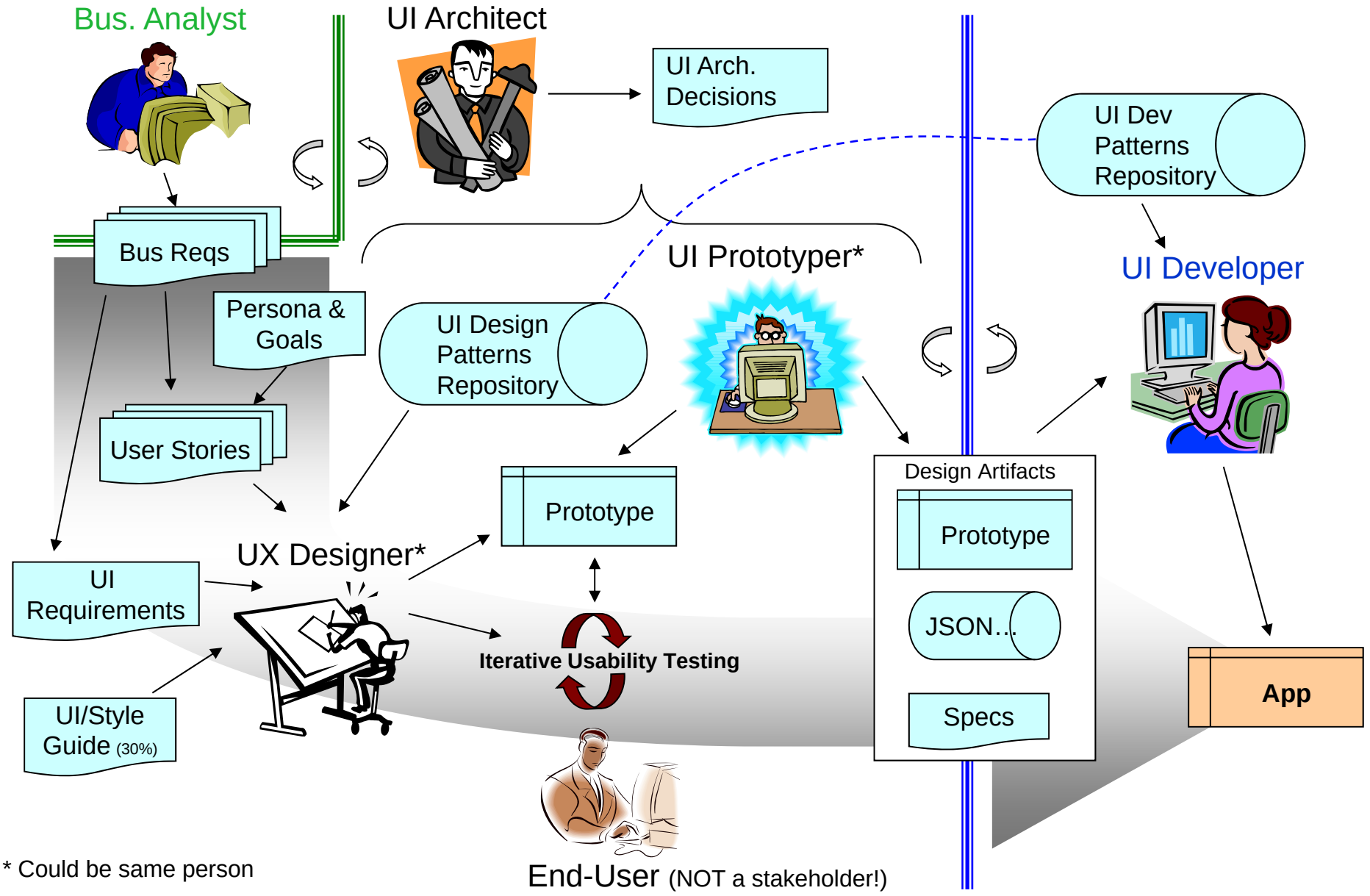
Adapted from Sy, 2007

Cycle N - Looking back and looking ahead: Detail

1. Cycle N-1: Lightweight heuristic reviews (or testing) of completed code, with possible changes to review/approve as additional work for Cycle N++
2. Cycle N: Occasional collaboration with developers on any obvious UI design/implementation trade-offs
3. Cycle N+1: Finalize designs and handoff prototype as design artifact (plus any additional UI User Stories or other lightweight documentation)
4. Cycle N+2: Elicit UI requirements (list of data elements, sample data, and behaviors). Begin pilot design work, iterating UI Prototype with: (a) Developers, (b) Customer UI Team and/or Customer Business Process Team, (c) Customer Stakeholders, (d) End-users (remote usability test, usually when several screens are ready to support part-task testing, also may include a whole-task holistic testing component)
5. Cycle N+3: (Optional) Elicit UI requirements for any high UI complexity stories that will require deep-dive (highly interactive) prototyping and task-based remote usability testing
6. All Cycles: Maintain (and occasionally test) whole-task, Holistic Prototype, folding in Cycle N-1 code (or mockup screens)

Cycle N Workflow Model (zoom detail)

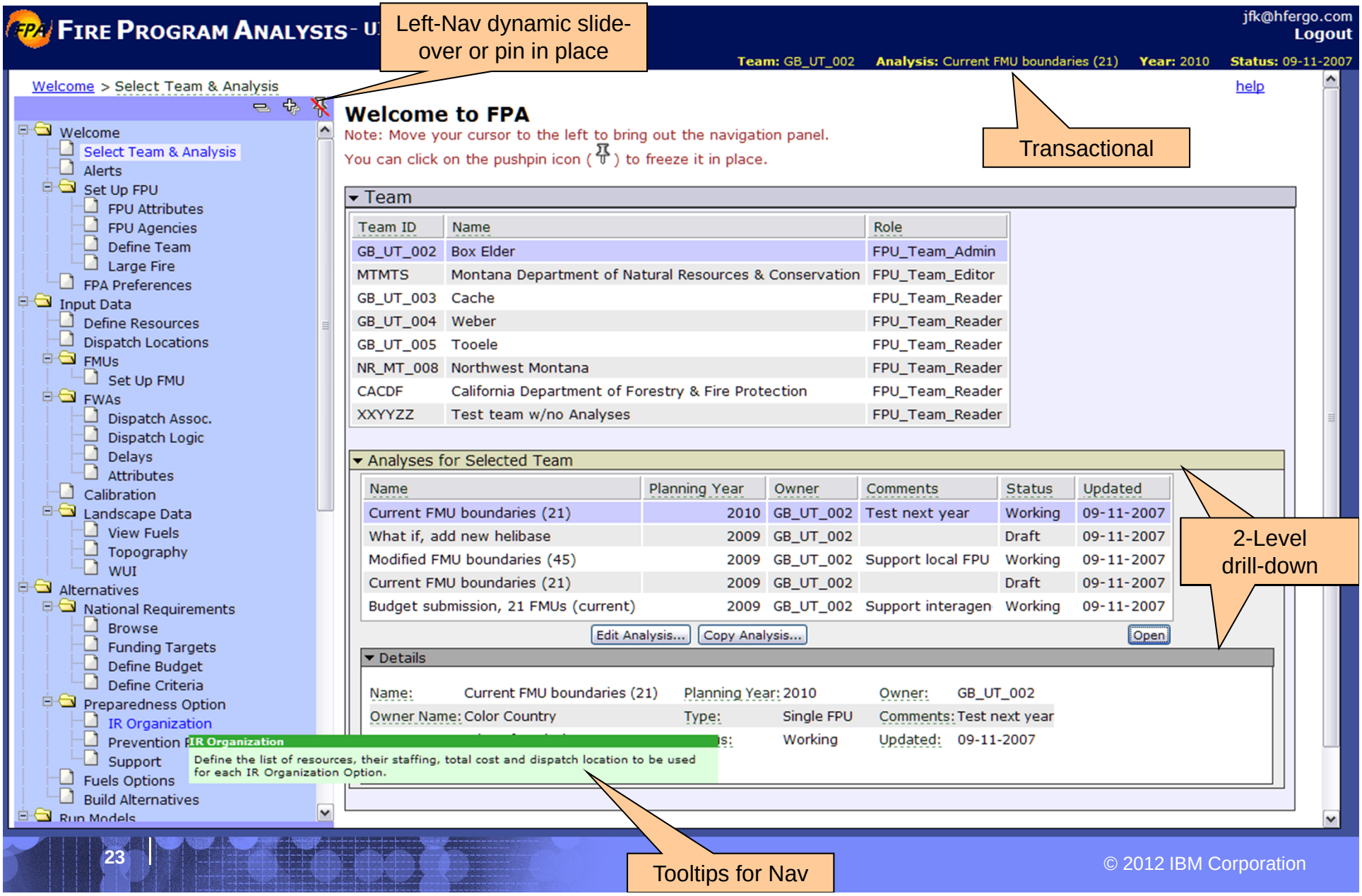




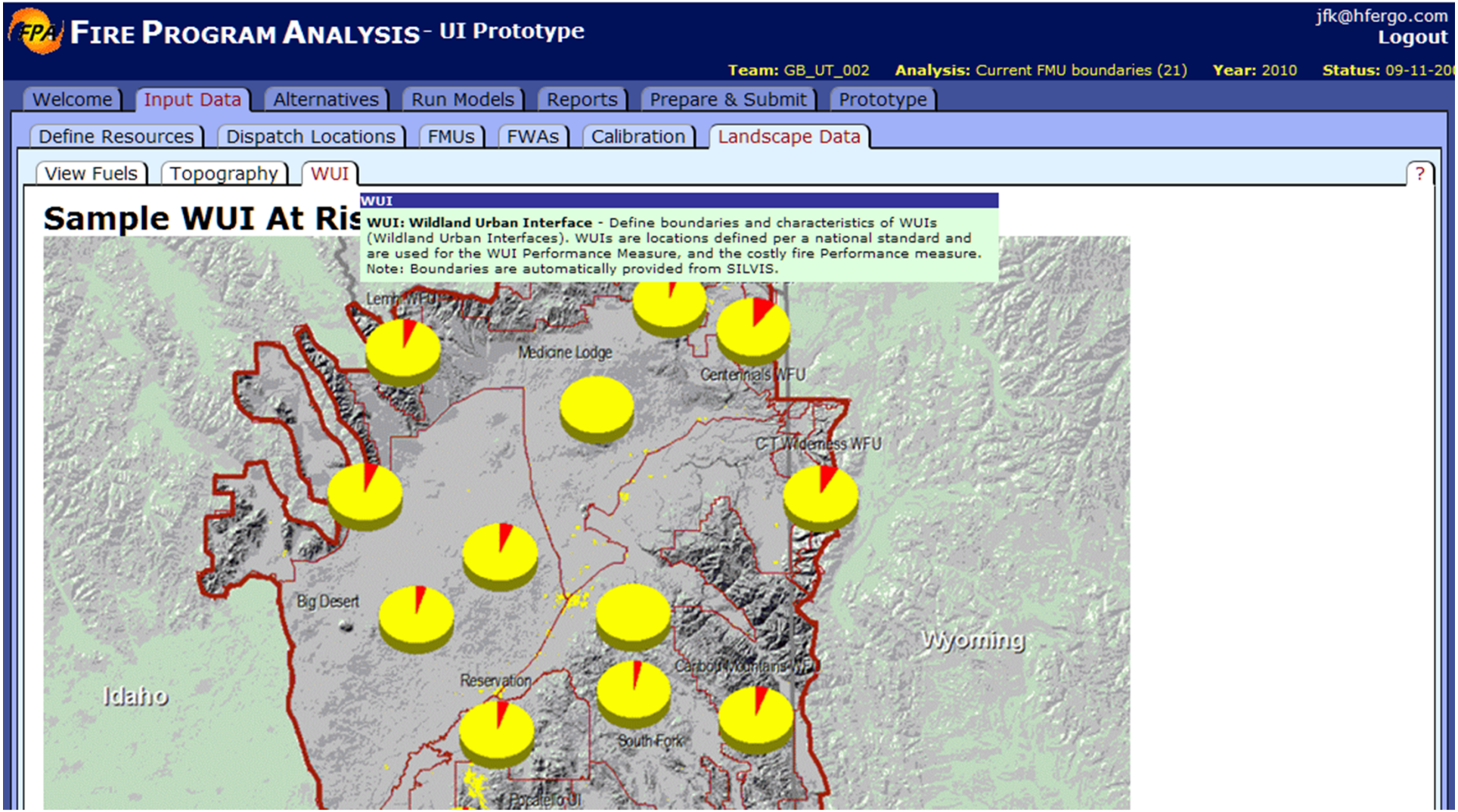
* Could be same person

Examples

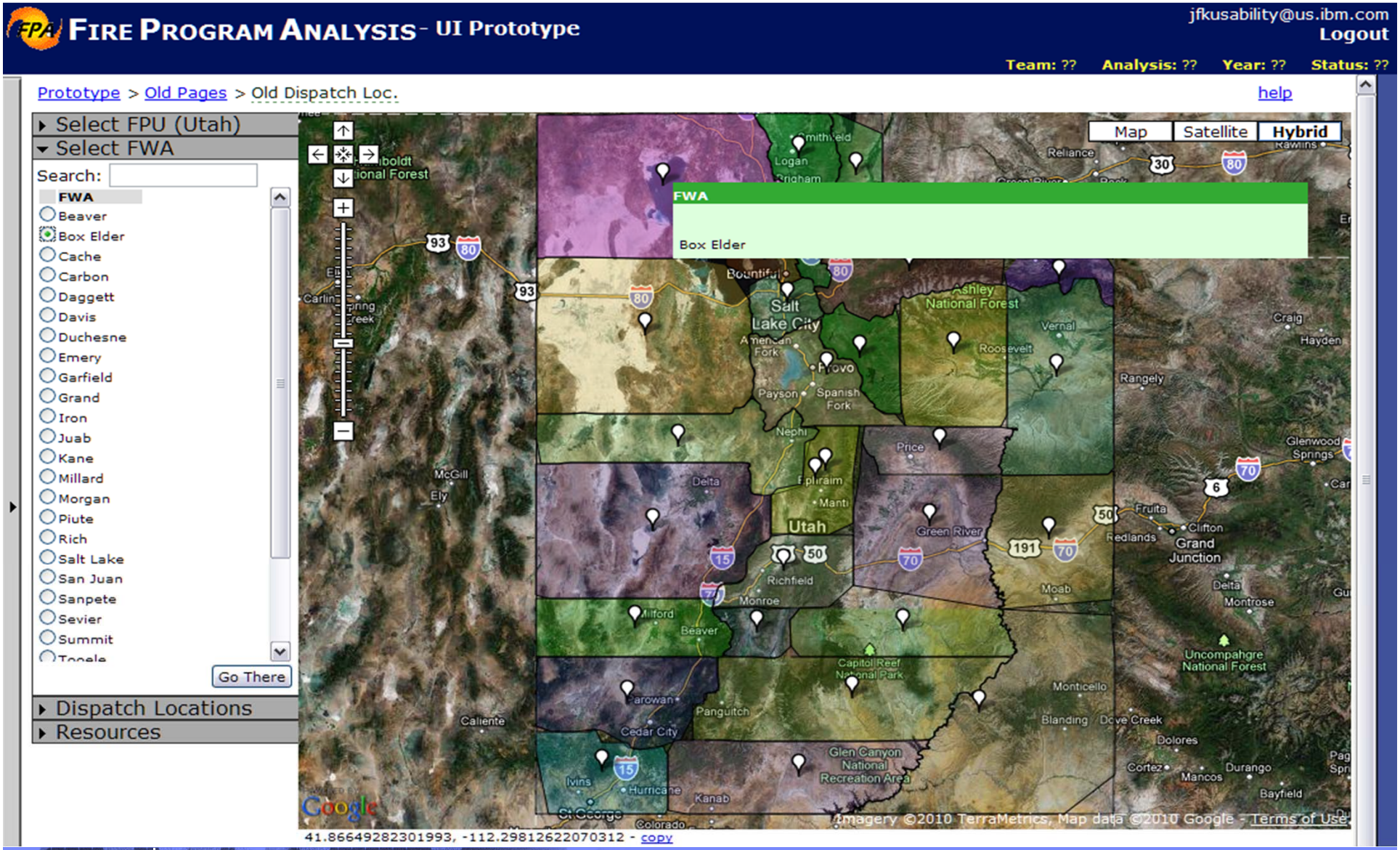
Fire Program Analysis – Modeling a complex process



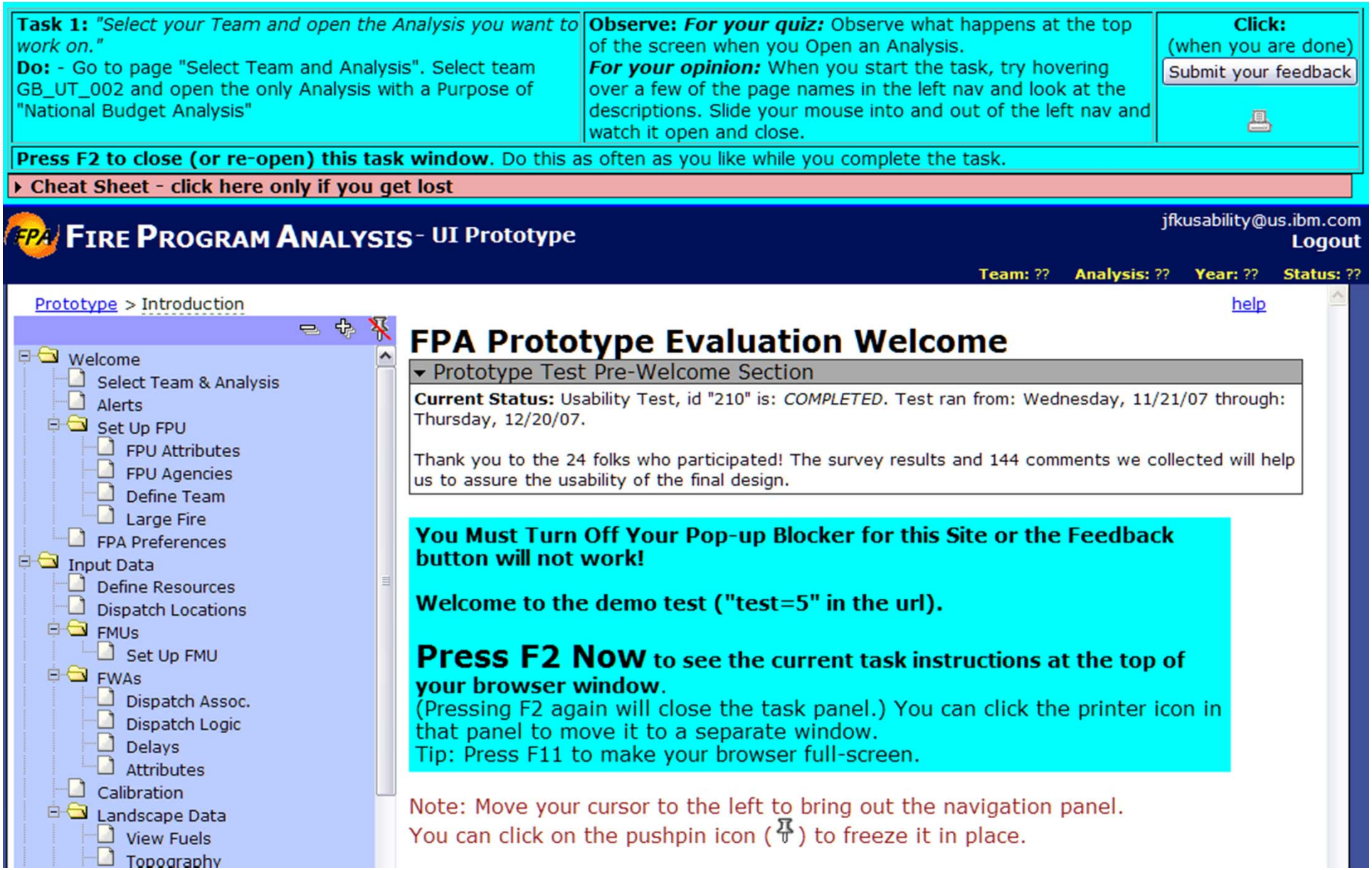
Fire Program Analysis – Alternate Nav (tabs)



Fire Program Analysis – Table-driven Google Maps mashup



Fire Program Analysis – Remote Usability Testing



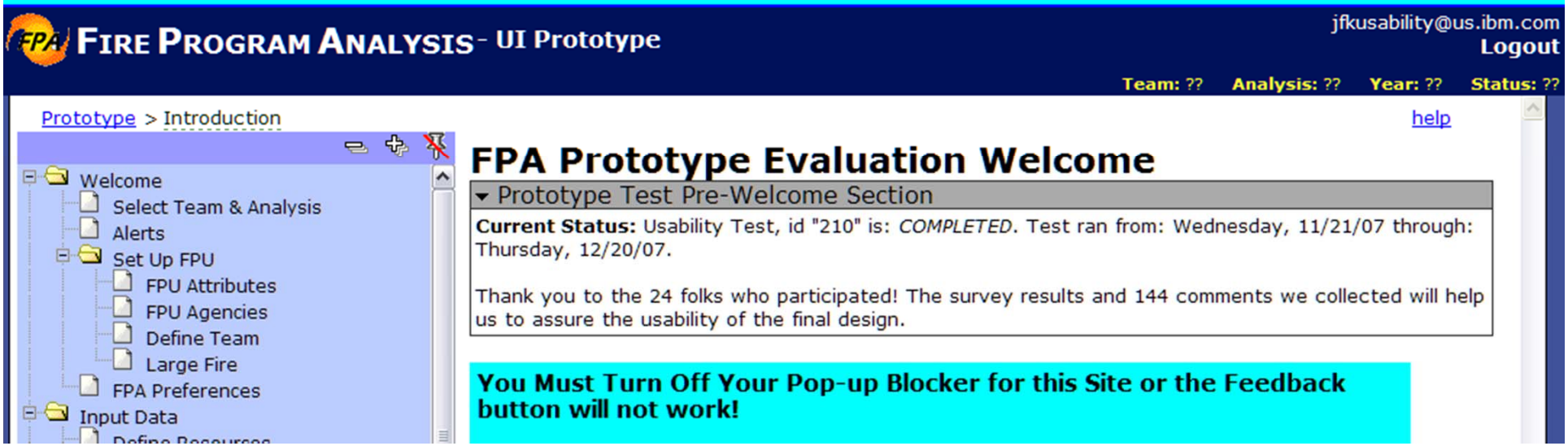
Fire Program Analysis – Remote Usability Testing, Cheat

Task 1: *"Select your Team and open the Analysis you want to work on."* **Do:** - Go to page "Select Team and Analysis". Select team GB_UT_002 and open the only Analysis with a Purpose of "National Budget Analysis"	**Observe:** ***For your quiz:*** Observe what happens at the top of the screen when you Open an Analysis. ***For your opinion:*** When you start the task, try hovering over a few of the page names in the left nav and look at the descriptions. Slide your mouse into and out of the left nav and watch it open and close.	**Click:** (when you are done) Submit your feedback

Press F2 to close (or re-open) this task window. Do this as often as you like while you complete the task.

Cheat Sheet - click here only if you get lost

1. Move cursor to left and navigate to page Welcome -> Select Team & Analysis.
2. Click on the row for Team GB_UT_002.
3. Notice that the table of Analyses for that team will receive some rows of data.
4. Click on the rows in the Analyses table and watch the Details panel below it until you see Purpose "National Budget Analysis".
5. Click the Open button and watch the top of the screen as you do.
6. Press F2 (if necessary) and click "Submit your feedback" button at the top right.



Fire Program Analysis – Remote Usability Test – Task Quiz

Feedback on Task 1: Select your Team and open the Analysis you want to work on.

Go to page "Select Team and Analysis". Select team GB_UT_002 and open the only Analysis with a Purpose of "National Budget Analysis"

(Remember: Your responses will be treated anonymously.)

First, a little quiz...

1. * What happened when you clicked on the Open button?
- ○ A: Nothing
- ○ B: The yellow context status bar updated to show selected Team, Analysis, etc.
- ○ C: The yellow context status bar blinked to draw my attention to it.
- ◉ D: Both B and C
- ○ E: I did not notice

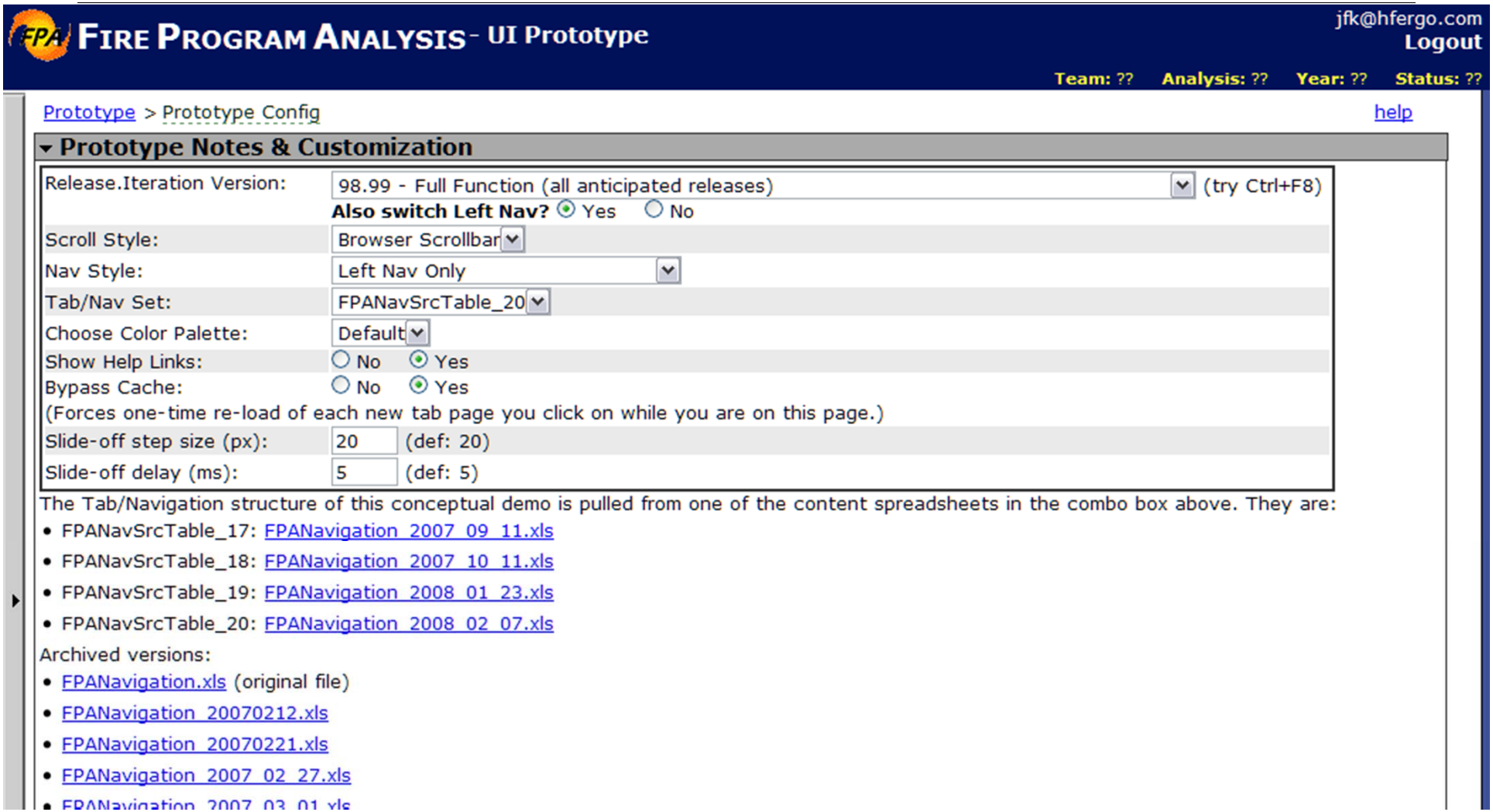
Finally, Your feedback on this task...

Statement	Agree a lot			Neither agree nor disagree			Totally Disagree
2. * It was easy to perform the task.	◉	○	○	○	○	○	○
3. * I was quickly able to find the page I wanted.	◉	○	○	○	○	○	○
4. * It was easy to find the information and buttons I wanted on the page.	○	◉	○	○	○	○	○
5. * The mouseovers and other prompts behaved in an intuitive way and gave me useful information.	◉	○	○	○	○	○	○
6. * I had a pretty good general idea of how this task fits into what I know about what FPA is supposed to do.	○	◉	○	○	○	○	○

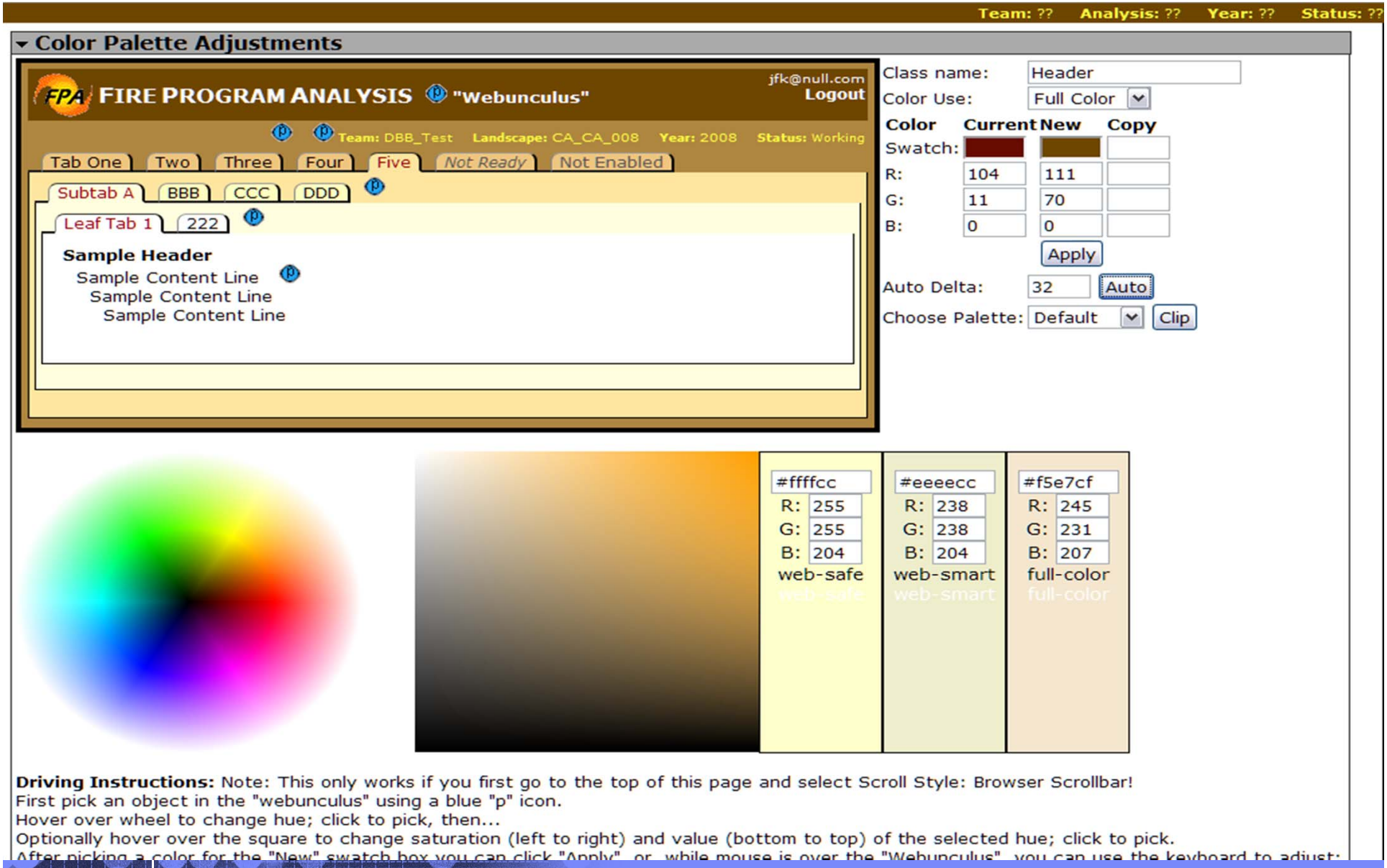
7. General Positive Comments regarding the User Interface for performing this task:

8. General Suggestions for Improvement regardingthe User Interface for performing this task:

Fire Program Analysis – Prototype Configuration



Fire Program Analysis – Interactive Prototype Styling ("Webunculus")



Fire Program Analysis Driving spreadsheet: Navigation, Role Access & Task Tracks

Best viewed with Excel 2003+

FPA Navigation flow

Mark Changes Color:

View All Cols | Comment | MouseOvers | Roles | Tracks

SortAll | AddRo | CopyAll | Squeeze | Expand

Level 1	Seq1	Level 2	Seq2	Level 3	Seq3	FPU Planner	..FPU Admin	..FPU Editor	FPU Reader	Regional Planner	Tech Reviewer	National Planner	..National Admin	..National Reader	Data Admin	Help Desk	Tech. Sys. Admin.	Level 2 Help Desk	newBudget	modBudget	transBudget	viewStatus	updSit	analRS	anaLFS	viewHist	prepGuidance	viewBudgets	doTradeoffs	prepAlloc	viewAssets	viewStaff
Welcome	0.0	Introduction	1.0			1	1	1	1	1	1	1	1	1	1	1	1	1	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Welcome	0.0	Alerts	2.0			1	1	1	1	1	1	1	1	1	1	1	1	1	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Welcome	0.0	FPA Preferences	3.0			1	1	1	1	1	1	1	1	1	1	1	1	1	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Welcome	0.0	Prototype Notes &	4.0			1	1	1	1	1	1	1	1	1	1	1	1	1	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Select	10.0	Planning Dataset	1.0			1	1	1	1	1	1	1	1	1	1	1	1	1	n	n	n	n	n	n	n	n	n	n	n	n	n	n
Select	10.0	FPU Team	2.0			1	1	1	1	1	1	1	1	1	1	1	1	1	n	n	n	n	n	n	n	n	n	n	n	n	n	n
Select	10.0	Select Preferences	3.0			1	1	1	1	1	1	1	1	1	1	1	1	1	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Situation	20.0	FPU	1.0			1	1	1	1	1	1	1	1	1	1	1	1	1	n	*	*		n	n	n	n	n	n	n	n	n	n
Select	20.0	FMUs	2.0			1	1	1	1	1	1	1	1	1	1	1	1	1	n	*	*		n	n	n	n	n	n	n	n	n	n
Situation	20.0	FWAs	3.0			1	1	1	1	1	1	1	1	1	1	1	1	1	n	*	*		n	n	n	n	n	n	n	n	n	n
Situation	20.0	Resources	4.0			1	1	1	1	1	1	1	1	1	1	1	1	1	n	*	*		n	n	n	n	n	n	n	n	n	n
Situation	20.0	Dispatch	5.0			1	1	1	1	1	1	1	1	1	1	1	1	1	n	*	*		n	n	n	n	n	n	n	n	n	n
Situation	20.0	Browse System Data	6.0	Fuels	1.0	1	1	1	1	1	1	1	1	1	1	1	1	1	n	*	*		n	n	n	n	n	n	n	n	n	n
Situation	20.0	Browse System Data	6.0	Topography	2.0	1	1	1	1	1	1	1	1	1	1	1	1	1	n	*	*		n	n	n	n	n	n	n	n	n	n
Situation	20.0	Browse System Data	6.0	Historic Fire Data	3.0	1	1	1	1	1	1	1	1	1	1	1	1	1	*	*	*		*	*	*	*	*	*	*	*	*	*
Situation	20.0	Browse System Data	6.0	Historic Weather	4.0	1	1	1	1	1	1	1	1	1	1	1	1	1	*	*	*		*	*	*	*	*	*	*	*	*	*
Situation	20.0	WUIs	9.0			1	1	1	1	1	1	1	1	1	1	1	1	1	n	*	*		n	n	n	n	n	n	n	n	n	n
Situation	20.0	HVRs	10.0			1	1	1	1	1	1	1	1	1	1	1	1	1	n	*	*		n	n	n	n	n	n	n	n	n	n
Situation	20.0	Desired Condition	11.0			1	1	1	1	1	1	1	1	1	1	1	1	1	n	n	n		n	n	n	n	n	n	n	n	n	n
Alternatives	30.0	Set up Alternatives	2.0			1	1	1	1	1	1	1	1	1	1	1	1	1	n	n	n		n	n	n	n	n	n	n	n	n	n
Alternatives	30.0	View Guidance from	3.0			1	1	1	1	1	1	1	1	1	1	1	1	1	n	n	n		n	n	n	n	n	n	n	n	n	n
Alternatives	30.0	Initial Response	4.0	Assign Resources	1.0	1	1	1	1	1	1	1	1	1	1	1	1	1	n	n	n		n	n	n	n	n	n	n	n	n	n
Alternatives	30.0	Initial Response	4.0	Dispatch Logic	2.0	1	1	1	1	1	1	1	1	1	1	1	1	1	n	n	n		n	n	n	n	n	n	n	n	n	n

Driving spreadsheet: Coherent Sample Content from Stakeholders

Page: Options -> IR Options -> IR Organization

Mark changes color: red

Sheet Updated: 8/30/2007 9:46:31 AM

Table as it appears on page:

Option	Target Cost	Fake Type	Res Cost	Delta	# Res	AirTanker	Fixed Wing	Helicopter	Engine	Wa
.Current	6,815,790	Actual	5,405,000	-21%	6	1	1	1	1	
Plus 25%	5,111,843	Actual	6,865,000	34%	6	1	1	1	1	
Minus 25%	8,519,738	Plan	4,555,000	-47%	6	1	1	1	1	
Plus 25% WUI	8,519,738	Plan	6,865,000	-19%	6	1	1	1	1	
Plus 25% Wildland	8,519,738	Proposed	6,865,000	-19%	6	1	1	1	1	

Mappings:

Fake Type (just an example) is a Select Combo Box. Values are in the "Select List: Fake Type" on this sheet.
Res Cost comes from tab ResAssign, column "Total Cost", based on matching the "Option" name.
Delta is a calculation: (column D / column C -1) on this sheet
 # Res is a calculation: (Sum of columns G though L) on this sheet
AirTanker - Handcrew are counts of each of those types from tab ResAssign

Buttons:

Add Row...	Pop a form to define a new Option. Editable: Option, Target Cost, Fake Type. Required: Option, Target Cost
Edit Row...	Pop a form to edit existing Option (see Add Row)
Run IRS Model...	(just an example) Navigates to page "Run Models -> Run IRS" (which will show a selectable version of the table on this page)

Table Header Mouseover Prompts

(Text in [brackets] are for d (Text in [brackets] are for developer use only and will not display. Blue headers combine to form the unique

Column	Mouseover
Option	Name of IR Option
Fake Type	This is a fake column to show how to spec a select list [Not part of the real IROptions design]
Target Cost	Total targeted Resource cost of this Option (from National Gudance)
Res Cost	Total actual cost of Resources for this IR Option
Delta	Delta of actual Resource Cost from Targetd Resource Cost
# Res	Total # of Resources shown for this Option

Driving Spreadsheet: Remote Usability Tasks & Tests

C#	Cat	T#	Type	ST#	SubType	Value	Fmt
1	Version	1	Version			1.1	
5	**Task**	**10**	**Title**			**Select your Team and open the Analysis you want to work on.**	
5	**Task**	**20**	**Desc**			**Go to page "Select Team and Analysis". Select team GB_UT_002 and open the only Analysis with a Purpose of "National Budget Analysis"**	
5	Task	30	Observe			For your quiz: Observe what happens at the top of the screen when you Open an Analysis. For your opinion: When you start the task, try hovering over a few of the page names in the left nav and look at the descriptions. Slide your mouse into and out of the left nav and watch it open and close.	
5	Task	40	Setup	1	Execute	changeRelease("99.99")	
5	Task	40	Setup	2	Cheat	close|Cheat Sheet - click here only if you get lost	
5	Task	50	Clicks	1	Click	Move cursor to left and navigate to page Welcome -> Select Team & Analysis.	
5	Task	50	Clicks	2	Click	Click on the row for Team GB_UT_002.	
5	Task	50	Clicks	3	Click	Notice that the table of Analyses for that team will receive some rows of data.	
5	Task	50	Clicks	5	Click	Click on the rows in the Analyses table and watch the Details panel below it until you see Purpose "National Budget Analysis".	
5	Task	50	Clicks	6	Click	Click the Open button and watch the top of the screen as you do.	
5	Task	50	Clicks	7	Click	Press F2 (if necessary) and click "Submit your feedback" button at the top right.	
5	Task	90	Next			loadTask("done")	
5	Survey	130	Success			trackFind('action','selectAnalysis','2009: Current FMU boundaries (21)')	
5	Survey	140	H2			First, a little quiz...	
5	Survey	150	Radio	1	Prompt	What happened when you clicked on the Open button?	req
5	Survey	150	Radio	2	Radio	A: Nothing	
5	Survey	150	Radio	3	Radio	B: The yellow context status bar updated to show selected Team, Analysis, etc.	
5	Survey	150	Radio	4	Radio	C: The yellow context status bar blinked to draw my attention to it.	
5	Survey	150	Radio	5	Radio	!D: Both B and C	
5	Survey	150	Radio	6	Radio	E: I did not notice	
5	Survey	200	H2			Finally, Your feedback on this task...	
5	Survey	240	Include			Template_1101	
5	Survey	250	Include			Template_1201	
1101	Template	10	Likert	0	Statement	It was easy to perform the task.	req
1101	Template	10	Likert	1	Statement	I was quickly able to find the page I wanted.	req
1101	Template	10	Likert	2	Statement	It was easy to find the information and buttons I wanted on the page.	req
1101	Template	10	Likert	3	Statement	The mouseovers and other prompts behaved in an intuitive way and gave me useful information.	req
1101	Template	10	Likert	4	Statement	I had a pretty good general idea of how this task fits into what I know about what FPA is supposed to do.	req

Patent Portal – Gathering Requirements (User Stories)

As a... *
Role - What "hat" are you wearing here? (e.g., PE or PA)

I want to... *
Goal - What do you want to do? (E.g., get a list of patents by a certain inventor, or sort a list of patents by filing date, or add a comment to a patent.)

In order to... *
Business requirement - Why do you want to do it? (e.g., See if there are other patents that might interest a target, or re-evaluate whether some about-to-be-dropped patents might need to be saved, or prevent future colleagues from missing some key piece of information I found.)

Comment
(Optional)

Patent Portal – Ranking Requirements after Brainstorming Survey

PEP: Patent Engineering Portal - Project Page

Welcome Jeff
log out

PEP Home
User Stories
Add Story
Rank Stories
See Stories
Contributors
Surveys
Process Resources
Prototype
IBM Tools
External Tools
Help
Contact Jeff
plog rlog

Rank PEP User Stories

This ranking survey is closed. Thank you for your participation.
All the User Stories entered (so far) should be listed. If you have entered rankings (or comments) before, your last one should be showing. Any Stories that you haven't yet ranked should be Yellow. Please rank all the User Stories on all 3 dimensions (1=Low, 5=High, for details, click:)

(Be aware that data you enter here is kept on a Google server, secured by an api key; this is not the same as keeping it behind the firewall. So: no proprietary or sensitive information, please!)

Num	As a...	I want to...	In order to...	Imp	Pain	Freq	Comment
9	PE	automatically Identify/Extract: Bkwd/Fwd References, Claims Analysis, IPC/Family Code Analysis, Licensing Status for Citing Companies, Proof Status, Etc	[...? What's the business requirement here?]	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	We all do this every time on every list, since it is so repetitive, do it automagically!
10	PE	automatically generate reports, including: Pivot Tables, Citing Companies, issue/expiration bar charts	rapidly Identify Business opportunities	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	We all do this stuff, have it automated
11	PE	do offline analysis of extracted patent data and update/synchronize to the online system later	be able to work when I'm not connected (e.g., on an airplane).	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	[Leverage = 1 (high Cost) assumes a full replication and offline mode. Some downloading (and, possibly, uploading, TBD) will be a part of PEP.]
12	PE	identify potential high value IBM patents as soon as they are issued	maximize the dollars that can be obtained from the asset	1 2 3	1 2 3	1 2 3	Although our current tools are not available in a single mash-up, they do work well. We need to take our tools to the next level by obtaining/creating information that is not

Submit

Add a New User Story

Contact Jeff | Help

Patent Portal – Prioritized user story backlog

PEP: Patent Engineering Portal - Project Page

Welcome Jeff
log out

PEP Home
User Stories
Add Story
Rank Stories
See Stories
Contributors
Surveys
Process
Resources
Prototype
IBM Tools
External Tools
Help
Contact Jeff
plog rlog

User Stories - with Rankings

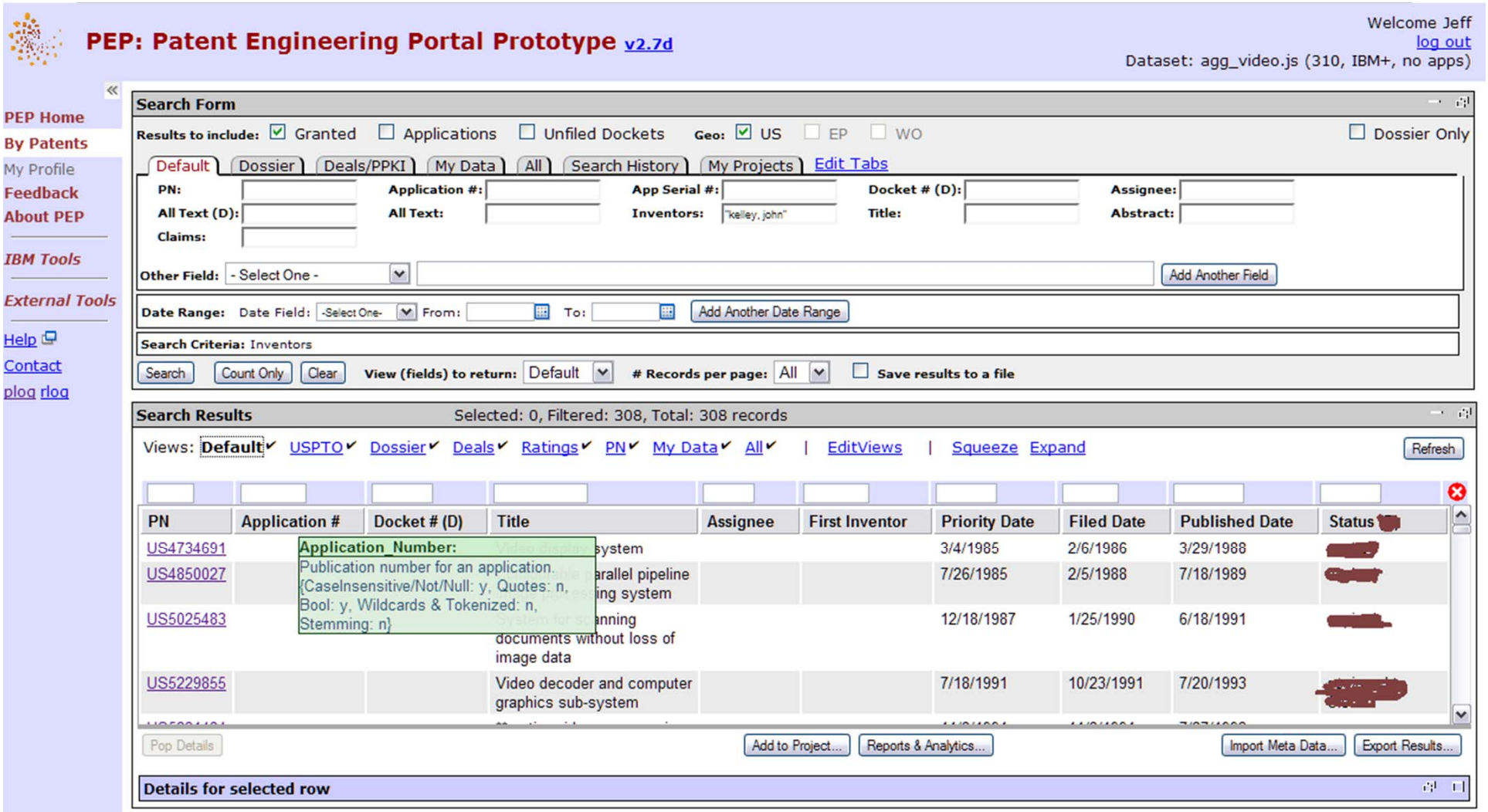
Here are the User Stories, including rankings of Importance, Pain and Frequency (from 32 users) so far. (Leverage and Prioritization are currently a Work-In-Progress.)

Show Comments: ☐

Num	As a...	I want to...	In order to...	Imp	Pain	Freq	Lev	Priority	N
42	PE	export patent data in structured fields, e.g. XML, to be able to import into office applications	use the structured data for building reports and graphs; provide lists, charts and graphs in patent engineering work deliverables	3.6	3.6	3.3	5	*5.0*	063 21.21.21
40	PE	be able to easily search and view cluster and proof data in one view	prepare more effective Proof or Value Presentation, and avoid presenting patents or clusters that have already been presented to my customer	3.5	3.4	3.3	2	*5.0*	066 22.22.22
37	PE	see who owns the patent or application	better understand who owns which patents	3.6	3.0	3.0	5	*5.0*	066 22.22.22
36	PE	be able to see all available data on a patent (or application) according to the fields I choose	more effectively use available data	4.0	3.5	3.7	5	*5.0*	066 22.22.22
35	PE	be able to select and search on any field available in the database (not just a subset)	create the most effective search	4.0	3.5	3.8	5	*5.0*	066 22.22.22
34	PE	search the existing cluster database with a few key words	study a company, look at their products and find out a list of patents that might be of some	3.6	3.5	3.3	3	*5.0*	066 22.22.22

Priority = average of Imp x 2, Pain x 1, Freq x 1, Reports & Analytics... Import Meta Data... Export Results...
Leverage x 4 Recalc Defaults

Patent Portal – Table-driven Concept ⇨ Prototype, complex searches against multiple databases



Patent Portal – Predicting ROI based on feedback survey about Early Concept

PEP: Patent Engineering Portal - Project Page

Welcome Jeff
log out

PEP Home
User Stories
Surveys
Survey 1 Add
Survey 1 Results
- - -
Survey 2 Add
Survey 2 Rank
Survey 2 Results
Process
Resources
Prototype
IBM Tools
External Tools
Help
Contact Jeff
plog rlog

Survey 1 Results, including summary statistics from 16 users so far

Show: ☑ Positives ☑ Suggestions ☑ Productivity Comments

Positives	Suggestions	Productivity Delta	Productivity Comments
Aggregation of multiple data sources. Flexibility for the user, customizations, etc.	Highlighting, flyover information that can be customized by the user Flagging of records based on user determined criteria within a search result	75	Ready and waiting for the first version!
Looks to have basic capabilities	Very concerned that without off line access and ability to import in that the tool will limit its usefulness. We also need multiple meta data fields not just PE comment field so that I can use those to export to a PPT presentation	25	
Single source of information	Coordination with other tool efforts such as PPKI	10	This will be most valuable if it replaces the need to visit other tools and functionality--not just another source to

Pop Details | Reports & Analytics... | Import Meta Data... | Export Results...

Users: 30 Ave # Hrly Rate: [redacted] Ave # Hrs/Day Using PEP: 6 # Working days/year: 261

Ave # Vacation Days: 25 Defaults Re-Calc (Hover over input boxes to see assumptions. Change and Re-Calc at will.)

Calculated ROI/year: $[redacted] per year (N=16, Mean=22.8, Standard Deviation=17.7)

▸ Click here to see: **Selected comments**

Contact Jeff | Help

Patent Portal – Driving Spreadsheet – Fields x Sources + Labels

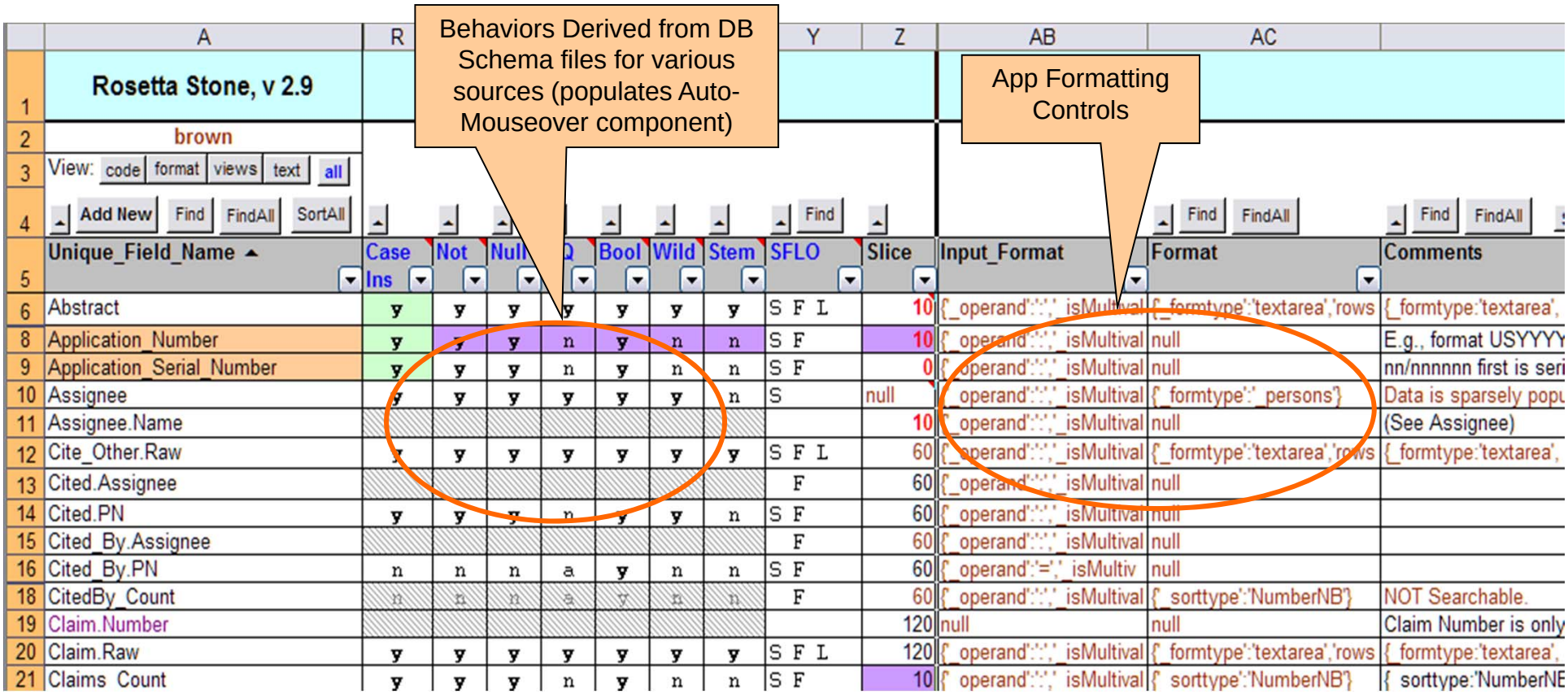
~500 potential fields for each Patent

Field Codes for 5+ Source DBs

What User Sees

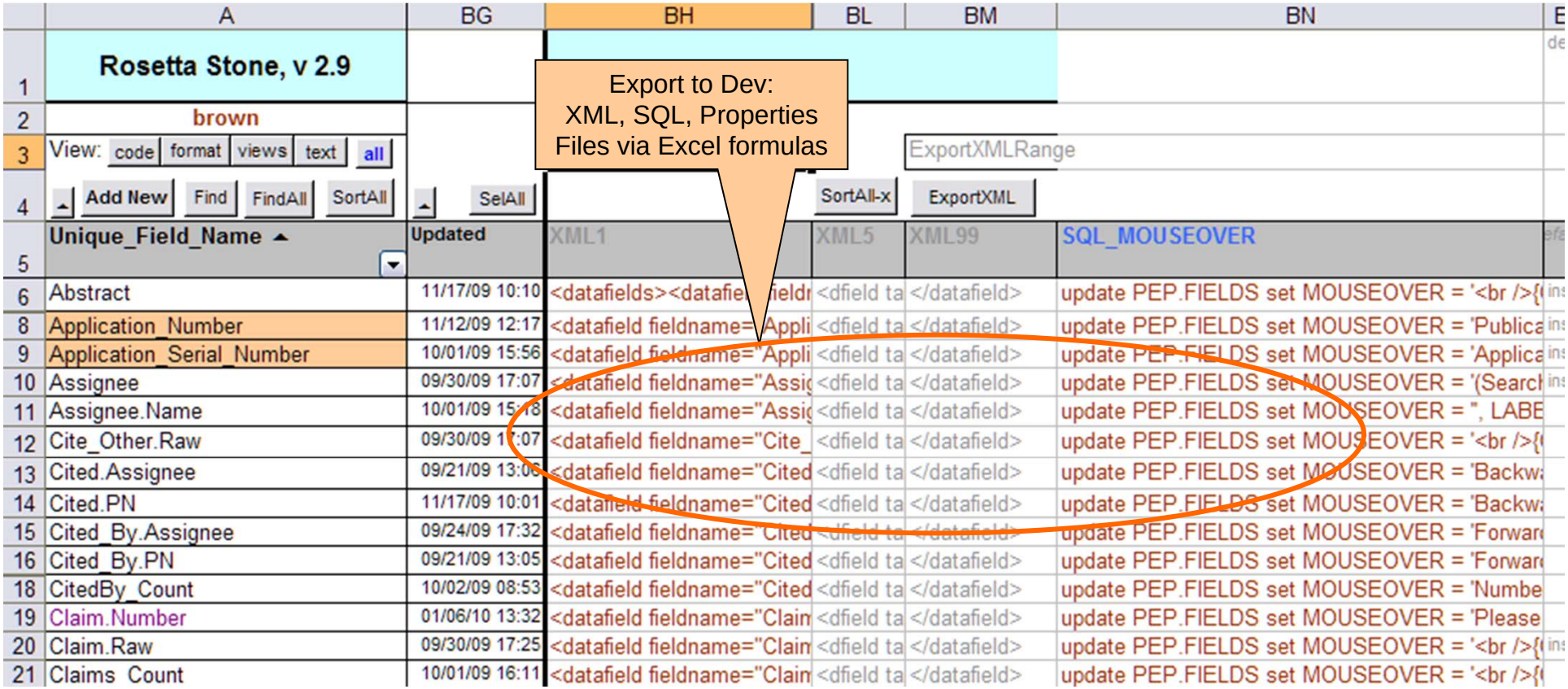
	A	B	C	G	K	L	M
1	**Rosetta Stone, v 2.9**						
2	brown	<=Cell modified col		142			
3	View: code format views text all						
4	Add New Find FindAll SortAll	Find FindAll	Find FindAll		Find FindAll	Find FindAll eeze Expand	Find FindAll
5	Unique_Field_Name	SIMPLE_FC_US	SIMPLE_FC_USA	Pind	Label	Mouseover_Descri on	Auto_Mouseover
6	Abstract	abstract	abstract	84	Abstract		 {CaseInsensitive: y,
8	Application_Number		pn	40	Application #	Publication number for an application.	 {CaseInsensitive: y,
9	Application_Serial_Number	apn	apn	41	App Serial #	Application Serial Number	 {Dossier or US
10	Assignee	assignee	assignee	79	Assignee	(Search Only)	 {Dossier or US
11	Assignee.Name	assignee.name	assignee.name	116	Assignee		
12	Cite_Other.Raw	cite_other.raw	cite_other.raw	55	Cited Other		 {CaseInsensitive: y,
13	Cited.Assignee	cited.assignee	cited.assignee	133	Cited Assignee	Backward References - Assignee for	
14	Cited.PN	cited.pn	cited.pn	51	Cited PN	Backward References - previous patents	 {CaseInsensitive: y,
15	Cited_By.Assignee	cited_by.assignee	cited_by.assignee	136	Cited By Assignee	Forward References - Assignee for later	
16	Cited_By.PN	cited_by.pn	cited_by.pn	52	Cited By PN	Forward References - later patents that	 {CaseInsensitive: n,
18	CitedBy_Count	cited_count	cited_count	93	# Forward Refs	Number of Forward References - later	 {CaseInsensitive: n,
19	Claim.Number	claim.number	claim.number	111	Claim #	Please Ignore. This field has no value to	
20	Claim.Raw	claim.raw	claim.raw	85	Claims		 {CaseInsensitive: y,
21	Claims_Count	claims_count	claims_count	94	# of Claims		 {CaseInsensitive: y,

Patent Portal – Driving Spreadsheet – Behaviors & Formatting



	A	R	Y	Z	AB	AC	
1	Rosetta Stone, v 2.9						
2	brown						
3	View: code format views text all						
4	Add New Find FindAll SortAll		Find		Find FindAll	Find FindAll	
5	Unique_Field_Name	Case Ins	SFLO	Slice	Input_Format	Format	Comments
6	Abstract	y	S F L	10	{_operand':',_isMultival	{_formtype:'textarea','rows	{_formtype:'textarea',
8	Application_Number	y	S F	10	{_operand':',_isMultival	null	E.g., format USYYYY
9	Application_Serial_Number	y	S F	0	{_operand':',_isMultival	null	nn/nnnnnn first is seri
10	Assignee	y	S	null	{_operand':',_isMultival	{_formtype':'_persons'}	Data is sparsely popu
11	Assignee.Name			10	{_operand':',_isMultival	null	(See Assignee)
12	Cite_Other.Raw	y	S F L	60	{_operand':',_isMultival	{_formtype:'textarea','rows	{_formtype:'textarea',
13	Cited.Assignee		F	60	{_operand':',_isMultival	null	
14	Cited.PN	y	S F	60	{_operand':',_isMultival	null	
15	Cited_By.Assignee		F	60	{_operand':',_isMultival	null	
16	Cited_By.PN	n	S F	60	{_operand':'=',_isMultiv	null	
18	CitedBy_Count	n	F	60	{_operand':',_isMultival	{_sorttype:'NumberNB'}	NOT Searchable.
19	Claim.Number			120	null	null	Claim Number is only
20	Claim.Raw	y	S F L	120	{_operand':',_isMultival	{_formtype:'textarea','rows	{_formtype:'textarea',
21	Claims_Count	y	S F	10	{_operand':',_isMultival	{_sorttype:'NumberNB'}	{_sorttype:'NumberNE

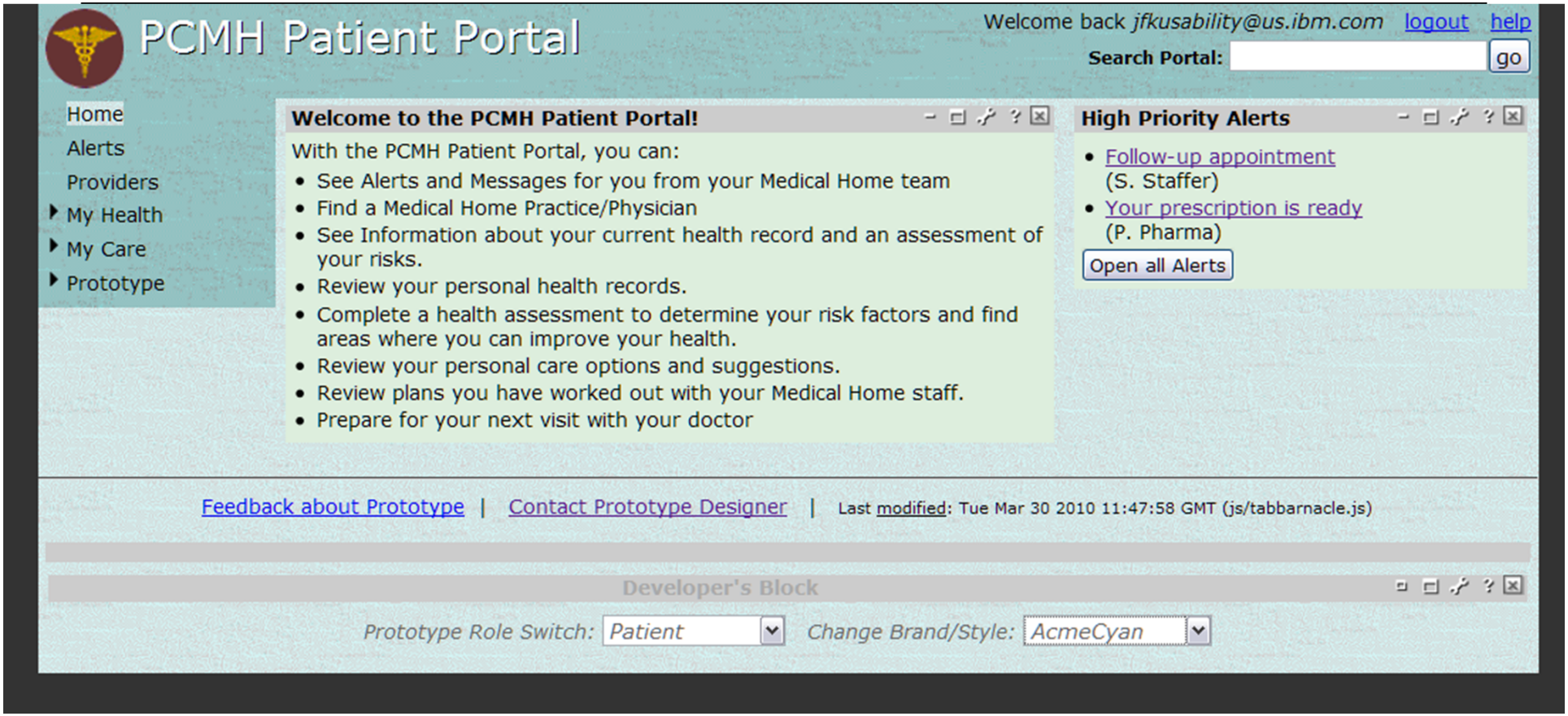
Patent Portal – Driving Spreadsheet – Export to Development



	A	BG	BH	BL	BM	BN
1	Rosetta Stone, v 2.9					
2	brown					
3	View: code format views text all				ExportXMLRange	
4	Add New Find FindAll SortAll	SelAll		SortAll-x	ExportXML	
5	Unique_Field_Name	Updated	XML1	XML5	XML99	SQL_MOUSEOVER
6	Abstract	11/17/09 10:10	<datafields><datafie	<dfield ta	</datafield>	update PEP.FIELDS set MOUSEOVER = '
8	Application_Number	11/12/09 12:17	<datafield fieldname="Appli	<dfield ta	</datafield>	update PEP.FIELDS set MOUSEOVER = 'Publica
9	Application_Serial_Number	10/01/09 15:56	<datafield fieldname="Appli	<dfield ta	</datafield>	update PEP.FIELDS set MOUSEOVER = 'Applica
10	Assignee	09/30/09 17:07	<datafield fieldname="Assig	<dfield ta	</datafield>	update PEP.FIELDS set MOUSEOVER = '(Search
11	Assignee.Name	10/01/09 15:18	<datafield fieldname="Assig	<dfield ta	</datafield>	update PEP.FIELDS set MOUSEOVER = ", LABE
12	Cite_Other.Raw	09/30/09 17:07	<datafield fieldname="Cite_	<dfield ta	</datafield>	update PEP.FIELDS set MOUSEOVER = '
13	Cited.Assignee	09/21/09 13:06	<datafield fieldname="Cited	<dfield ta	</datafield>	update PEP.FIELDS set MOUSEOVER = 'Backw
14	Cited.PN	11/17/09 10:01	<datafield fieldname="Cited	<dfield ta	</datafield>	update PEP.FIELDS set MOUSEOVER = 'Backw
15	Cited_By.Assignee	09/24/09 17:32	<datafield fieldname="Cited	<dfield ta	</datafield>	update PEP.FIELDS set MOUSEOVER = 'Forwar
16	Cited_By.PN	09/21/09 13:05	<datafield fieldname="Cited	<dfield ta	</datafield>	update PEP.FIELDS set MOUSEOVER = 'Forwar
18	CitedBy_Count	10/02/09 08:53	<datafield fieldname="Cited	<dfield ta	</datafield>	update PEP.FIELDS set MOUSEOVER = 'Numbe
19	Claim.Number	01/06/10 13:32	<datafield fieldname="Claim	<dfield ta	</datafield>	update PEP.FIELDS set MOUSEOVER = 'Please
20	Claim.Raw	09/30/09 17:25	<datafield fieldname="Claim	<dfield ta	</datafield>	update PEP.FIELDS set MOUSEOVER = '
21	Claims_Count	10/01/09 16:11	<datafield fieldname="Claim	<dfield ta	</datafield>	update PEP.FIELDS set MOUSEOVER = '

Medical Home Prototype – Patient Perspective (tree nav, liquid layout for main content column)

Medical Home Prototype – Table-driven rebranding (fixed-width, logo, style)

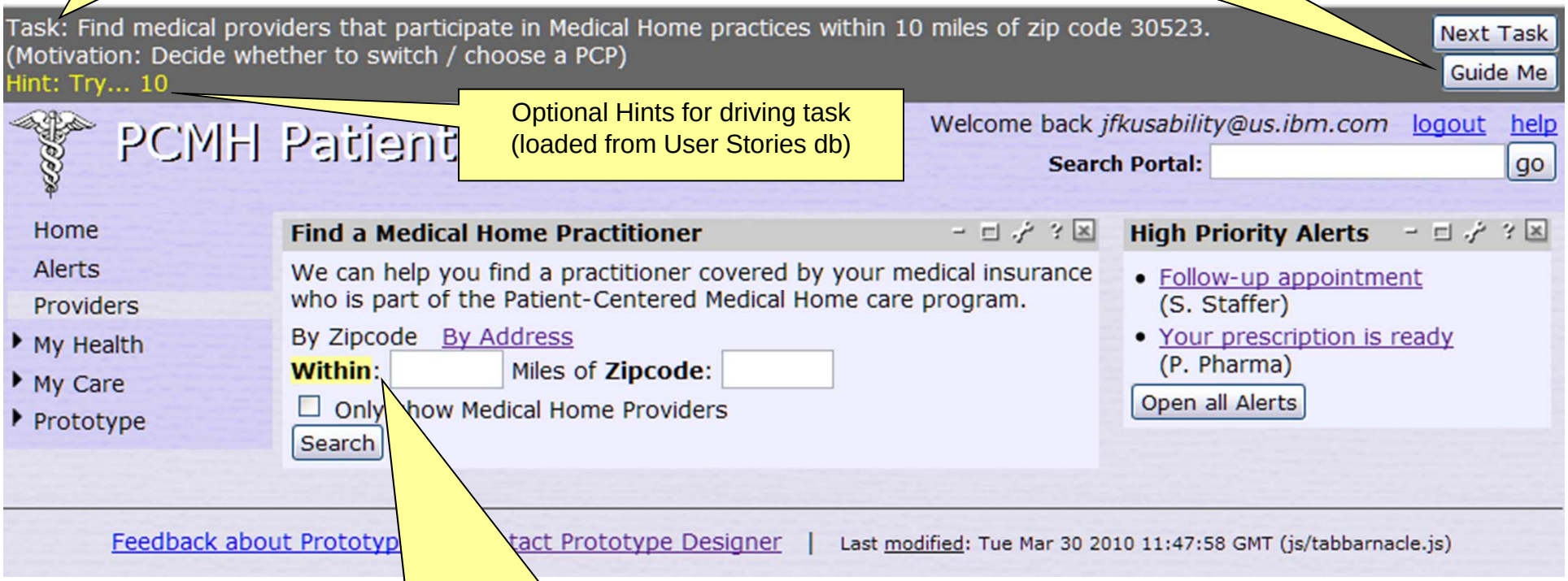


Medical Home Prototype – Table-driven Alternate Nav Style: Tabs

Medical Home Prototype – AutoPlay for Demos and Prompted Tasks for Remote Usability Testing – fed from User Stories DB

Test/Demo Task Instructions (loaded from User Stories db)

If lost or frustrated during remote usability testing (or demo), launch Hints ("Cheat sheet") with Guide Me button.



Optional Hints for driving task (loaded from User Stories db)

If Guide Me is clicked, Blinking prompt directs user's attention to next action field/button. During auto-playback it also auto-clicks and/or auto-fills input fields in hands-off mode.

Medical Home Prototype – Developer's Portlet (Nav table)

Layout Demo
Layout Demo2
Configure Demo

Feedback about Prototype | Contact Prototype Designer | Last modified: Thu Mar 11 2010 05:53:39 GMT (js/tabbarnacle.js)

Developer's Block

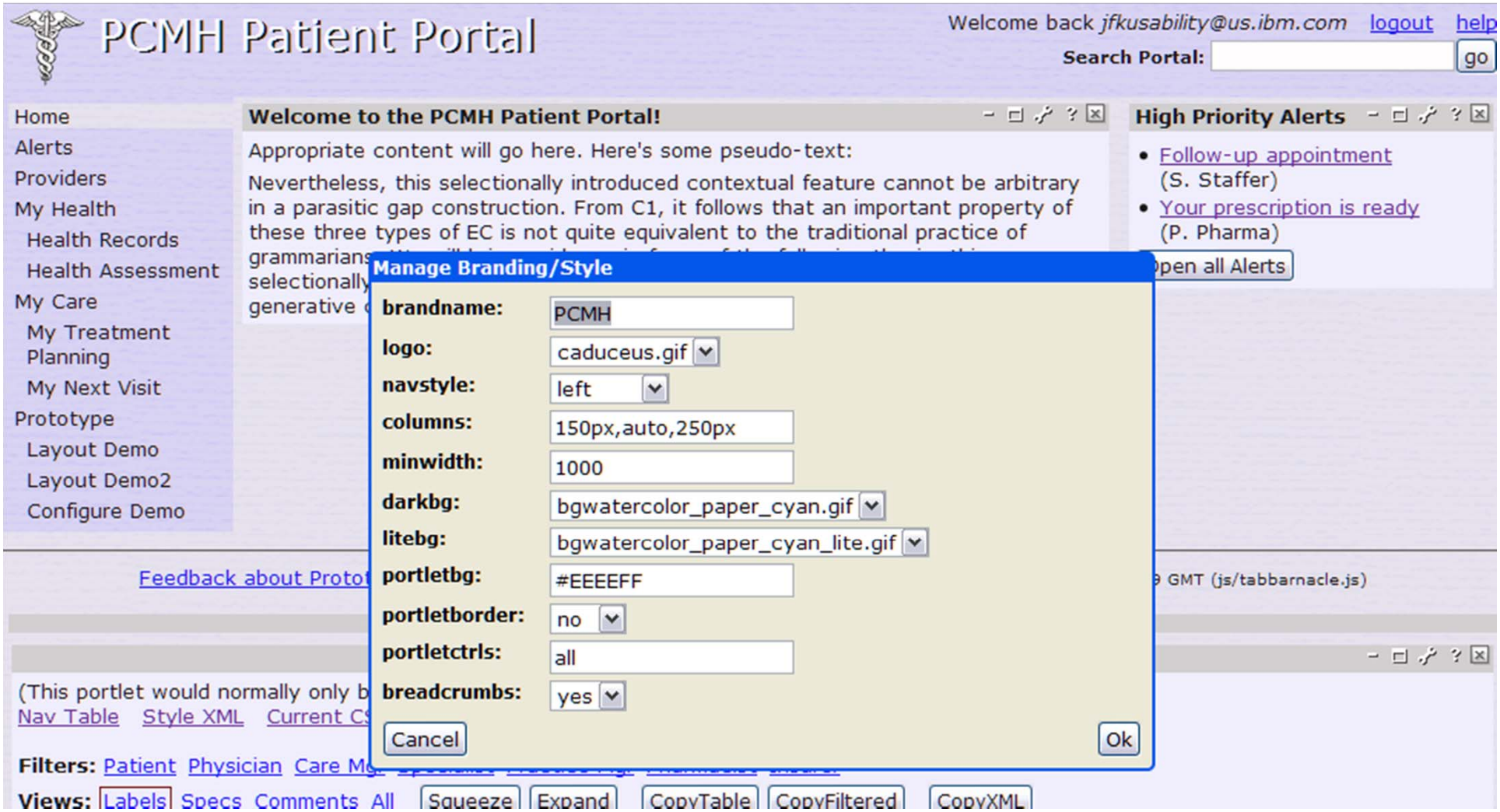
(This portlet would normally only be visible to Developers)
Nav Table Style XML Current CSS Style Manager Whack!

Filters: Patient Physician Care Mgr Specialist Practice Mgr Pharmacist Insurer

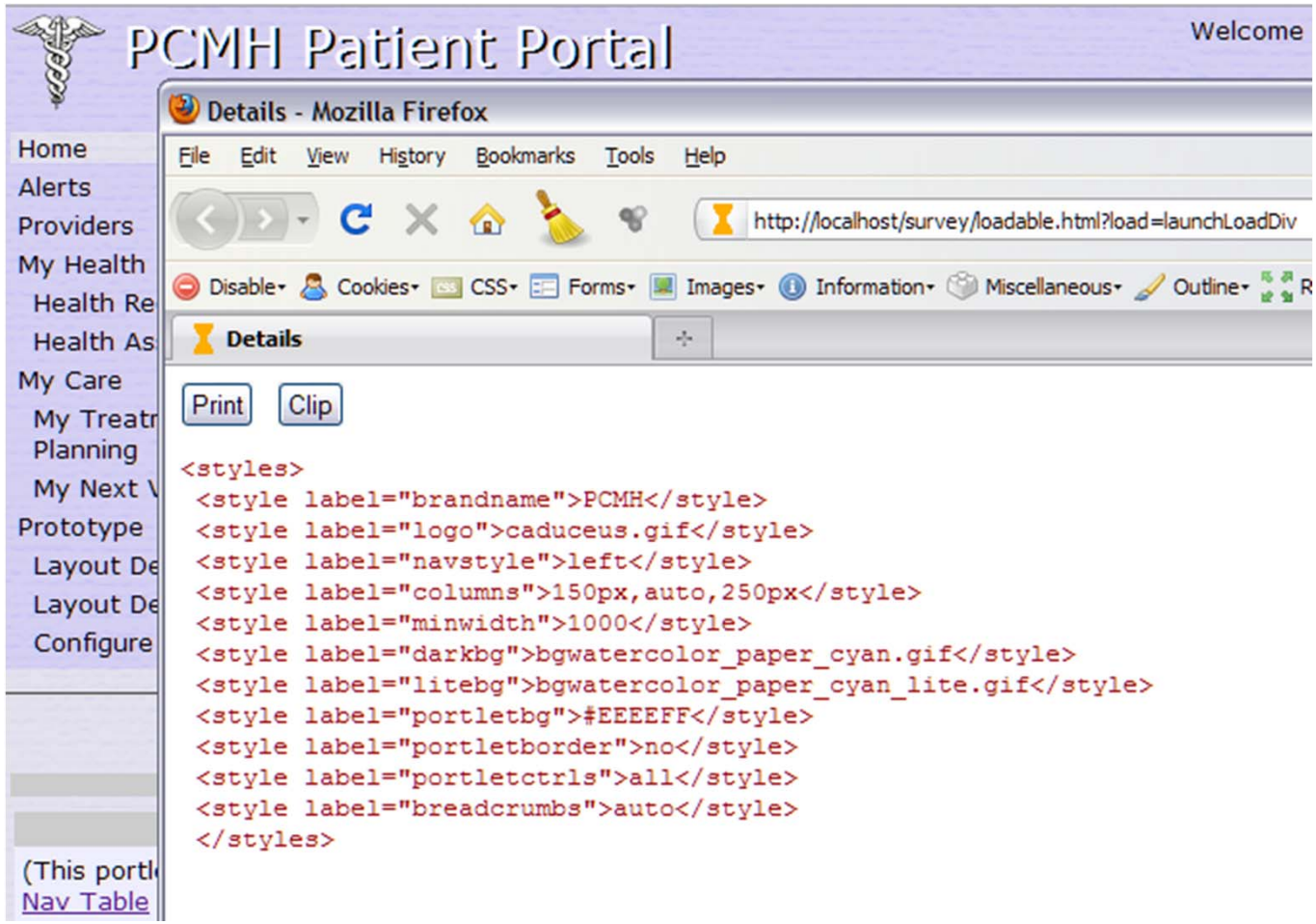
Views: Labels Specs Comments All Squeeze Expand CopyTable CopyFiltered CopyXML

Nav	Tooltip	Roles	Context
Home	Welcome to the PCMH Portal	*	Patient
Alerts	Alerts and Messages for you from your Medical Home team	*	Patient
Providers	Find a Medical Home Practice/Physician	*	Patient
My Health	Information about your current health record and an assessment of your risks.	*	Patient
~Health Records	Review your personal health records.	*	Patient
~Health Assessment	Complete this health assessment to determine your risk factors and find areas where you can improve your health.	*	Patient
My Care	Your personal care options and suggestions.	*	Patient
~My Treatment Planning	Plans you have worked out with your Medical Home staff.	*	Patient
~My Next Visit	Preparation for your next visit with your doctor	*	Patient
Prototype	Prototype tools	admin dev	*
~Layout Demo	Demonstration of Liquid Layout and default nav (e.g., left)	admin dev	*
~Layout Demo2	Demonstration of Liquid Layout with Top Link nav override and Under div	admin dev	*
~Configure Demo	Configure look and feel	admin dev	*

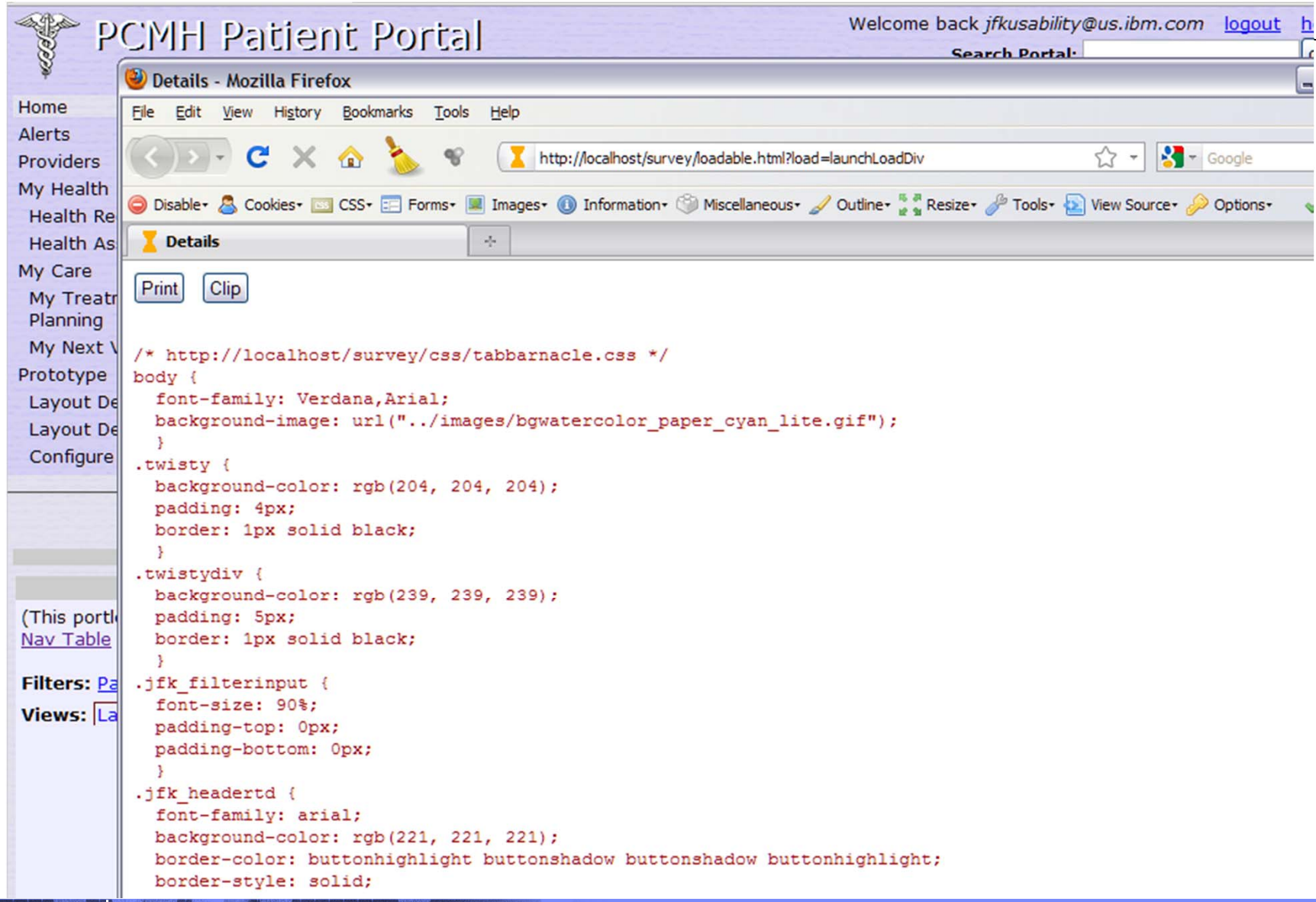
Medical Home Prototype – Developer's Style Manager



Medical Home Prototype – Developer's Export XML



Medical Home Prototype – Developer's Export CSS



User Stories – Requirements from user's perspective

- Borrowed from Agile Software Development; ***can be helpful in Agile or Waterfal***l
- A brief statement, ***in the user's language***, of one "unit" of functionality
- Format: "As a [role] I want to [achieve some result / perform some task] in order to [meet some need, goal or business requirement]."
- Example: "As a ***Patient***, I want to ***review test results from my last visit to the doctor*** in order to ***prepare any questions I may have in advance so I don't forget anything***."
- ***Light-weight, just-in-time*** requirement document for use by UX designers - short enough to be written in marker on an index card
- Often accompanied by a set of ***acceptance tests*** that anyone can try once the story is coded to see if it does what it is supposed to do
- ***Manageably small scope*** to allow a development team to code it and test it in one sprint
- Can ***attach team notes*** about ongoing conversations, including pointers to wireframes or prototype designs, data tables, results of acceptance tests, etc.. It is also sometimes useful to document ***inputs*** to the implied task and the results or ***expected end-states*** once the task is completed (as in a Use Case).
- Ideal as a ***starting point for designing online help and training materials***. (Combined with the Click Scenarios included in AgileRemote, the ***user stories are almost complete FAQ's***, remote usability testing tasks, and training demos right out of the box.)
- ***Easily generated from hypothetical day-in-the-life scenarios***, which stakeholders and SMEs might find easier to write as a starting point

Thank You!

Appendix: HFES 2012 Panel Intro

Agile product development has been defined as a process that involves rapid and frequent design updates using cross-functional teams including marketing, manufacturing, procurement and design. A second stage brings in customers, suppliers and other external stakeholder groups for additional enhancements. Risk analysis and requirements analysis are integrated throughout the process and at each stage. There appear to be many similarities between this and modern approaches to user experience.

However, there are also significant differences. Allen (2011) contrasts the two outlooks by defining the focus of user experience as multi-revision, iterative design whereas agile focuses on incremental growth. While these may seem similar, agile is primarily linear whereas user experience is cyclical. The difference in mindset can make the two hard to integrate into a single process.

Spool (2011) adds a third dimension in order to resolve the difference. Lean UX, he claims, is the formulation of user experience that fits best into the agile development process. Finally, he concludes, the waterfall model must be left behind. In a later commentary (Spool, 2012), he describes agile development as a welcome positive shift that opens up new opportunities for user experience to break in earlier to the overall design process.

Ferreira, Sharp, and Robinson (2010) discuss the pervading trichotomy for the relationship between agile development and user experience in industry. Established user experience teams and agile development teams can operate separately, passing designs between them as milestones are reached. Alternatively, user experience and agile can be fully integrated into a development process where user experience and product development are implemented by a combined team. Finally, a new user experience or agile process perspective can be added to an established user experience or agile team in an attempt to newly integrate them. This change may be challenged by a greater status and prominence of the existing, stronger program. Each of these organizational interventions has different implications for the overall development process.

The dearth of rigorous and comprehensive research studies is notable. The difficulty of creating valid and generalizable research approaches forces most authors to provide insights into lean and agile UX through workshops (Sy and Miller, 2008), panels (Miller and Sy, 2009), and case studies (Kollman, Sharp, and Blandford, 2009; Budwig, Jeong, and Kelkar, 2010) . This panel will be similar, except that it will bring together a multi-disciplinary set of speakers from a much wider variety of industries and organizational structures. Further, the organization of the panel will focus on the tensions between user experience and agile development. The panel will focus on the productive friction (Hagel, 2005) that most often leads to advances in strategic thought.

Appendix: HFES 2012 Panel - Kelley

OVER THE WATERFALL IN A BARREL - ADAPTING AGILE TECHNIQUES TO USER EXPERIENCE IN A NON-AGILE WORLD

UX Practitioners have been applying iterative, user-centered techniques in a waterfall environment for a long time. This has reached the point where usability is frequently represented as a small iteration circle graphic within large development process charts (though that practice is, sadly, still most often observed in the breach).

When agile came along it seemed a godsend. Here was a fervent community dedicated to the basic principle of iteration - they even had a Manifesto to proclaim their philosophy. Unfortunately, in early agile there was no space for user experience. The perception was that the typical user experience process requires too much time for the short sprints required in agile.

Some work has been done to adopt "discount usability" and shorten the time required to perform UX work in tight timeframes, and other work has been done to tweak processes to allow UX work to proceed in parallel. But even when we thought we could see the bathwater circling the drain, we saw a way to rescue the baby. There are some key artifacts and practices in the agile portfolio that can provide great value for UX practitioners in all manner of development processes.

This talk will share experiences applying UX in Agile and applying Agile to UX. A variety of software development projects will be used as case studies to show the challenges of integration and how they can be overcome.