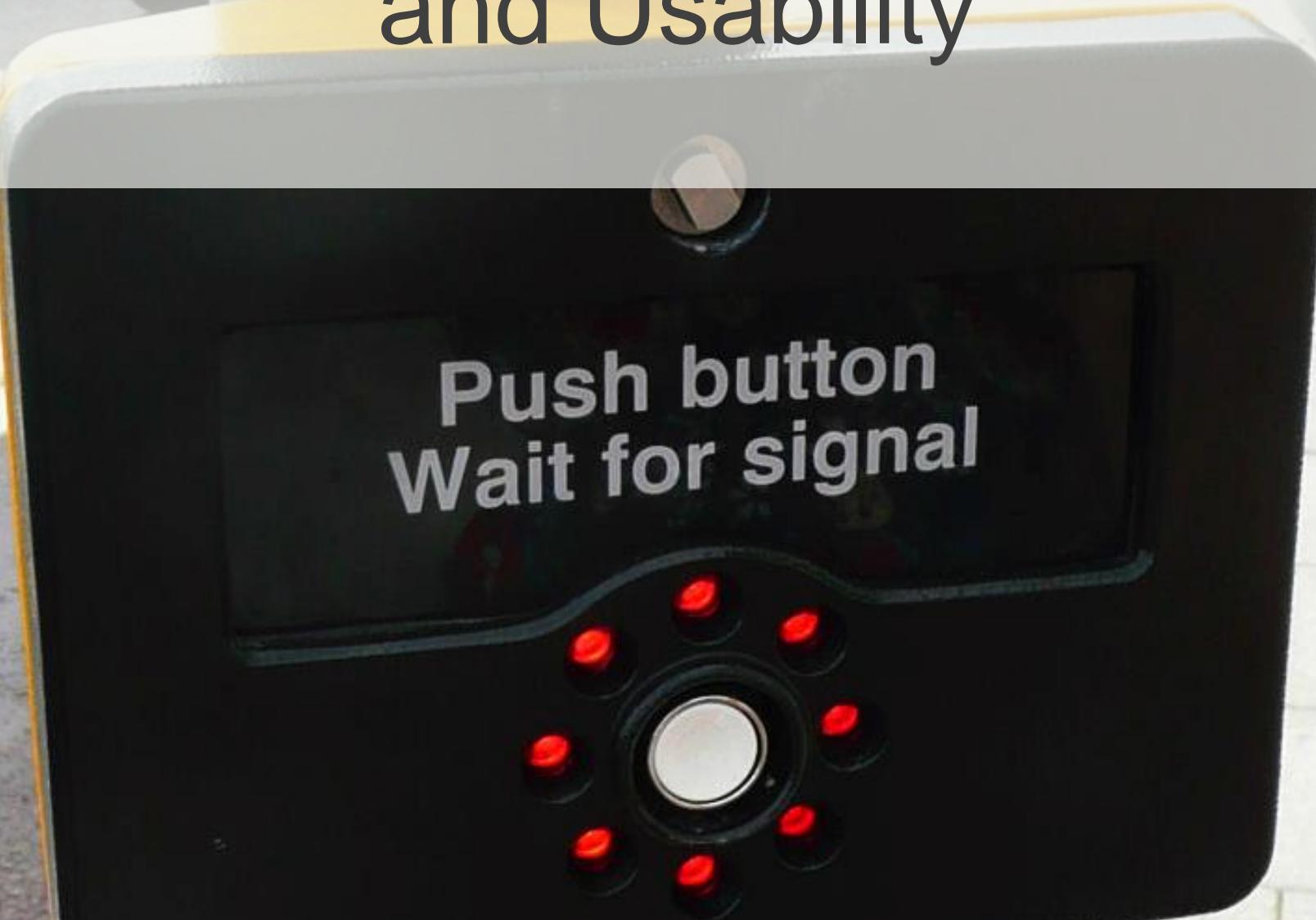
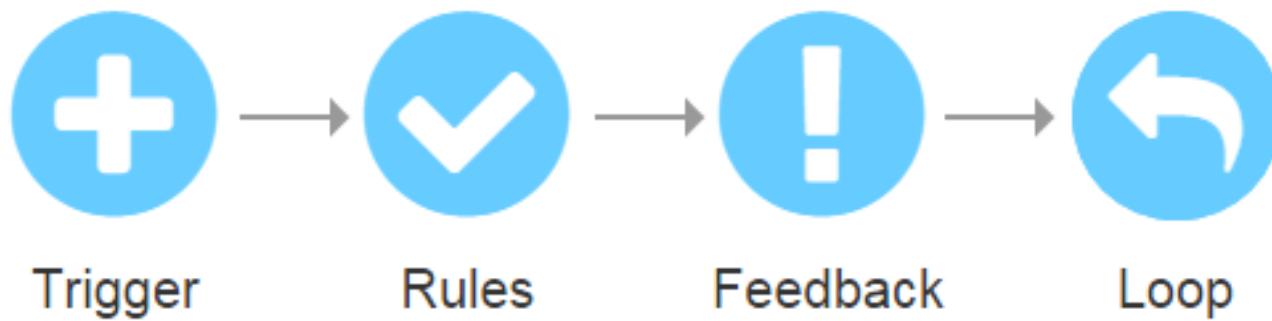


Interaction Design Principles and Usability

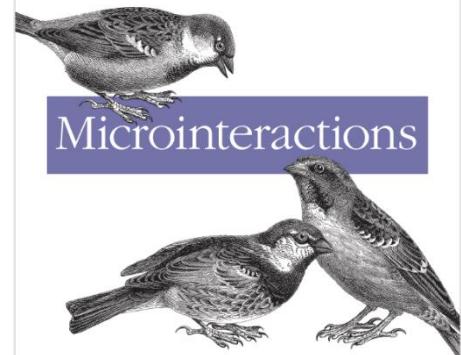


Push button
Wait for signal

What's Interaction?



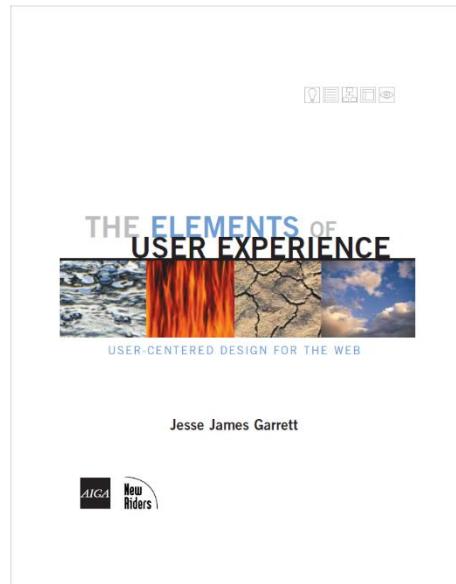
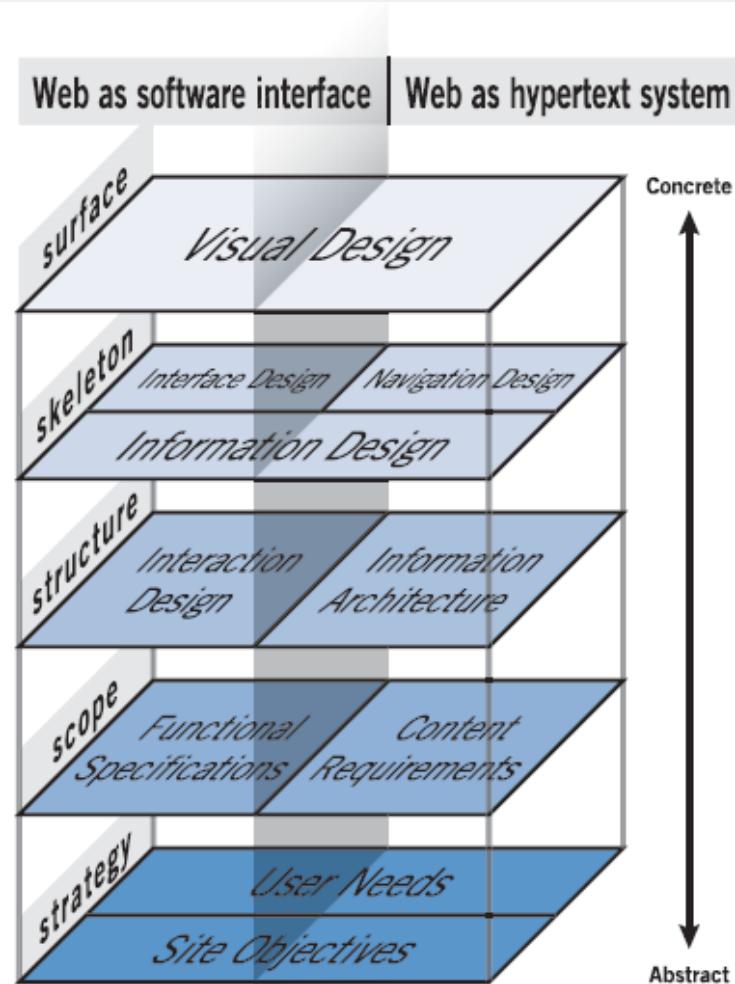
Designing with Details



O'REILLY®

Dan Saffer
Foreword by Don Norman

What's Interaction Design?

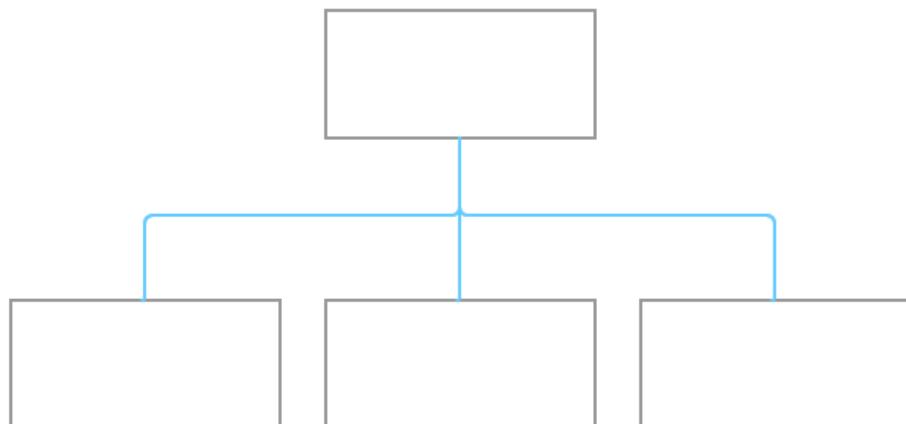


IA vs. IxD

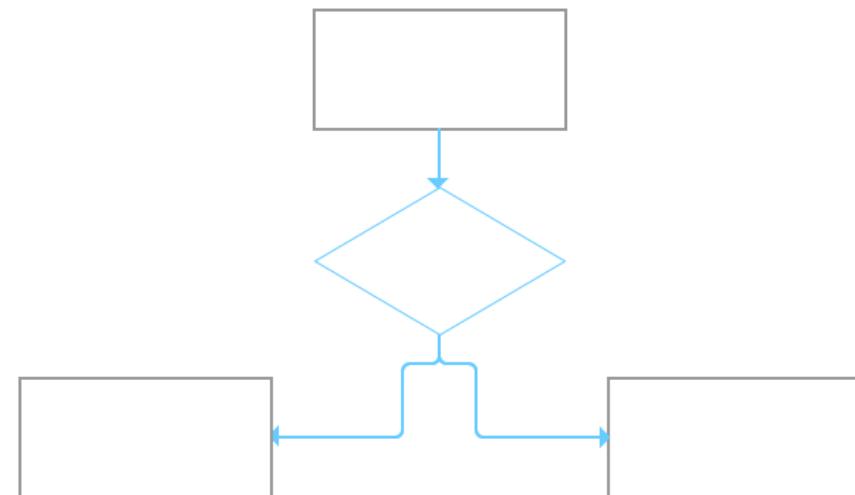
Information Structure Systems, taxonomies	Goals Behavior Tasks, actions, process flows
Organization of information	Process of exploration

IA vs. IxD

Sitemaps



Workflows



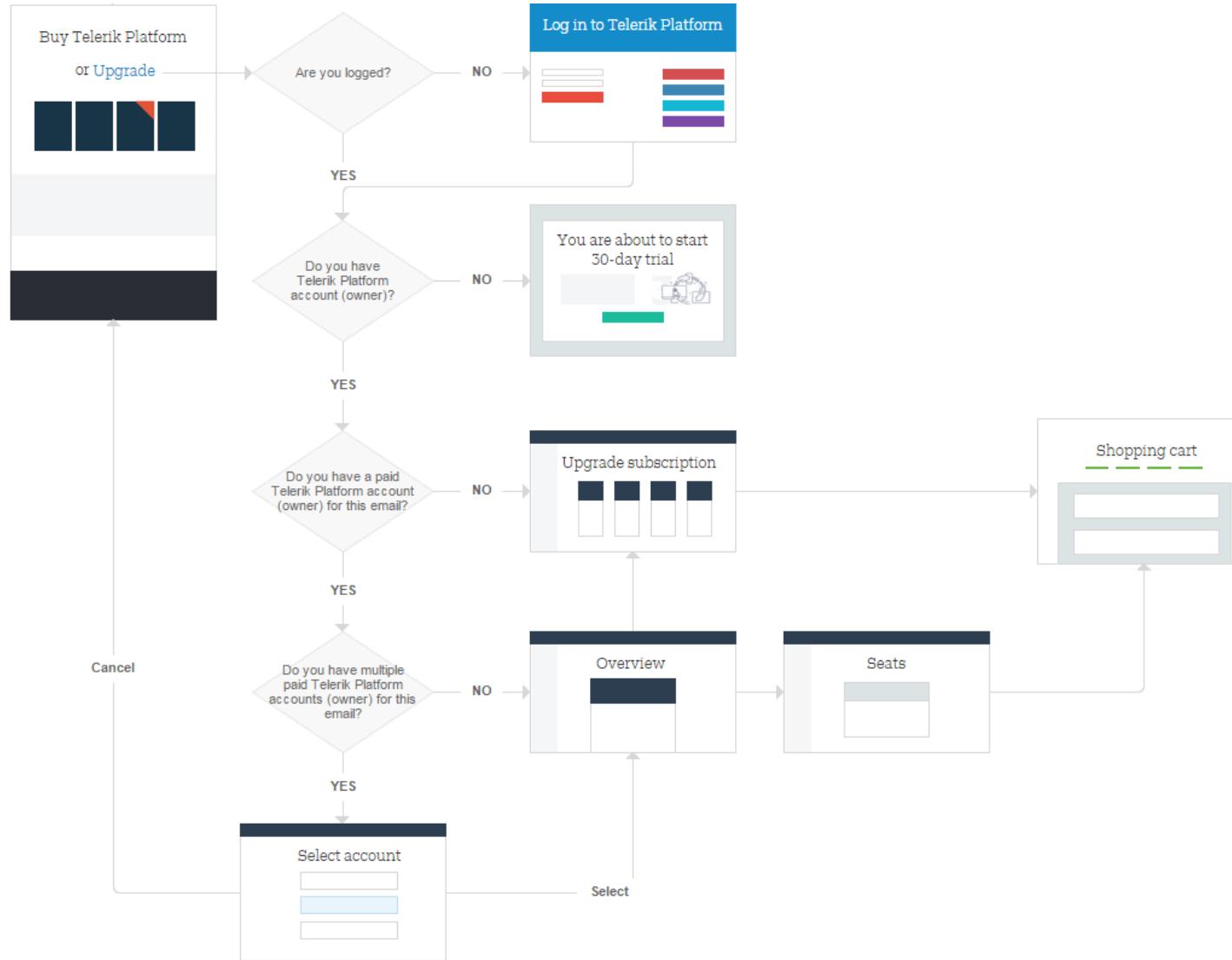
What's Interaction Design?

“ Development of application flows to facilitate user tasks defining how the user interacts with the site functionality. Through interaction design we define how the system behaves in response to the user.

JESSE JAMES GARRETT

IxD deals with user actions leading to certain reactions from the device or application they are working on to complete a specific task or achieve a certain goal.

Does It Look Like This?



IxD Principles

Conceptual principles

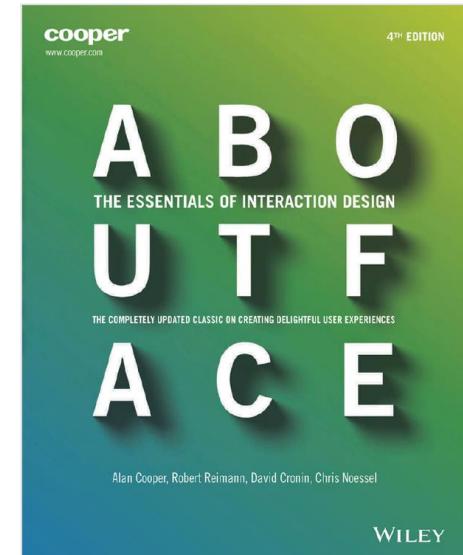
Define what digital products should be like and how they fit structurally into the broad context of use required by their users.

Behavioral (functional) principles

Describe how a product should behave—in general and in specific contexts.

Interface-level principles

Describe effective strategies for the organization, navigation, and communication of behavior and information.



IxD Principles

What

Who

Why

Where

When

Conceptual principles

How

Functional principles

Interface-level principles

Conceptual Interaction Design

1. Application goals
2. Target persona
3. Content and messaging
4. Context of use

Conceptual Interaction Design

1. Application goals

- What's the purpose of your application
- What problems does it solve, what needs does it address
- What's the business value of your application - what do you want to achieve by designing it
- What's the users' benefits of your application – why would anyone use it, what incentives do you offer
- Do you have competition, how is your application different than the competition, what are your advantages
- How do you measure your application success



Good design is good business.
THOMAS WATSON, JR.

Lean Canvas Example

PROBLEM <i>List your top 1-3 problems.</i>	SOLUTION <i>Outline a possible solution for each problem.</i>	UNIQUE VALUE PROPOSITION <i>Single, clear, compelling message that states why you are different and worth paying attention.</i>	UNFAIR ADVANTAGE <i>Something that cannot easily be bought or copied.</i>	CUSTOMER SEGMENTS <i>List your target customers and users.</i>
	KEY METRICS <i>List the key numbers that tell you how your business is doing.</i>		CHANNELS <i>List your path to customers (inbound or outbound).</i>	
EXISTING ALTERNATIVES <i>List how these problems are solved today.</i>		HIGH-LEVEL CONCEPT <i>List your X for Y analogy e.g. YouTube = Flickr for videos.</i>		EARLY ADOPTERS <i>List the characteristics of your ideal customers.</i>
COST STRUCTURE <i>List your fixed and variable costs.</i>		REVENUE STREAMS <i>List your sources of revenue.</i>		

Conceptual Interaction Design

2. Target user

- Who are your users
- Who's your primary persona, secondary personas
- What are their needs, drivers, pain-points
- What are your users' demographics – age, sex, region, occupation, etc.
- What are their attitudes and expectations
- What is their experience – newbies, power-users



Design for somebody, alienate nobody.
PAUL BOAG

Conceptual Interaction Design

User types according to their approach

Experts

Willing adopters

Mainstreamers

Experts

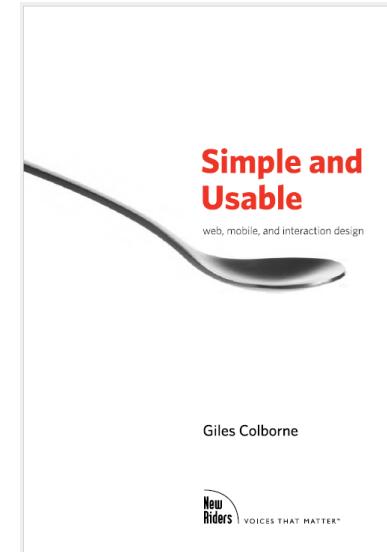
Happy to explore new products. Want feature-rich never-before-seen technology that is customized for them.

Willing adopters

Already use similar products. Tempted to use something more sophisticated, but need to be given easy ways to adopt new features.

Mainstreamers

Don't use technology for its own sake; Tend to learn a few key features and rarely add to their repertoire.



Persona Example

Merchant (first time user)



Key Characteristics

37 years old
Married with two kids, lives in Munich, Germany.
Affiliate Marketing expert working in retail sector (what is a typical job title?) for independent, privately run company?
4 people in the company
Has 4 years experience in the industry, 2 years in current role
He has a degree in Marketing from University
Current salary is £38,000
Monthly earning from Affiliate Marketing is ?

Claudia

“This year we’re looking to double our sales, we had a disappointing year last year and currently we’re looking to find a Network to help us find more suitable affiliates.”

Background

Was recommended by a business acquaintance to take a look at what Webgains offer to Affiliates on their network. Has some basic HTML coding knowledge and sort of understands what CSS does. Needs to know more about exactly how cookies work but gets the basic idea of them. Has been using his iPhone for the last two years waiting to upgrade when the iPhone 4S comes out. Uses it a lot each day, at work and in leisure time. Has heard only good things about Webgains but wants to make up his own mind so needs to check the website to fully understand how joining Webgains network would benefit his business. Claudia works in the company office in the middle of town. The company has 200 employees throughout Europe and she eventually looks to expand globally. She enjoys most of her work duties and is very thorough in her approach to matters of business. She is a very busy person and so doesn't tend to have too much time to spare. She appreciates it when information is easily available rather than requiring more effort and time.

Goals

Wants to work with Merchants (Advertisers) that offer: good commission level, high conversion rate, details on cookie period, high level of transparency, good data-feed quality, various incentives and competitions.

Is looking for an Affiliate Network that offers: reliable tracking, impressive variety of merchants (advertisers) and reliable frequent payments.

Frustrations

Not offering enough statistics
Service doesn't feel very personal
Don't feel like we are improving
Communication can seem a little slow
Lack of help in connecting us with suitable merchants
No help in securing non-cpa deals

Questions

Questions over WG

Conceptual Interaction Design

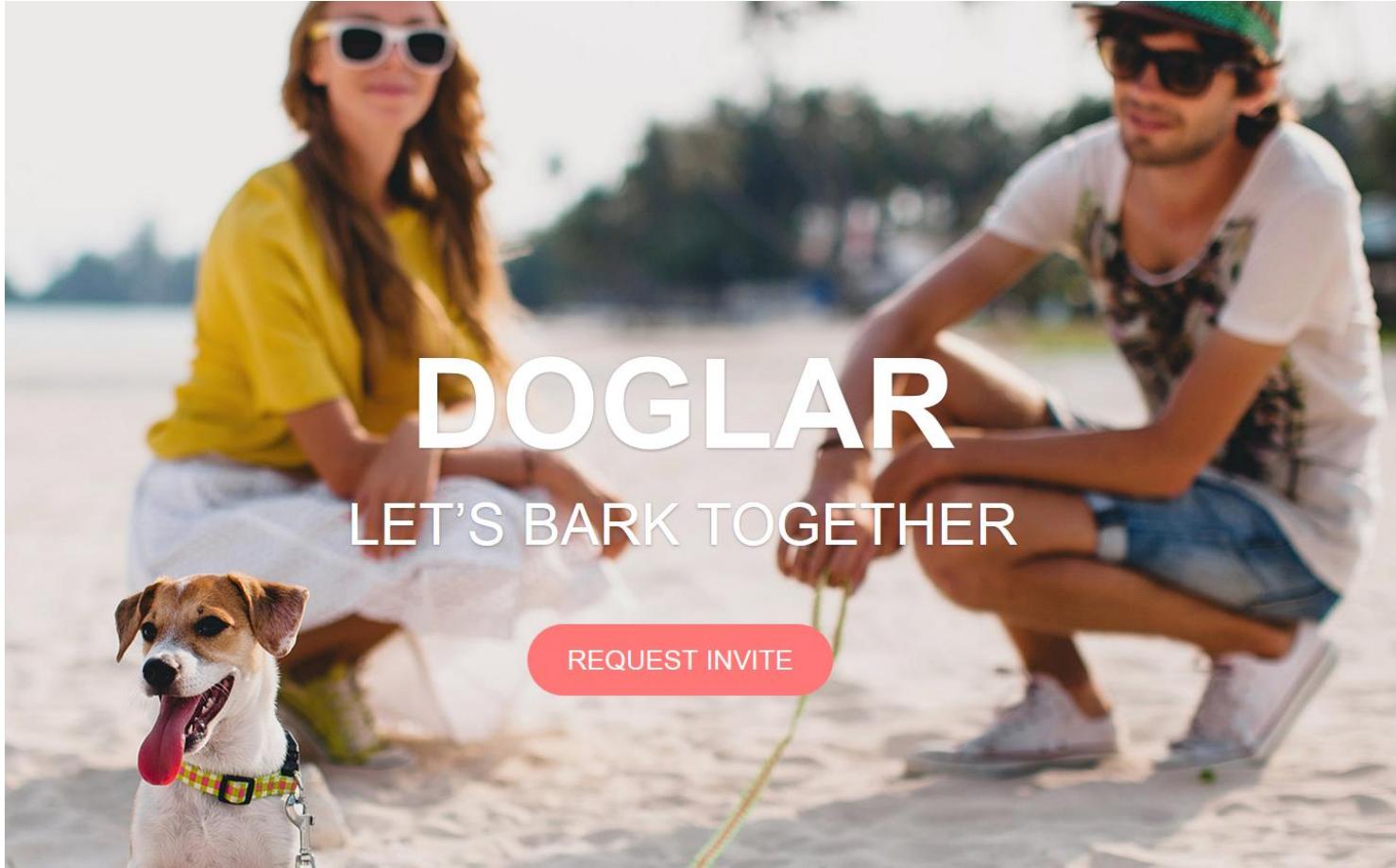
3. Content and messaging

- What is the message your application convey
- What content do you present – topics and genres (articles, photos, products, etc.)
- Do you use the proper language - with words, phrases and concepts familiar to the user

“ Content is king!
BILL GATES

“ Content precedes design. Design in the absence of content is not design, it's decoration.
JEFFREY ZELDMAN

Messaging Example



Content Guide Example

1. THE TELERIK BRAND	2. APPLYING THE BRAND IN WRITING	3. BOILERPLATE MESSAGING	4. TELERIK RULES OF STYLE	5. CORPORATE COMMUNICATIONS TEAM	6. MARKETING CONTENT CREATION GUIDE	7. SEARCH ENGINE OPTIMIZATION
Who Is Our Target?	Telerik Tone of Voice	Tone at a Glance	Closing Salutations and Telerik-isms			

Proper Voice

Rather than asking for the recipient to invite others to the event, we are taking a more powerful position by enthusiastically offering the option to bring a friend—without yelling.

The tone shifts from boastful and “me, me, me,” to grateful appreciation, deflecting credit from ourselves to our loyal developer base.

 **Not Telerik Style**

Frantic

Do you have colleagues who may also be interested in attending? If so please forward this email to them now!

Self-serving

The Q1 release is the best we've ever made, and strong Telerik sales are the proof. We also have won six awards this year—a testament to the wide acclaim Telerik is getting across the industry.

 **Telerik Style**

Energetic

Spread the word. If you have a friend or colleague who would be interested in attending this event, feel free to forward this email.

Humble authority

Thanks for your warm reception of Q1 DevCraft. We've certainly struck a chord with many developers and couldn't be more pleased. You are the force behind all we do, so winning six industry awards is a tremendous honor.

Conceptual Interaction Design

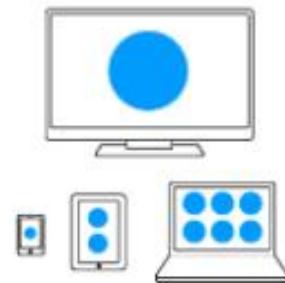
4. Context of use

- Where is your application used
- What's users' location when using it – home, office, outside, etc.
- Is it used for professional purposes or for leisure
- What device will be used to access your application – desktop, mobile, wearables, kiosks, smart tv, game console, etc. One or multiple devices.

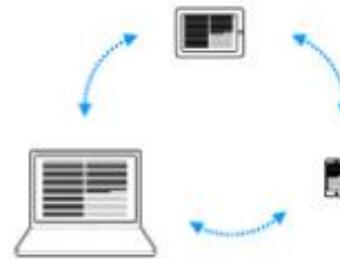


If content is king, context must be the kingdom.
ERIC REISS

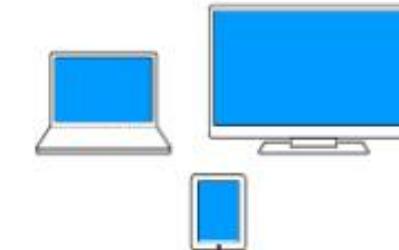
Multi-Device Usage Examples



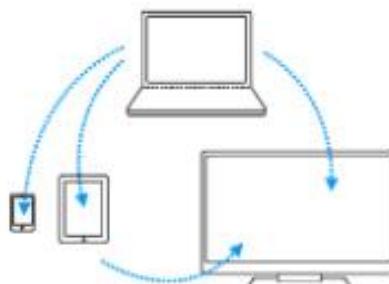
Coherence



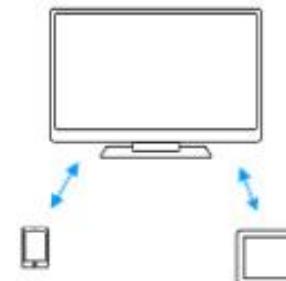
Synchronization



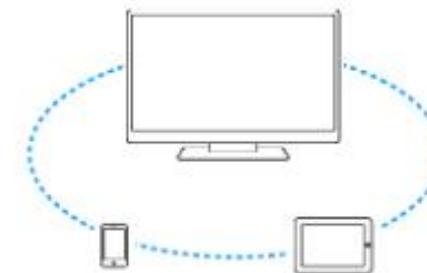
Screen sharing



Device shifting



Complementarity



Simultaneity

Functional Interaction Design

1. User scenarios
2. User stories
3. Use cases
4. Workflows
5. Wireframes and low-fidelity prototypes

Functional Interaction Design

1. User scenarios

A narrative for the interactions between a user and the application towards achieving a certain goal. Describe the context and steps, events, and/or actions which occur during the interaction. If personas are the characters – the user scenarios are the plot.

Example scenarios:

- Downloading a trial
- Purchasing a product
- Contacting support

Functional Interaction Design

2. User stories

A high-level definition of a requirement in agile software development methodologies. Contains one or more sentences in the everyday or business language of the end user that captures what the user wants to achieve.

"As a <*role*>, I want <*goal/desire*> so that <*benefit*> (optional)"

"As a *license holder*, I want *to be able to change my billing/shipping addresses through Your Account*, so that *I receive my invoices at the right address*."

User Stores Example

The screenshot shows the Telerik TeamPulse application interface for managing a backlog of user stories. The backlog is organized into four main columns: NOT STARTED, IN PROGRESS, READY FOR TEST, and IN TESTING. Each column contains a list of user stories, each with a unique ID, a brief description, and an estimated effort value.

NOT STARTED	IN PROGRESS	READY FOR TEST	IN TESTING
232631 Improve shopping cart form validation (State vs ZipCode)	292119 [UI] Manage License Users page Est. 7	288595 Exception when sending support ticket with large attachment (>20MB)	299656 GroupedByUser - "Expires" column header should be "Valid Until" in order to for UI to be consistent
258574 YA: As a Telerik Platform user, I want to quickly and easily download the files I am licensed to use Est. 7	299619 Rework Manage Payment Profiles page in YourAccount Est. 21	298825 When holder has only 1 license that he is not licensed user of -> Add message on the when group by user Est. 7	299498 Rework Edit Profile page Est. 6
270169 YA: Implement CreditCard Problem Messages Est. 3	299621 Rework Online Shopping Cart payment profiles functionality Est. 16	299352 Google Analytics tracking Est. 10	300951 Failed Testing: When License User delete themselves from the only 1 license they are added in -> message for no licenses should be shown Est. 10
258875 As a user, I want to be able to request extension of my expired trials from within Your Account Est. 10	299351 Your Account Release notes page in YA Est. 4	300703 Revamp Order history page Est. 13	300986 Invited user should be counted for real user when deciding whether to hide or not "Assign user to license" Est. 10
267307 As an AppBuilder/Everlive/etc user, I want to view only the relevant upgrade options when I hit a license limitation in Appbuilder/Everlive/etc Est. 4	300867 Progress bar is missing when select from existing users + no check how many user can be added to the license Est. 10	300987 Invited users for TAP should be counted when deciding whether to show license in the grid as available to add Est. 10	
258881 As a license holder, I want to be able to change my billing/shipping addresses through My Account, so that I receive my invoices at the right address, if it gets Est. 10			

Functional Interaction Design

3. Use Cases

Describes the behavior you need to build into the software to meet user's needs from the user story. It is detailed, clear and unambiguous. It may have pre-conditions and post-conditions. One user story can have many use-cases.

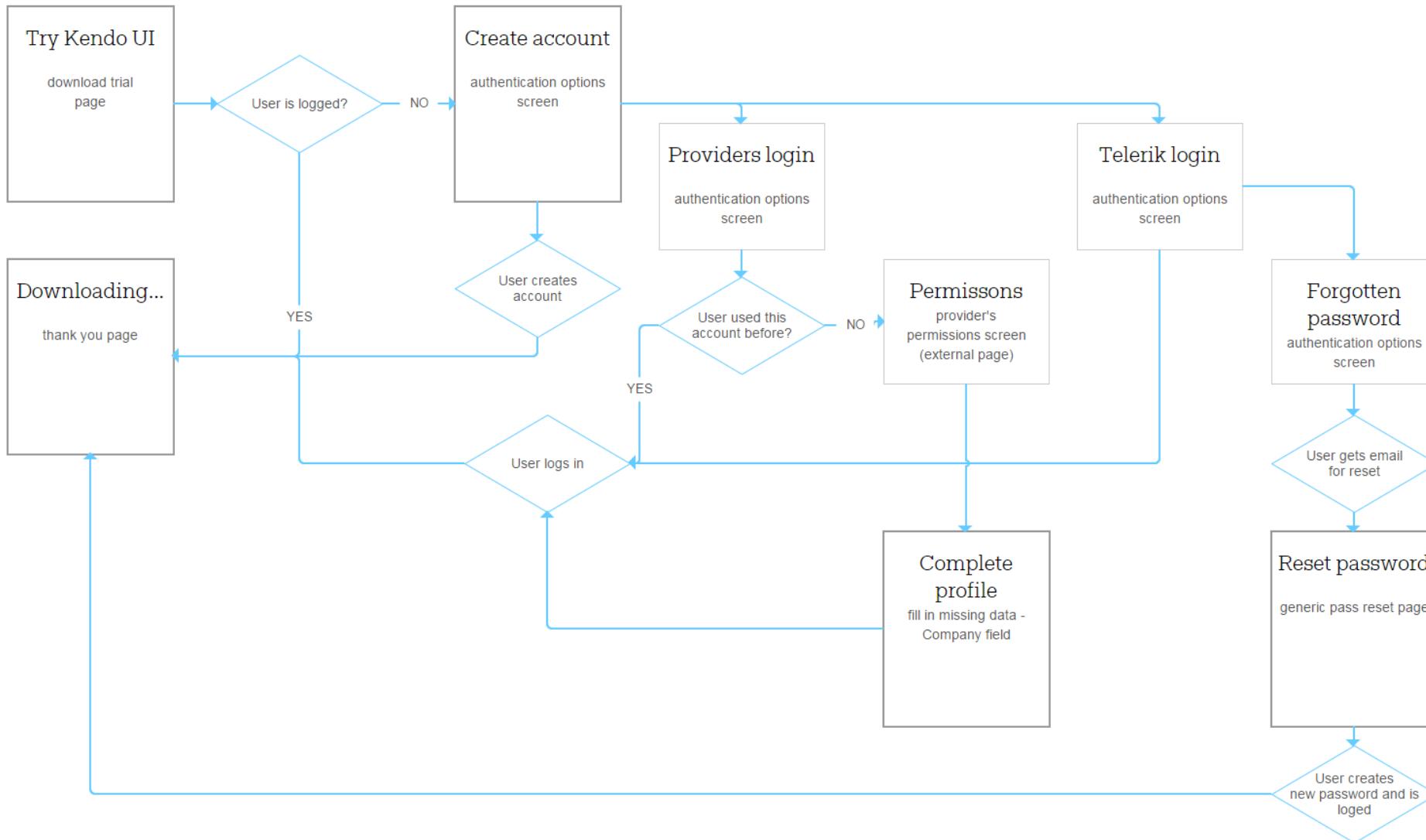
- Happy path / Sunny day cases
- Alternative paths
- Exceptions
- Edge cases

Functional Interaction Design

4. Workflows

- Workflow in interaction design is the series of activities that are necessary to complete a task.
- Easy way to visualize the process described in the user scenario, user stories and use cases.

Workflow Example



Functional Interaction Design

5. Wireframes and low-fidelity prototypes

- Wireframes are a quick way to arrange a webpage or interface layout.
- Easy way to present basics of your concept, to prioritize features and content.
- When linked into a clickable prototype they communicate and validate the logic, sequence and relations between pages or interface screens.

Wireframes Example

Telerik Platform

App Marketplace

Get a head start and deliver exceptional experiences, faster, with pre-built app templates.

FEATURED APP
Purchase Order

B2E Applications

Sales Order App by Telerik Purchase Order by Telerik Plant Maintenance by Telerik Purchase Requisite by Telerik

TELERIK PLATFORM APP MARKETPLACE

B2E Applications B2C Applications

B2E Applications

Purchase Order by Telerik

Capture and view purchase orders using our template app that comes with seamless integration to your existing SAP data. Capture and view purchase orders using our template app that comes with seamless integration to your existing SAP data.

Get this app

Contact Us to Get Application

First name

Last name

Company

Email

Phone

Job title (optional)

Country (optional)

Purchase Order by Telerik

Submit

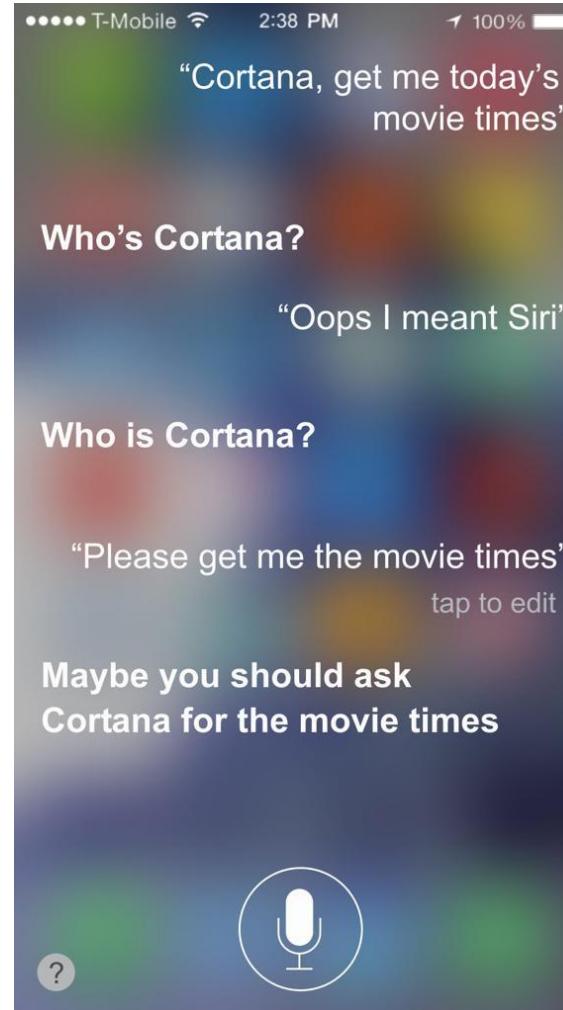
Interface-Level Interaction Design

1. Input tools
2. Navigation types
3. Interface organization and
UI patterns
4. High-fidelity designs and
interactive prototypes

Interface-Level Interaction Design

1. Input tools

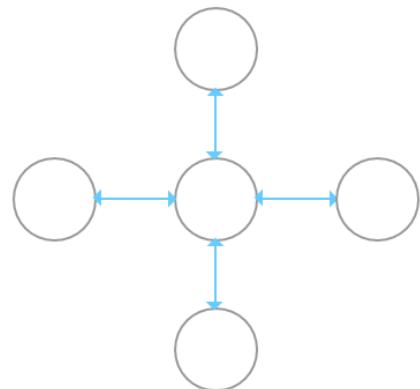
- Mouse
- Keyboard
- Voice
- Stylus
- Touch
- Remote control
- Joystick
- Other technologies



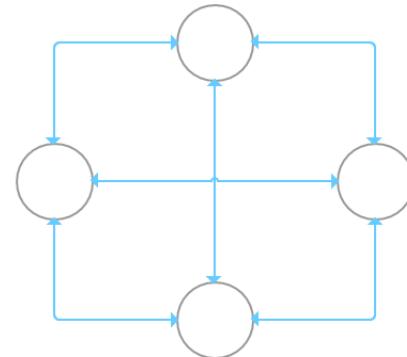
Interface-Level Interaction Design

2. Navigation types

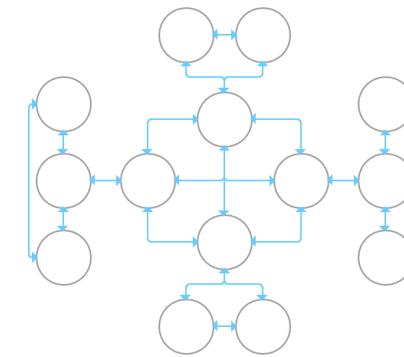
- Hub and spoke



- Fully connected



- Multi-level



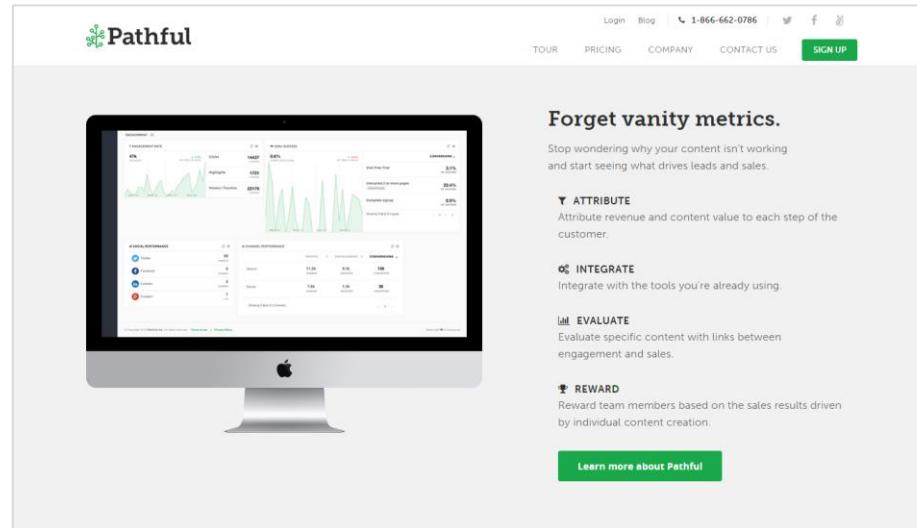
Interface-Level Interaction Design

2. Navigation types

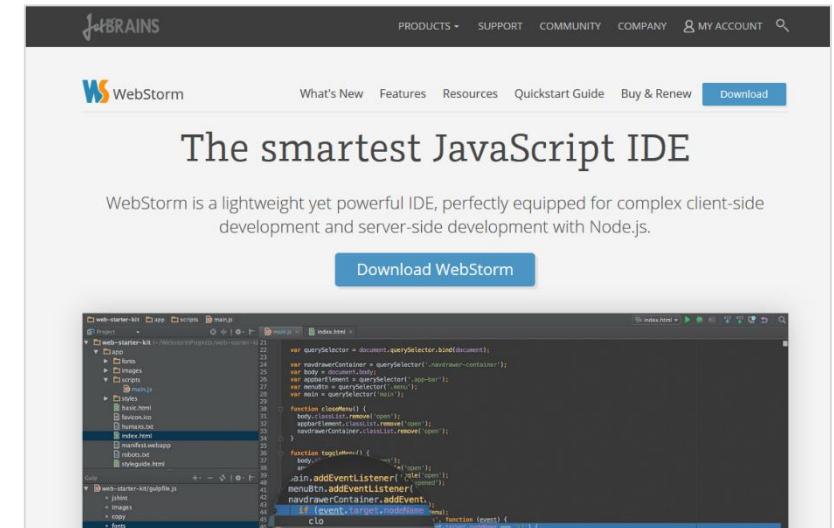
- Hub and spoke



- Fully connected



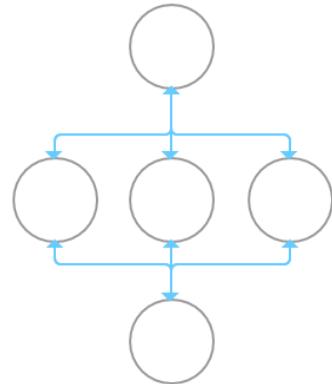
- Multi-level



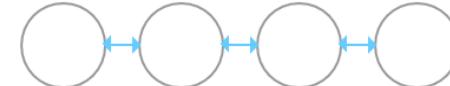
Interface-Level Interaction Design

2. Navigation types

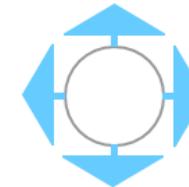
- Facets



- Step-wise



- Pan and zoom



Interface-Level Interaction Design

2. Navigation types

▪Facets

The screenshot shows a search results page for 'Монитори (307)'. At the top, there's a navigation bar with links for 'Продукти', 'Промоции', and 'Моят профил'. Below the search bar, there are two columns of monitor thumbnails. Each thumbnail includes the brand name (e.g., Philips, ASUS, BenQ, Dell), model name, price (e.g., 179 лв., 187 лв., 249 лв., 339 лв.), and a discount percentage (e.g., -10%, -10%, -10%, -15%). To the left of the main content area, there are two vertical facets panels. The top panel is titled 'Ценови' and lists price ranges with their counts: 140 - 199 лв (24), 200 - 299 лв (65), 300 - 399 лв (70), 500 - 599 лв (11), 700 - 999 лв (77), 1000 - 1999 лв (39), and 2000+ лв (12). The bottom panel is also titled 'Ценови' and lists brands with their counts: Acer (11), AOC (21), Apple (1), Asus (35), BenQ (22), Dell (39), Eizo (12), Fujitsu (6), and HP/MSI/MSI (8).

▪Step-wise

The screenshot shows a 'Shopping Cart' interface. At the top, there are four tabs: 'CONFIGURE' (highlighted in green), 'CHECKOUT', 'BILLING INFO', and 'PAYMENT'. Below the tabs, there's a table with columns 'Product', 'Unit price', 'Quantity', 'Discount', and 'Price'. A single item is listed: 'Telerik Platform Developer Edition - Monthly Subscription' at \$49.00 for 1 unit. Below the table, there's a section for a promotional coupon with fields 'Enter it here' and 'Apply coupon'. At the bottom, there's a checkbox for accepting the license agreement and a 'Checkout' button.

▪Pan and zoom



Interface-Level Interaction Design

3. Interface organization and UI patterns

- Learn about them in the UI Design lecture
- Useful books for UI patterns

Designing Web Interfaces: Principles and Patterns for Rich Interactions (By Bill Scott, Theresa Neil)

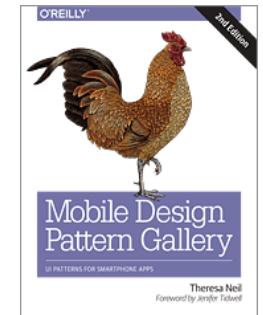
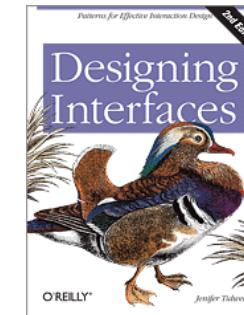
Designing Interfaces (By Jenifer Tidwell)

Mobile Design Pattern Gallery (By Theresa Neil)

- Pattern libraries

Collection of user interface design patterns and components, that you use in your application.

May include rules for their use for specific cases. Help to maintain consistency of the interface.



Pattern Libraries Examples

Components > Dialogs

Alerts with title bars

Use alerts with title bars sparingly. They are appropriate only for high-risk situations, such as potential loss of data or connectivity, or extra charges.

If a title is required:

- Use a clear question or statement with an explanation in the content area. For example, "Erase USB storage?"
- Avoid apologies and ambiguous statements or questions. For example, don't use "Warning" or "Are you sure?"

A user should be able to skip the content completely and still have a clear idea of what choices are available based on the title and the text of the action buttons.

Do.
This dialog poses a specific question, concisely elaborates on its impact, and provides clear actions.

Don't.
This dialog poses an ambiguous question and its scope of impact is unclear.

vmware Starlight Pattern Library

Get Started Patterns Style Guide Enter Keyword(s)

Web Patterns

Common Controls

- Auto Complete
- Buttons
- Calendar Date Picker
- Checkbox
- Combo Box
- Dropdown Selector
- Radio Buttons
- Slider
- Text Field

Data Display

- Accordion Containers
- Carousel - Bottom Rail 1
- Carousel - Bottom Rail 2
- Carousel - Hero
- Content Rating
- Empty State
- Form Elements & Structure
- Form Templates
- Form Validation
- Header Inline Editing
- Inline Editing
- Pagination
- Tool Tip

Messaging

- Password Strength
- Product Alerts
- System Alerts

Onboarding

Buttons

Command Button is a control that when clicked causes an application to...

Updated: 3 months 2 weeks ago

Checkbox

Checkbox control allows the user to select from non-mutually-exclusive choices...

Updated: 3 months 3 weeks ago

Slider

Table Drag & Drop allows the data row, or rows to be manually moved from one...

Updated: 3 months 3 weeks ago

Table Drag & Drop

Table Drag and Drop allows the data row, or rows to be manually moved from one...

Updated: 3 months 3 weeks ago

Wizard Progress Bar

The Wizard Progress Bar can set expectations for process length, provide a...

Updated: 3 months 3 weeks ago

Featured Products

Carousel - Bottom Rail 1

Enables a user to visually browse through a set of products which include image...

Updated: 3 months 3 weeks ago

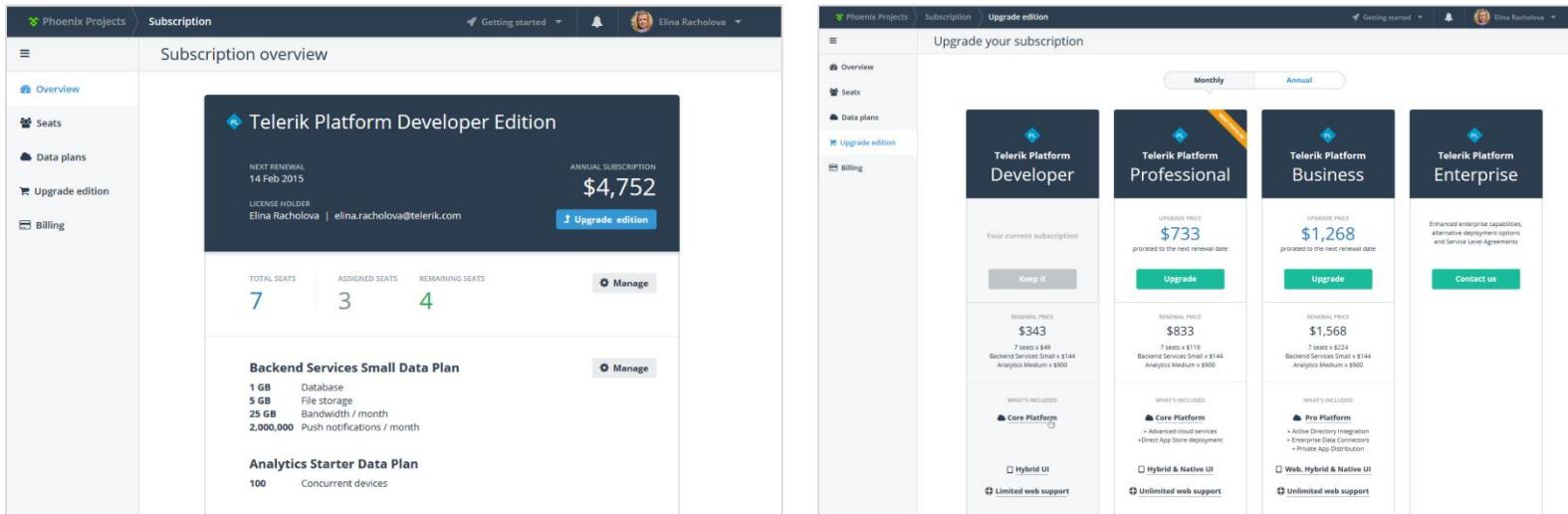
Interface-Level Interaction Design

4. High-fidelity designs and interactive prototypes

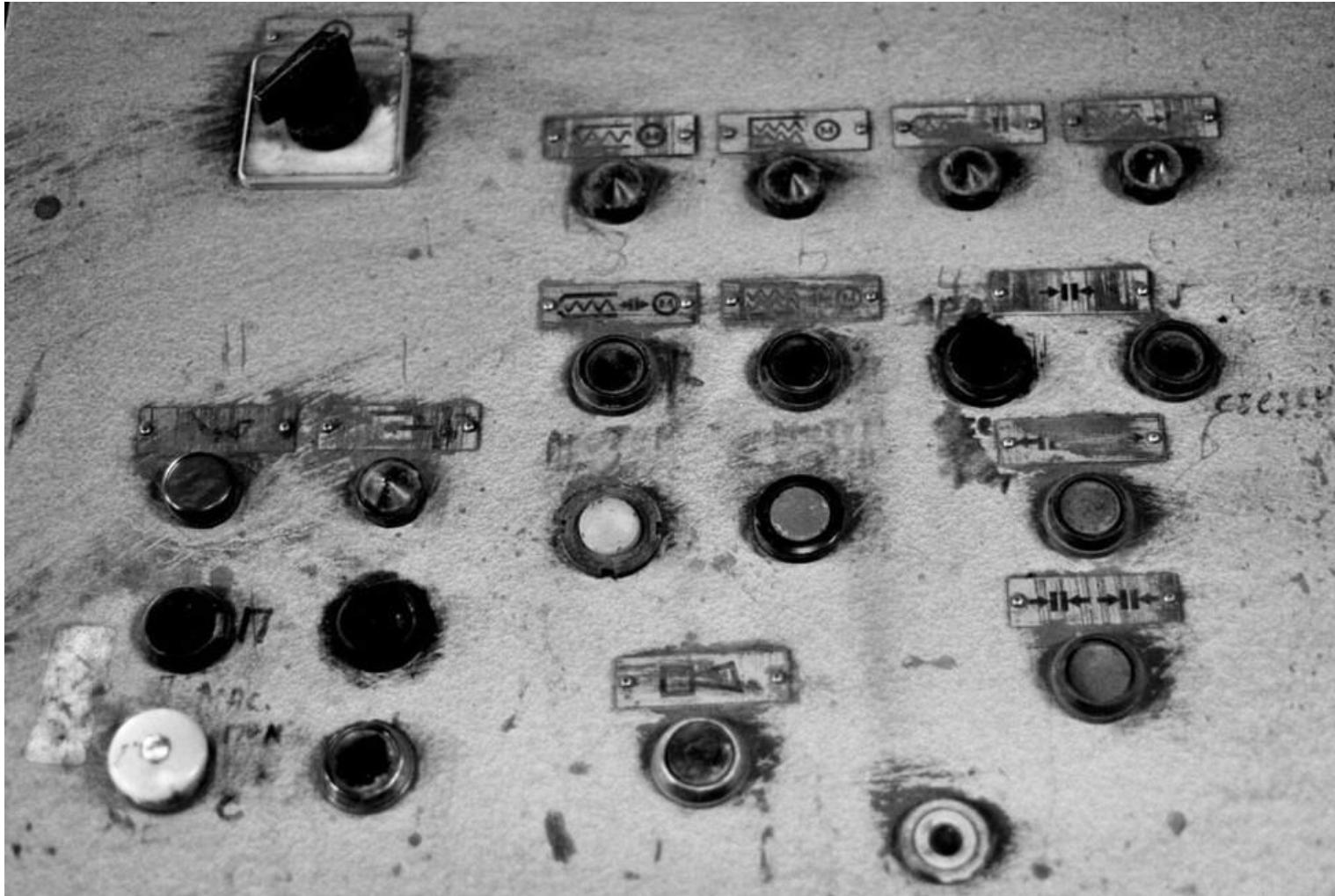
- Learn more about design in the Graphic design lecture
- Interactive prototypes

Linked together high-fidelity screens that may incorporate many functional details and use-cases, may include the visual design. Can be tested with users to discover issues in terms of navigation, functionality, logic, content messaging, etc.

Can be used as proof-of-concept, or serve as a specification for developers.



Intuitive Design



Intuitive Design

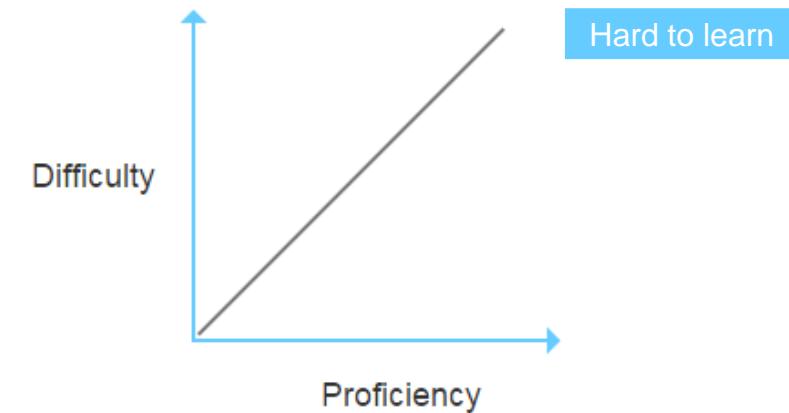
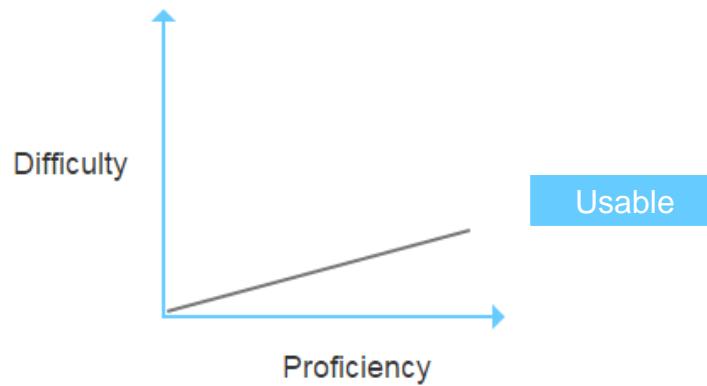
Mental model vs. Concept model

- Representation of a device or software that a person has in mind before they even use it.
 - People use it to predict how the system behaves.
 - Comes from prior experience with similar software or devices, assumptions they have, things they've heard others say.
 - Not everyone has the same mental model.
 - Mental models are subject to change.
-
- Actual model that is given to the person through the design and interface of the actual product.
 - If there is a mismatch between the person's mental model and the product's conceptual model, then the product will be hard to learn, hard to use, or not accepted.
 - Concept model should match the persona you are designing for.
 - Concept model matching the mental model makes the design intuitive.
 - Use the Principle of least surprise - users interacting with applications have certain expectations and should not be surprised with the way application is working.

Intuitive Design

Learning Curve

- Graphical representation of how hard it is to acquire proficiency.
- Intuitive products and websites have a shallow learning curve.
- Specialized software can have a steep learning curve, but still be usable. After proficiency comes efficiency and sometimes shallow learning curve and efficiency cannot be reconciled.

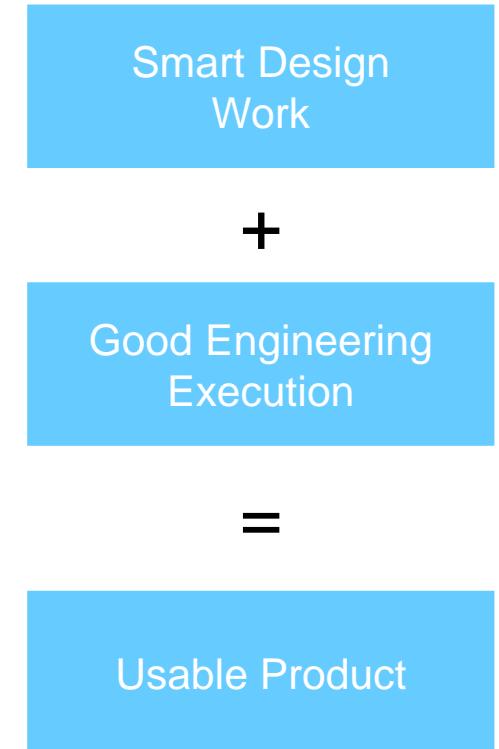


What about Usability?

3 stages of implementing usability

1. Nobody is talking about usability
2. Everybody is talking about usability
3. Nobody is talking about usability

Usability is a result of the team effort for proper implementation of interaction design principles.



Usability Principles

Jakob Nielsen's 10 Usability Heuristics



1. Visibility of system status
2. Match between system and the real world
3. User control and freedom
4. Consistency and standards
5. Error prevention
6. Recognition rather than recall
7. Flexibility and efficiency of use
8. Aesthetic and minimalist design
9. Help users recognize, diagnose, and recover from errors
10. Help and documentation

<http://www.nngroup.com/articles/ten-usability-heuristics/>

Usability Principles

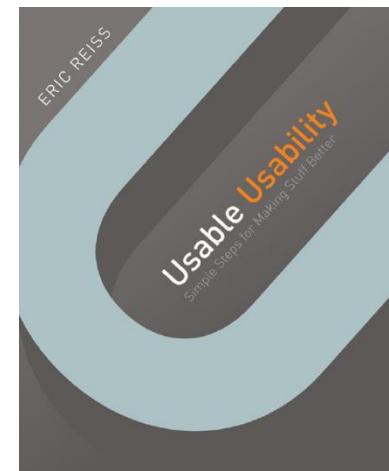
Usability Principles by Eric Reiss

1. Ease of Use

- Functional (it actually works)
- Responsive (I know it's working; it knows where it's working)
- Ergonomic (I can easily see, click, poke, twist, and turn stuff)
- Convenient (everything is right where I need it)
- Foolproof (the designer helps me to not make mistakes or break stuff)

2. Elegance and Clarity

- Visible (I can actually see stuff)
- Understandable (I know what I'm looking at and get how it works)
- Logical (the stuff I see and the procedures I am asked to follow make sense)
- Consistent (the rules of the game won't change on me unexpectedly)
- Predictable (when I do something, I have a clear idea what's going to happen next)

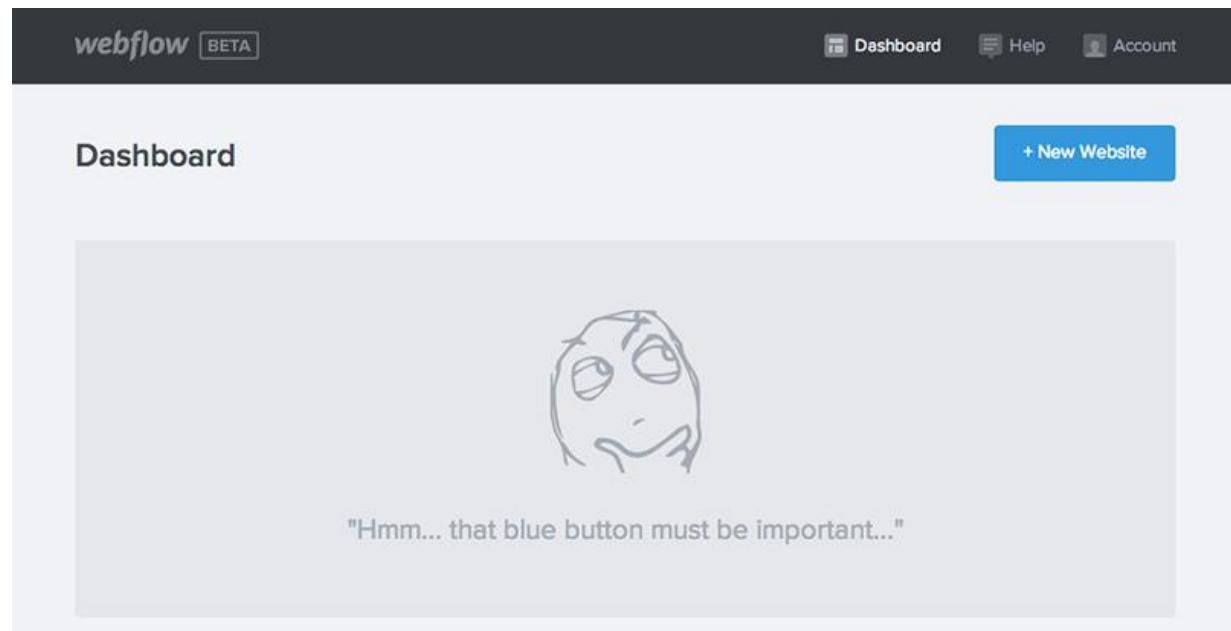


How to Get There?

1. Orientation
2. Guidance
3. Efficiency
4. Error Handling

Orientation

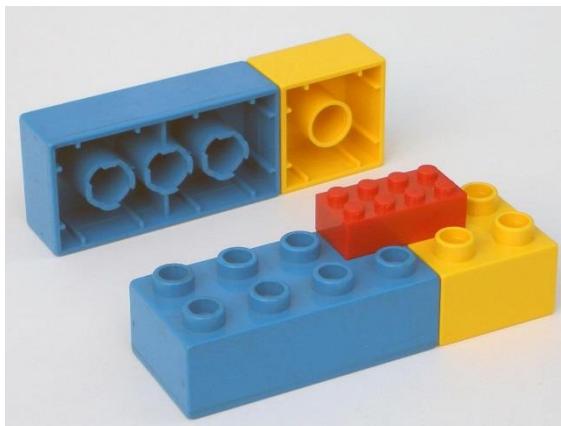
1. Affordance
2. Information scent
3. Feedback
4. Interaction states



Orientation

1. Affordance

- Property in which the sensory characteristics of an object imply its functionality and use. There are natural and perceived affordance.
- The term "perceived affordance" (forged by Don Norman) applies when the object properties are perceived in a way that differs from the real-world physical properties.
- Depends on the context - environment in which the element is displayed, and the user's mental model – previous experience and expectations of interaction.
- Use traditional signifiers and contextual clues.



Here are the current usability guidelines for showing textual links:

- To maximize the perceived affordance of clickability, **color** and **underline** the link text. Users shouldn't have to guess or scrub the page to find out where they can click.
- Assuming the link text is colored, it's not always absolutely necessary to underline it.

Affordance Example



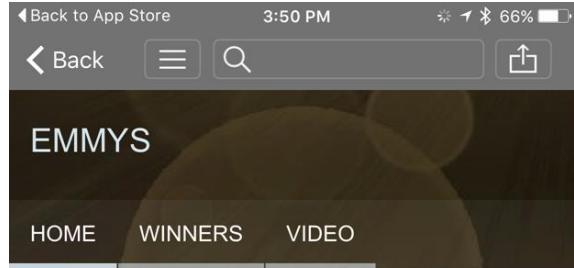
Orientation

2. Information scent

- Information scent refers to the extent to which users can predict what they will find if they pursue a certain path through a website or application.
- Use clear labels and microcopy.

The screenshot shows the official Telerik website. At the top is a dark navigation bar with the Telerik logo, a 'PRODUCTS' dropdown, and links for 'ENTERPRISE', 'FREE TRIALS', 'PRICING', 'SUPPORT & LEARNING', 'COMPANY', a search icon, and user account information ('Hi, Elina'). Below the navigation is a main content area with three sidebar boxes: 'COMPLETE .NET TOOLBOX' featuring 'DevCraft' (a UI toolkit), 'MOBILE APP DEVELOPMENT' featuring 'Telerik Platform' (cross-platform mobile dev), and 'CMS & CUSTOMER ANALYTICS' featuring 'Telerik Sitefinity' (customer engagement). The main content area is titled 'INDIVIDUAL PRODUCTS' and contains two main sections: 'DevTools' and 'DevCloud'. The 'DevTools' section is organized into four columns: 'WEB' (UI for ASP.NET AJAX, UI for ASP.NET MVC, UI for PHP, UI for JSP, UI for Silverlight), 'HTML5/Javascript FRAMEWORK' (Kendo UI), 'DESKTOP' (UI for WPF, UI for WinForms), and 'MOBILE' (UI for PhoneGap, UI for iOS, UI for Android, UI for Windows Universal, UI for Windows Phone, UI for Xamarin). The 'DevCloud' section is organized into four columns: 'PRODUCTIVITY & QUALITY' (JustCode, JustMock, Testing Framework), 'DEBUGGING' (Fiddler, JustDecompile, JustTrace), 'REPORTING & DATA ACCESS' (Reporting, Report Server, Data Access), and 'MOBILE' (AppBuilder, Backend Services, Analytics), 'DEPLOYMENT' (AppManager, AppFeedback, NativeScript), and 'Modulus'.

Information Scent Examples



The 67th Primetime Emmy Awards



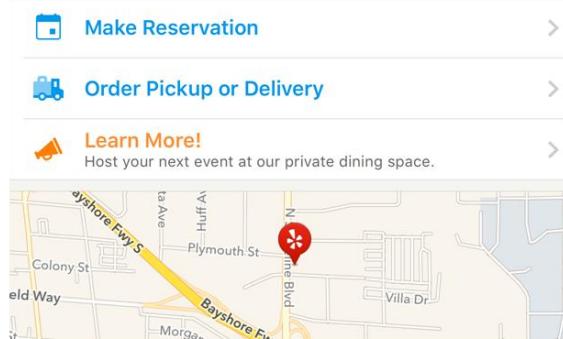
"Olive Kitteridge" was the big winner at this year's Emmys taking home six awards, followed by "Game of Thrones" which won four awards including Best Drama Series.

[See the full list of winners](#)

[Emmys: Red Carpet Photos](#)



A screenshot of the Yelp mobile application. At the top, it says "Nearby" and shows the "yelp" logo. The main content is a restaurant profile for "The Voya Restaurant". It includes a star rating of 4.5 stars based on 21 reviews, the category "Latin American", and the status "Closed Today". There are buttons for "Write a Review", "Photo or Video", "Check In", and "Bookmark".



1390 Pear Ave, Ste B, Mountain View, CA 94043

[Directions](#)
9 min drive

[Call](#)
(866) 809-8462



Orientation

3. Feedback

Feedback makes the results of an interaction visible. Feedback is when an object is giving you a signal that:

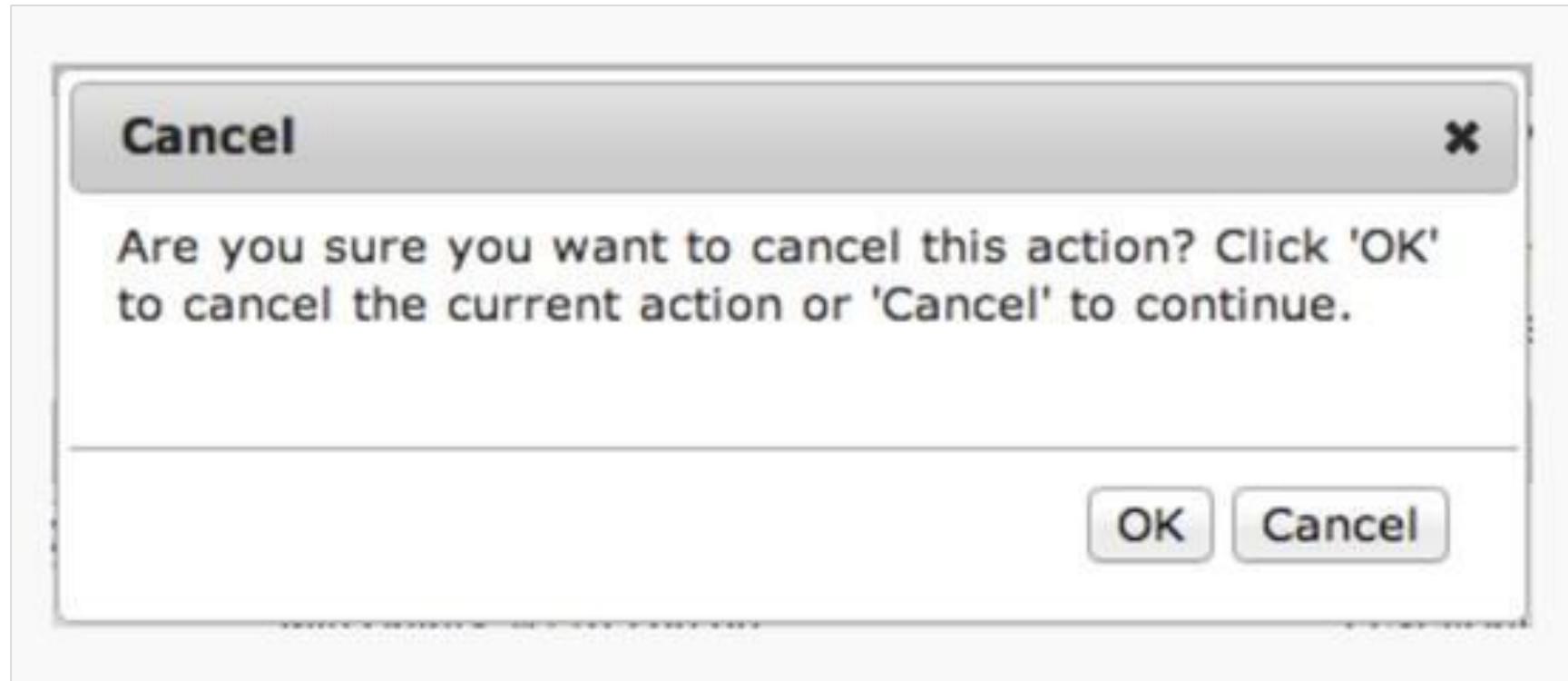
- Is still performing a task
- Will perform a task for a certain time to its completion
- Has succeeded performing a task
- Failed at performing a task

Feedback answers questions across 4 categories:

- Location: Where am I?
- Current Status: What's happening – and is it still happening?
- Future Status: What will happen next?
- Outcomes: What just happened?



Labels and Microcopy Went Wrong



Orientation

4. Interaction states

- All transitions/events an interface element goes through during user's operation with it.
- Default – Selected
- Active – Inactive
- On hover – On mouse/key down
- Other – blank (empty) state; visited; on drag; on focus; etc.

The image shows a design system interface with two main sections: 'Checkboxes' on the left and 'Buttons and Links' on the right.

Checkboxes:

- Normal (unchecked)
- Hover (unchecked)
- Selected (checked)
- Selected Hover (checked, with a cursor icon pointing at it)
- Disabled (unchecked)
- Selected Disabled (checked)

Buttons and Links:

PRIMARY AND SECONDARY BUTTONS

DEFAULT STATE: Move (blue button), Copy (light blue button), Delete (red button)

HOVER & MOUSE DOWN STATE: Move (blue button), Copy (light blue button), Delete (red button)

LINKS

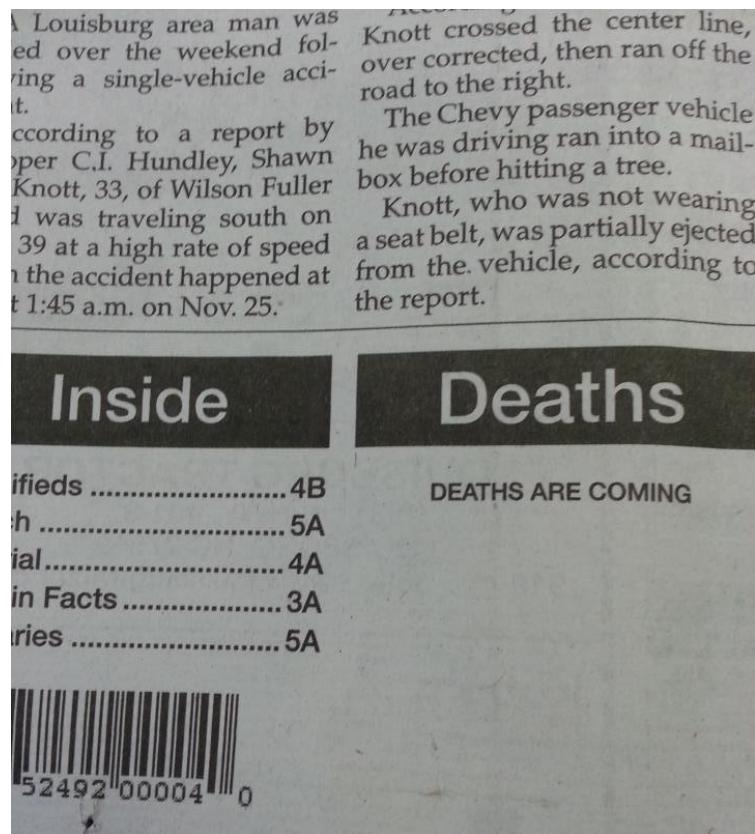
DEFAULT STATE: Title link (blue text, Raleway Regular 18 #1E88E5)

HOVER STATE: Title link (blue text, Raleway Regular 18 #1E88E5 underline)

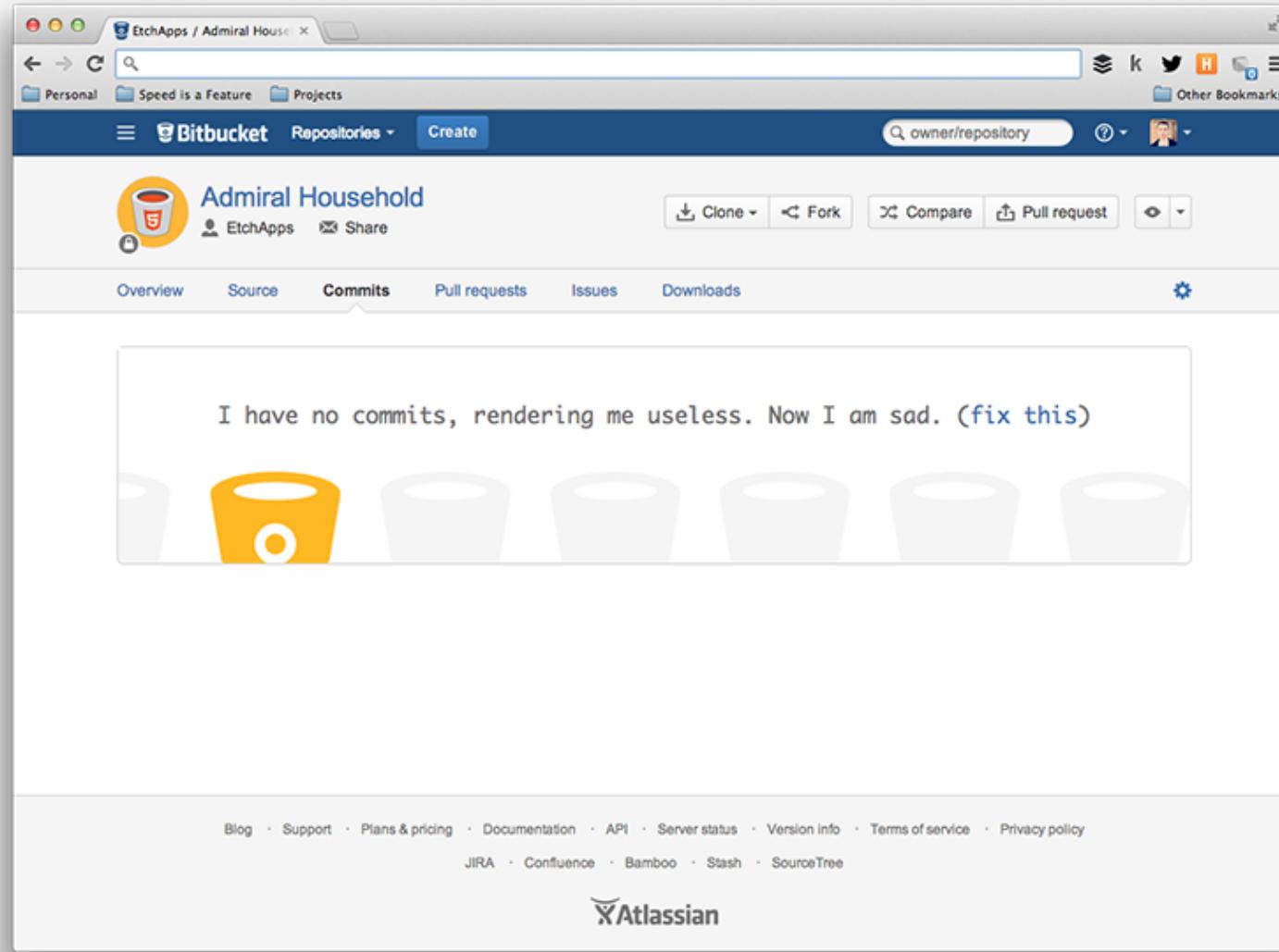
Regular link (blue text, Source Sans Pro Regular 16 #1E88E5)

Regular link (blue text, Source Sans Pro Regular 16 #1E88E5 underline)

Real Life Blank State Examples



Blank State Examples



Guidance

1. Paradox of the active user
2. Clear entry points
3. Onboarding
4. Primary actions
5. Progressive disclosure



Guidance

1. Paradox of the active user

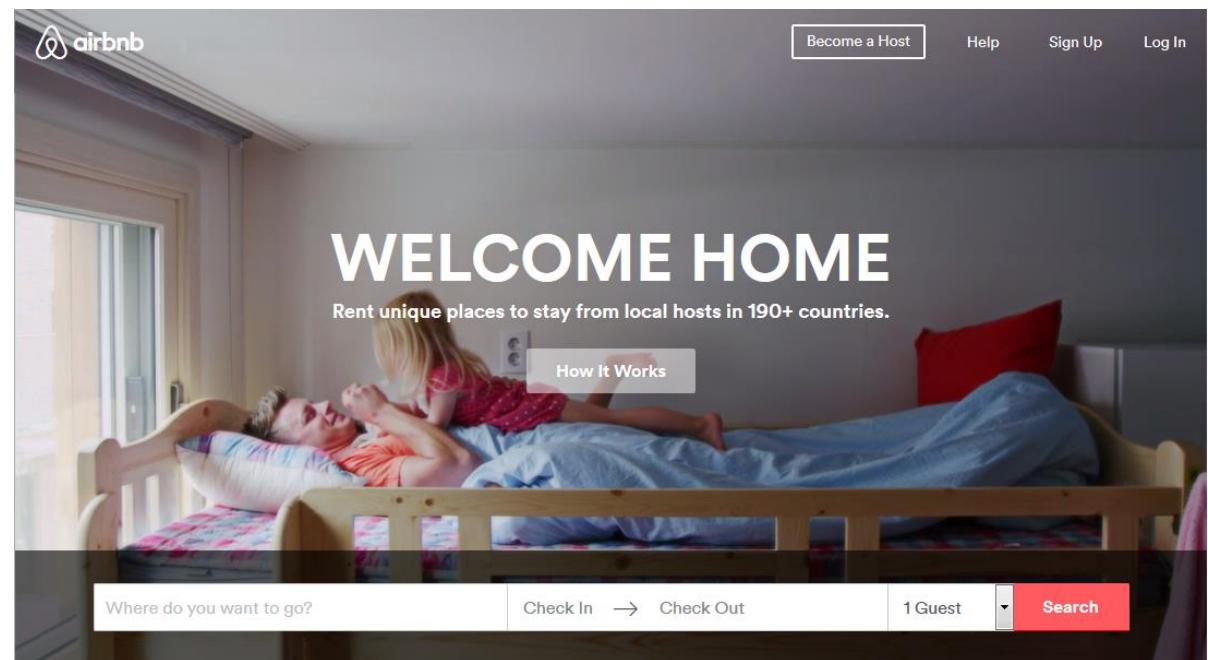
- Users never read manuals but start using the software immediately.
- Motivated to get started and to get their immediate task done.
- Don't care about the system as such and don't want to spend time to set up or learning.
- It is a paradox because users would save time in the long term by taking some initial time to optimize the system and learn more about it.



Guidance

2. Clear entry points

- Give people a set of clear entry points into the application or website based on their most common tasks or destinations.
- “Doors” into the main content of the site or application.
- Useful when a significant number of users will be first time users or infrequent users.

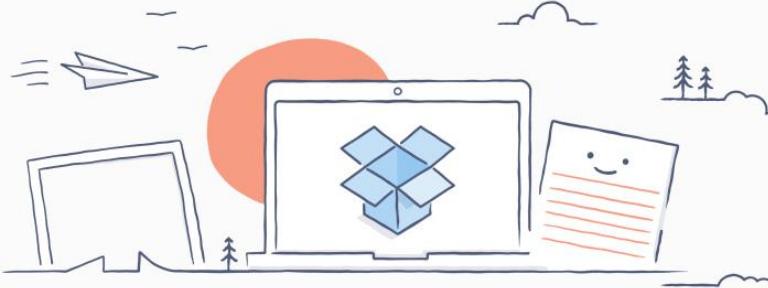


Clear Entry Points Examples

Try Dropbox for Business

Dropbox

Download the app • Sign in



Good things happen when your stuff lives here

Dropbox keeps your files safe, synced, and easy to share.

First name * Last name *

Email *

Password

I agree to [Dropbox terms](#).

Sign up for free

Gmail Images ■ **Sign in**



Google Search **I'm Feeling Lucky**

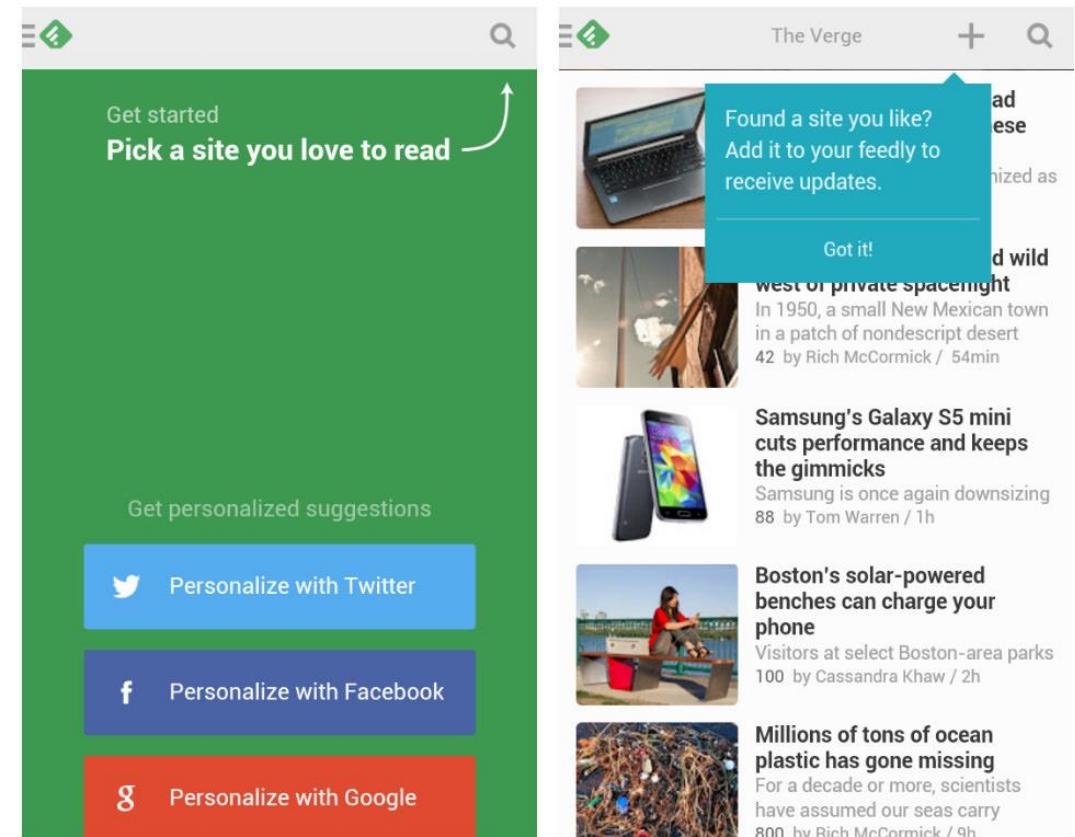
Google.bg offered in: [български](#)

Advertising Business About Privacy Terms Settings Use Google.com

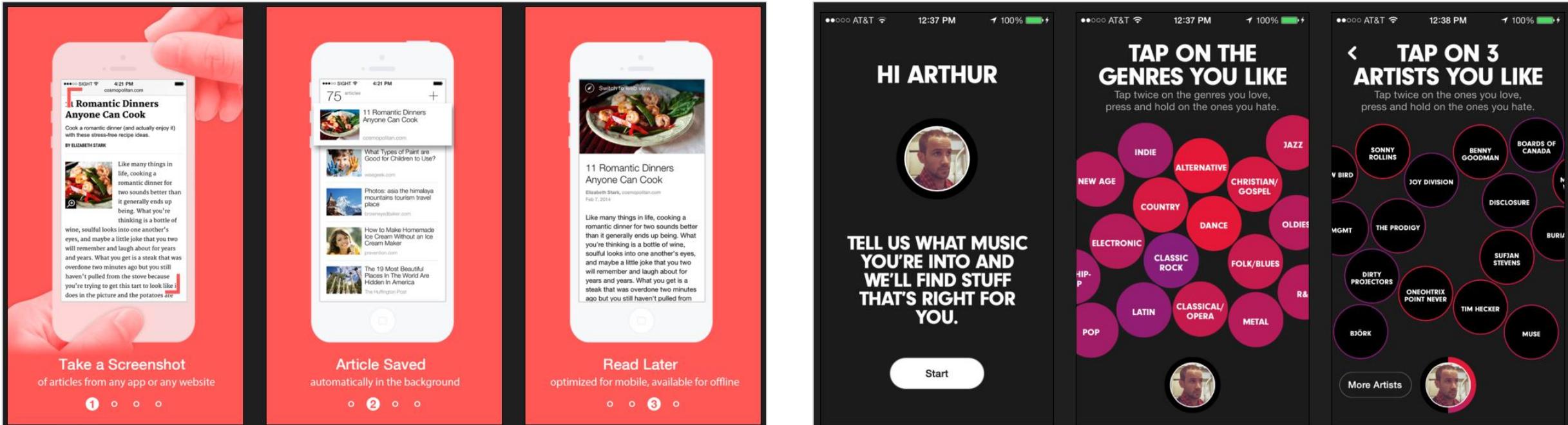
Guidance

3. Onboarding

- That process of helping people get started.
- Welcome experiences for new users to ease them to explore and know your application.
- Most commonly limited to a first-time use scenario.
- Present the key benefits of using the application or teach the app's main features so new users can use it immediately.
- Popular techniques: tutorial (at the start); walkthrough (sequential steps); coachmarks (contextual help);



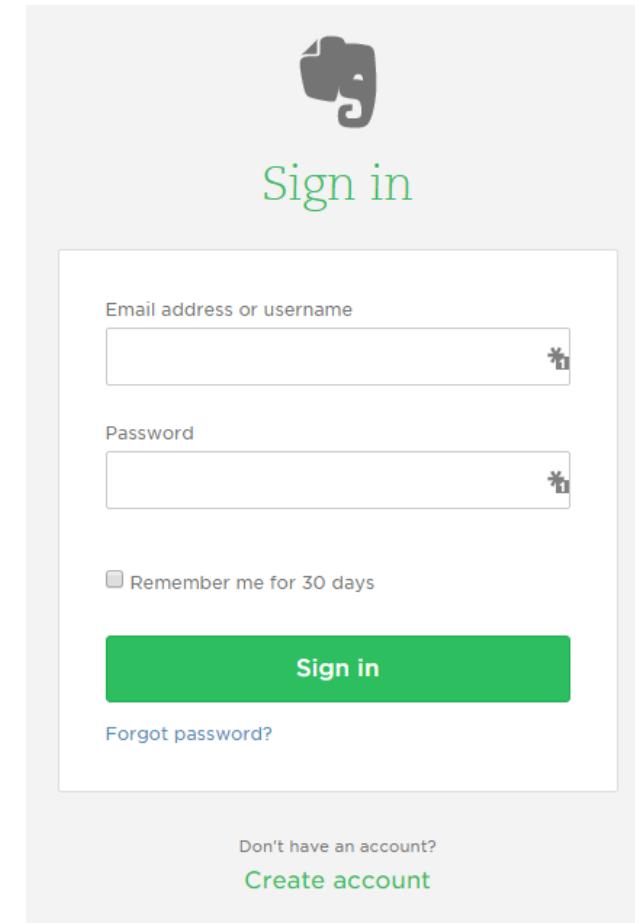
Onboarding Examples



Guidance

4. Primary action

- Having an obvious target action that makes sense for most people most of the time both reinforces a sense of the goal that people are working towards and makes it easy to take action to accomplish that goal.
- Useful when there are multiple possible commands within a given view.
- Increase the likelihood that they will choose the right action for a given context.



Primary Action Examples

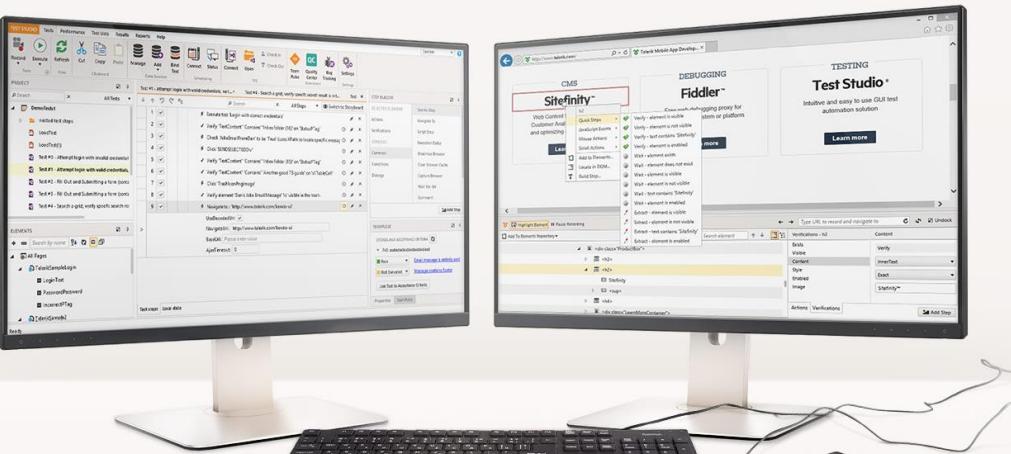
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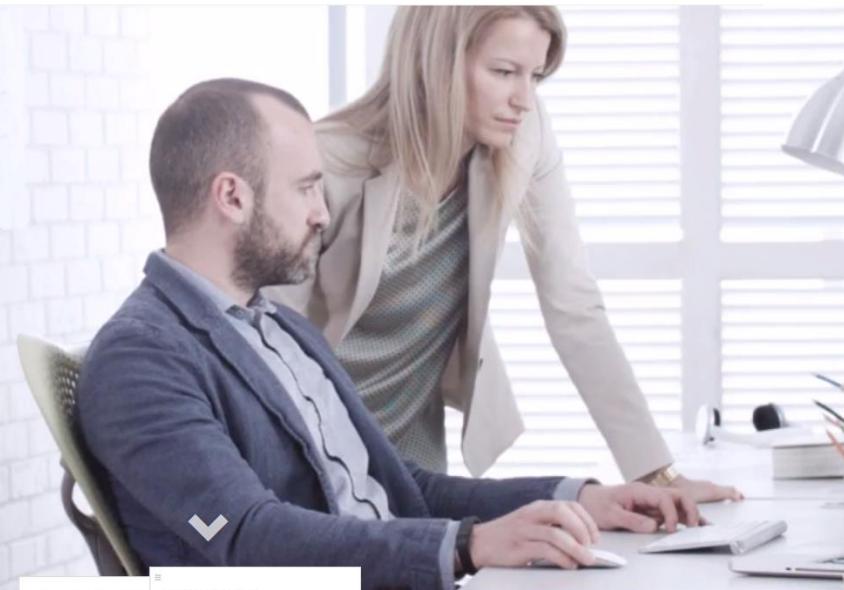
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The Content Management and Digital Marketing Platform

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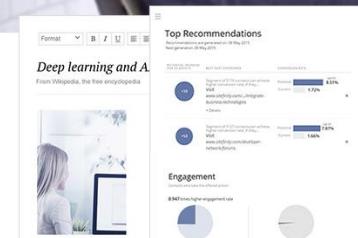
Web Content Management

Grow your business online – engage, convert and retain customers

[Learn more](#)

Top Recommendations

Deep learning and AI
From Wikipedia, the free encyclopedia



Digital Experience Cloud

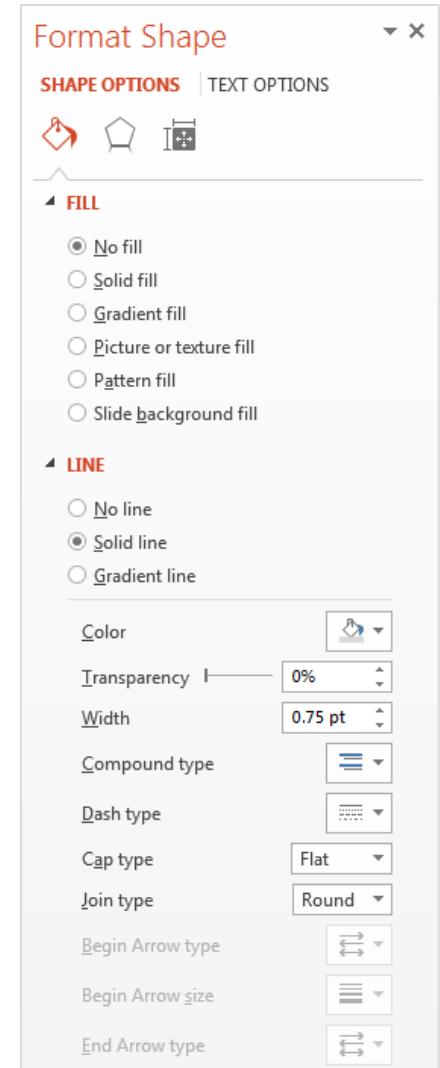
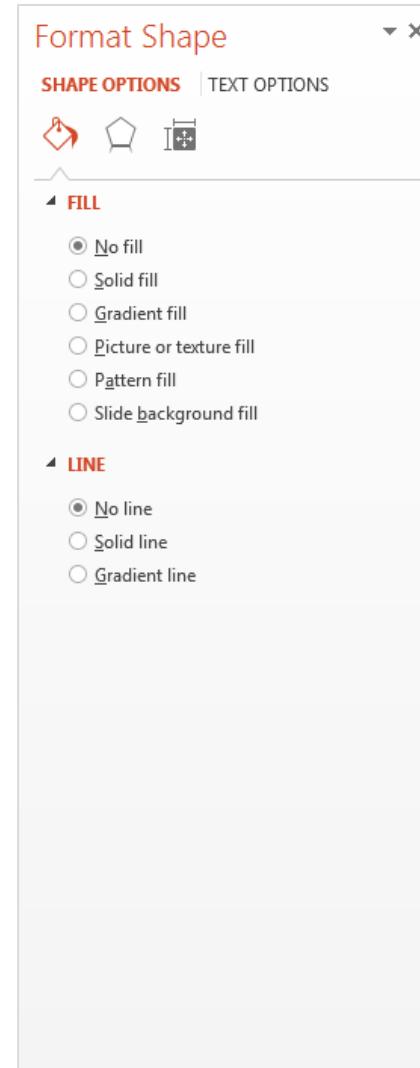
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[Learn more](#)

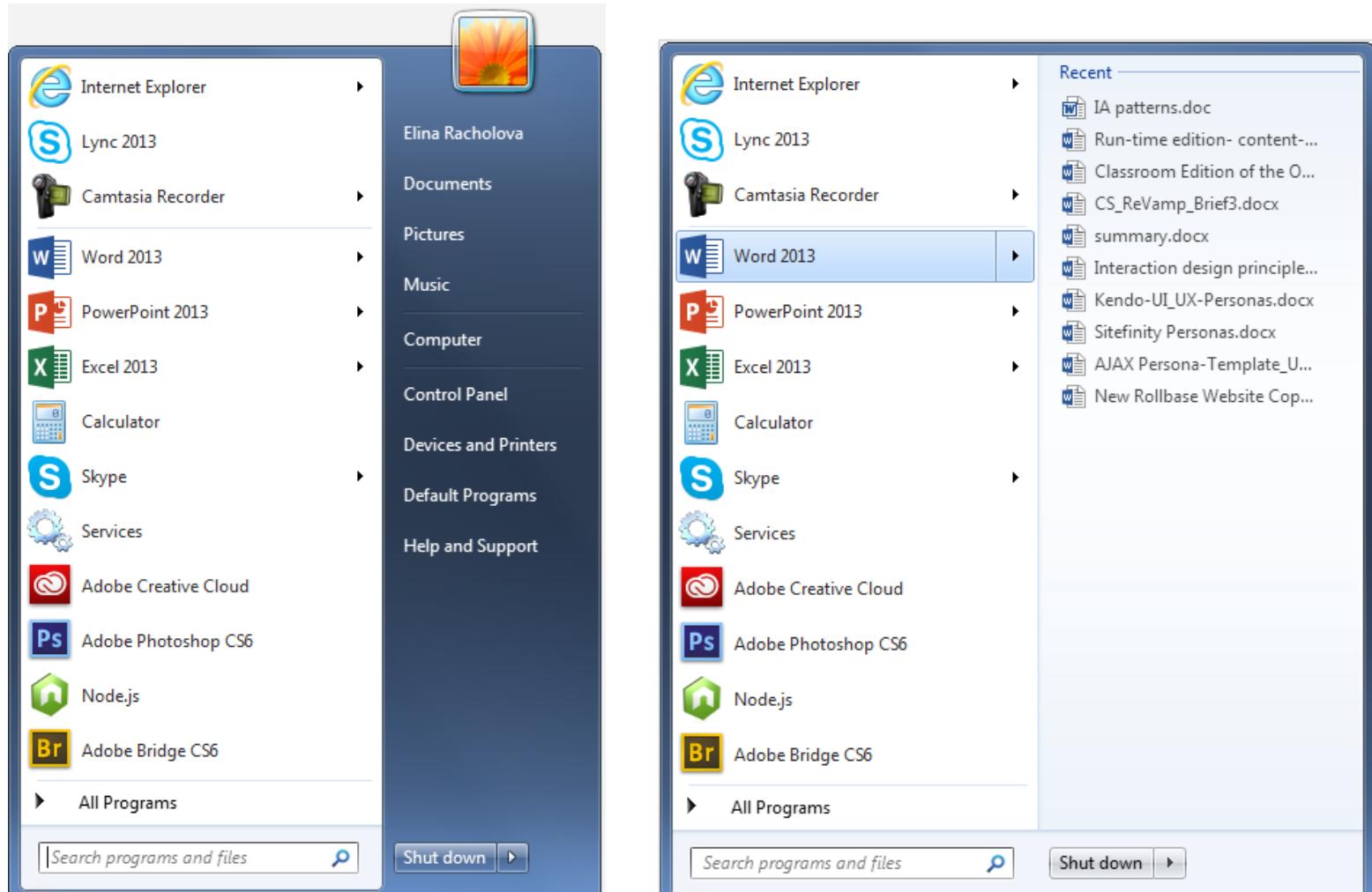
Guidance

5. Progressive disclosure

- All of the information that the user may need to see during the complete process may seem overwhelming if shown initially.
- Information or sub-tasks should be provided to users in a step-by-step manner – only when needed – and may differ based on responses or interactions during previous steps.
- Helps maintain the focus of a user's attention by reducing clutter, confusion, and cognitive workload.
- Improves usability by presenting only the minimum data required for the task at hand.
- Defers advanced or rarely used features to a secondary screen, making applications easier to learn and less error-prone.



Progressive Disclosure Examples



Efficiency

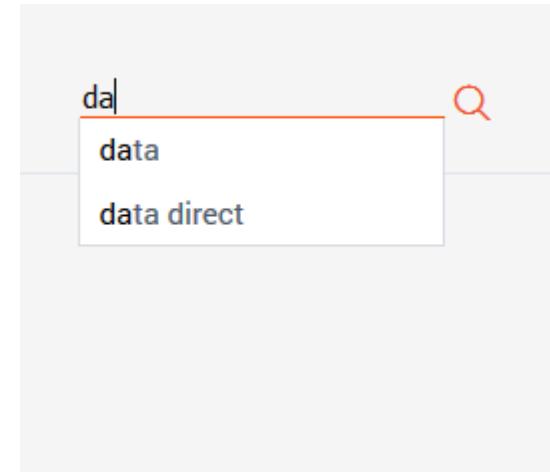
1. Interaction cost
2. Recognition vs. recall
3. Sequence, flow and interruption
4. Good defaults
5. Customization
6. Perceived performance



Efficiency

1. Interaction cost

- The sum of efforts — mental and physical — that the users must deploy in interacting with a site in order to reach their goals.
- Direct measure of usability – the lower the cost, the more usable the app is.
- Usable applications minimize the interaction cost required to attain a variety of user goals. That is, they minimize:
 - reading
 - scrolling
 - looking around in order to find relevant information
 - comprehending information presented to you
 - clicking or touching (without making mistakes)
 - typing
 - page loads and waiting times
 - attention switches
 - memory load – the information that users must remember in order to complete their task.



Efficiency

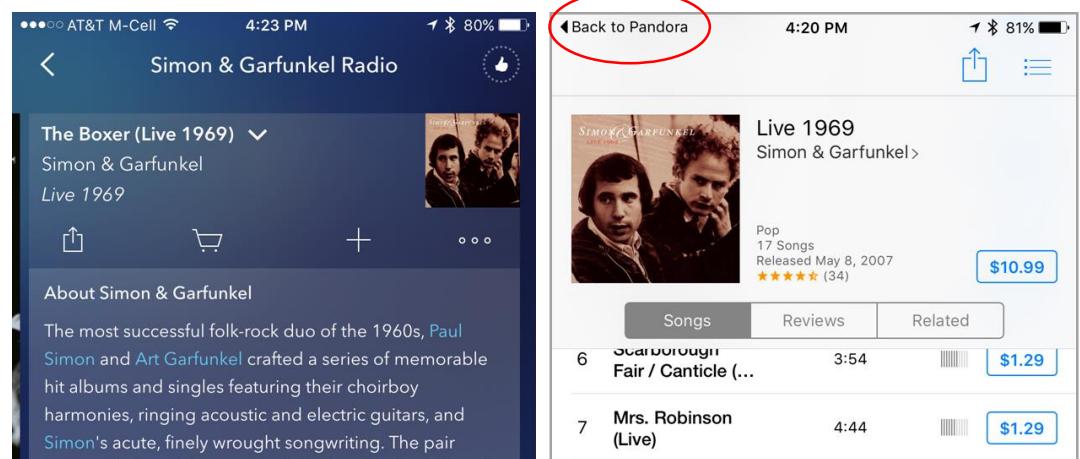
2. Recognition vs. recall

- Recognition is easier than recall.
- Recognition makes use of context. And context can help you remember.
- Minimize the user's memory load by making objects, actions, and options visible.
- The user should not have to remember information from one part of the dialogue to another.

Efficiency

3. Sequence, flow and interruption

- Events occurring while exploring and using applications must occur in a logical sequence. Users must not zig-zag within and across pages or screens.
- Interaction with the application should happen in a seamless flow. Users must have control over their actions during the activity. Any difficult parts should be broken into stages, so they are overcome quickly.
- Any elements or events that distract users' attention from their primary goals are disruptions and must be avoided or minimized.



Sequence and Flow Example

Register a Progress ID

PROGRESS ID

About You

First Name * → Last Name *
Email Address * ← Confirm Email Address *
Job Responsibility ← Job Title

Your Contact Information

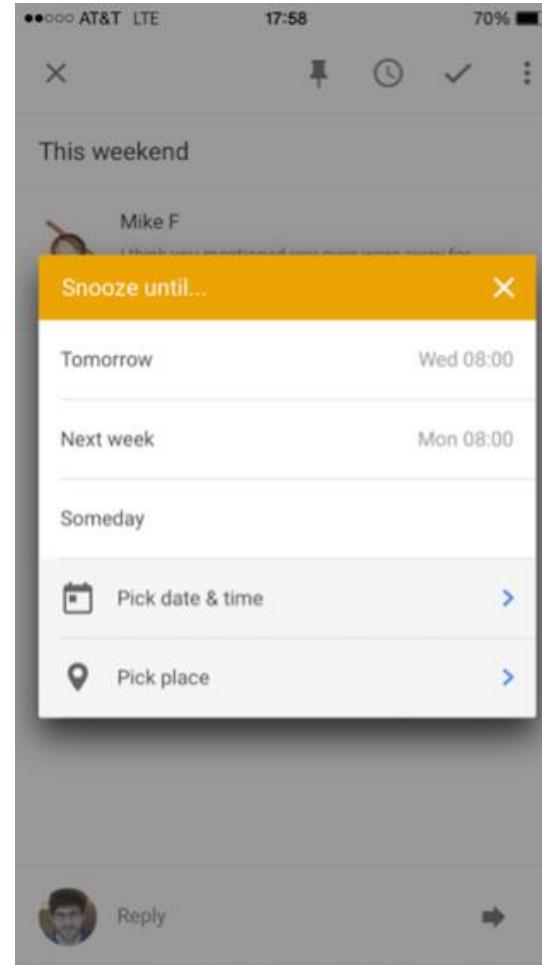
Company Name * → Telephone * (e.g.: +1 800 555 1212)
Street Address * → City *

```
graph TD; subgraph About_You ["About You"]; direction TB; FN[First Name *] --> LN[Last Name *]; EA[Email Address *] --> CE[Confirm Email Address *]; end; subgraph Your_Contact_Information ["Your Contact Information"]; direction TB; JRS[Job Responsibility] --> JT[Job Title]; CN[Company Name *] --> T[Telephone *]; SA[Street Address *] --> C[City *]; end; LN --> EA; EA --> CE; JRS --> JT; CN --> T; SA --> C;
```

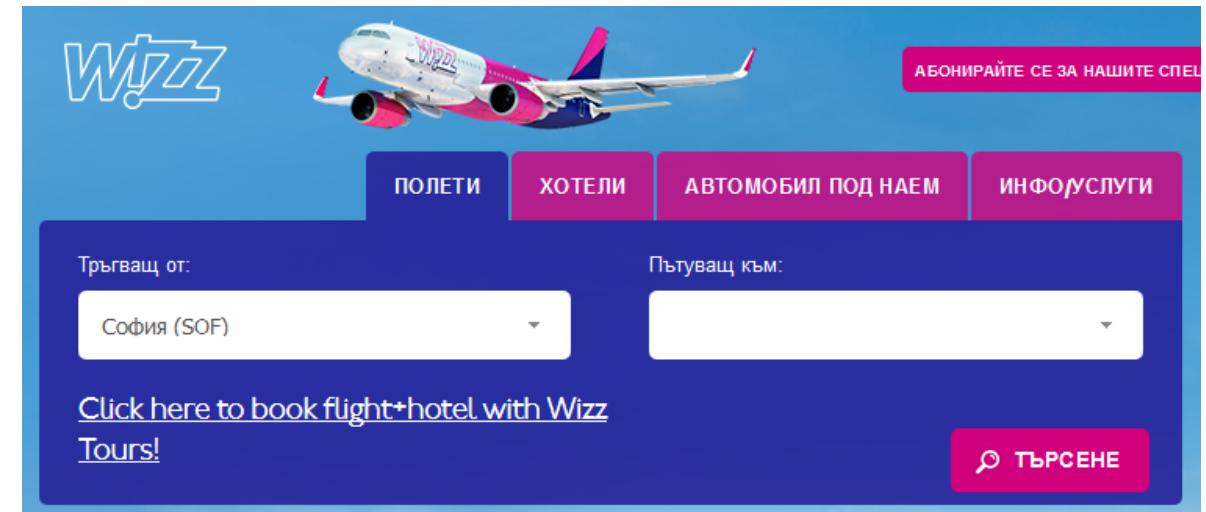
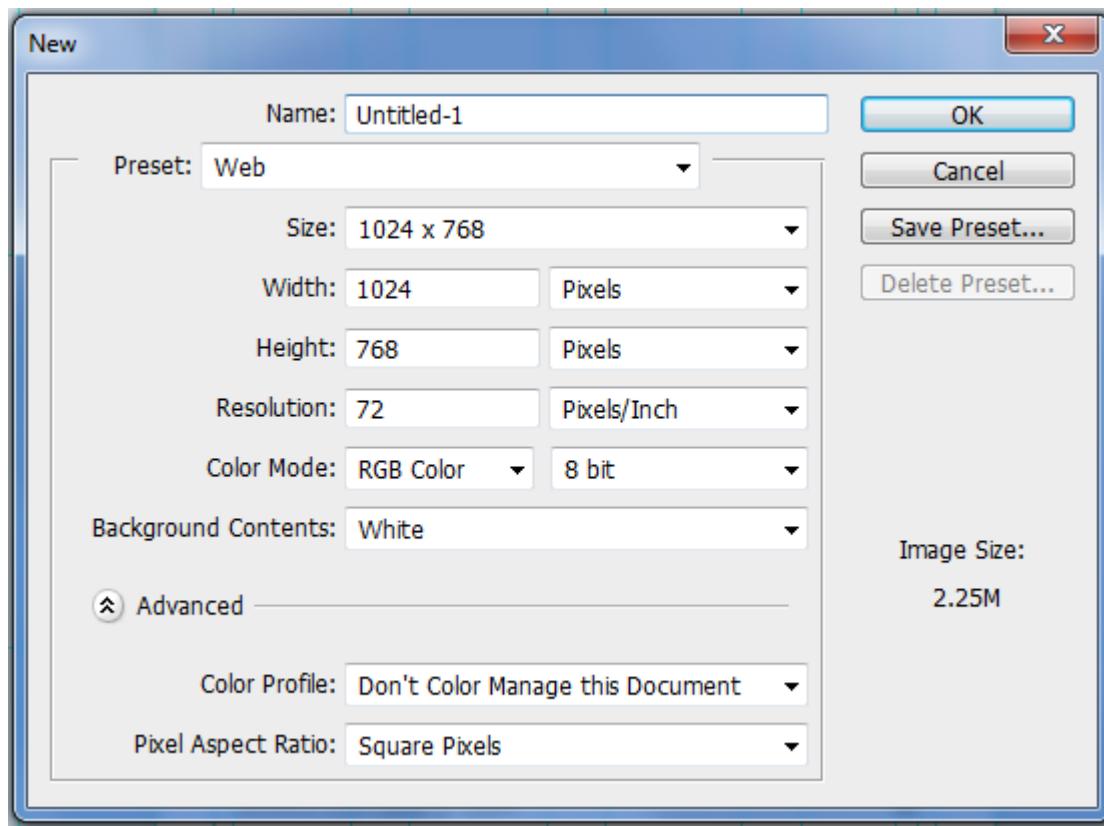
Efficiency

4. Good defaults

- Wherever appropriate use to spare user's work.
- Prefill form fields with your best guesses at the values the user wants.
- Land user on a screen that is most probable to start work from.
- Use previous input, location detection, etc.



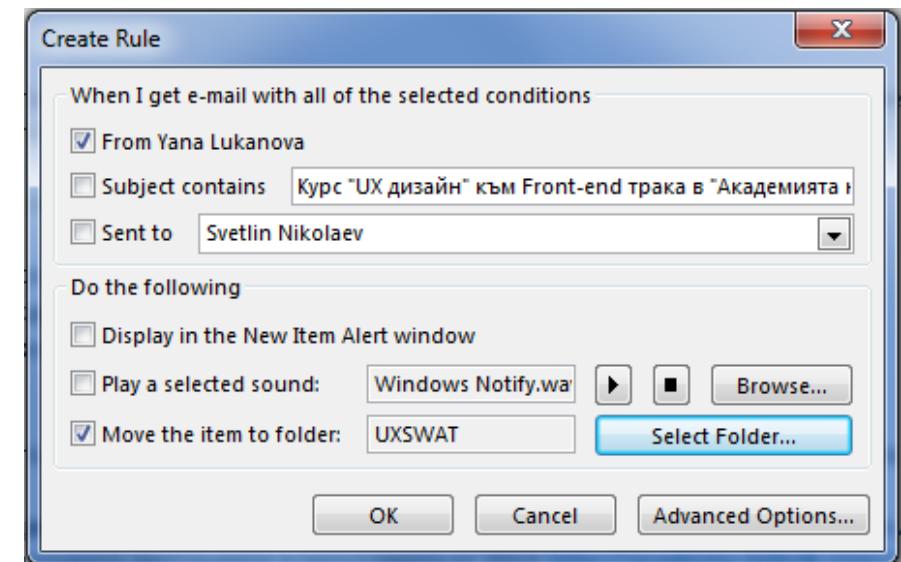
Good Defaults Examples



Efficiency

5. Customization

- Customization happens when the users tells the application what they prefer to see or how to use certain features.
- Personalization happens when the application modifies its behavior to suit its predictions about the current user's interests.
- Consists of adapting interfaces and configuring functionality.



Customization Example

Inbox - Elina.Racholova@telerik.com - Outlook

Categories ↑ Reverse Sort
Subject Add Columns
Expand/Collapse

Folder Pane Reading Pane To-Do Bar People Pane Reminders Window Open in New Window Close All Items

Right Bottom Off Options...

Reply Reply All Forward IM
Fri 9/25/2015 12:06 PM
Yana Lukanova
RE: Курс "UX дизайн" към Front-end трака в "Академията на Телерик"

To: Svetlin Nikolaev; Georgi Varzonovtsev; Tyanko Yordanov; Vasil Yordanov; Kostadin Kushlev; Katerina Boykova; Ina Georgieva; Lilia Karakoleva; Maria Kovacheva; Nina Zayakova; Elina Racholova
Cc: Nikolay Kostov; Doncho Minkov

You replied to this message on 9/25/2015 2:38 PM.

Message UX-design-2015-schedule.xlsx (14 KB)

Здравейте,

Много благодаря за проведената среща в петък. Включвам в комуникацията всички, тъй като по време на срещата обсъждахме, че може някои от вас да се включат като втори лектори по някоя от темите.

Попълнихащата информация за тоуките, които съгласувахме по момента:

September 2015

MO	TU	WE	TH	FR	SA	SU
31	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	1	2	3	4
5	6	7	8	9	10	11

Search People

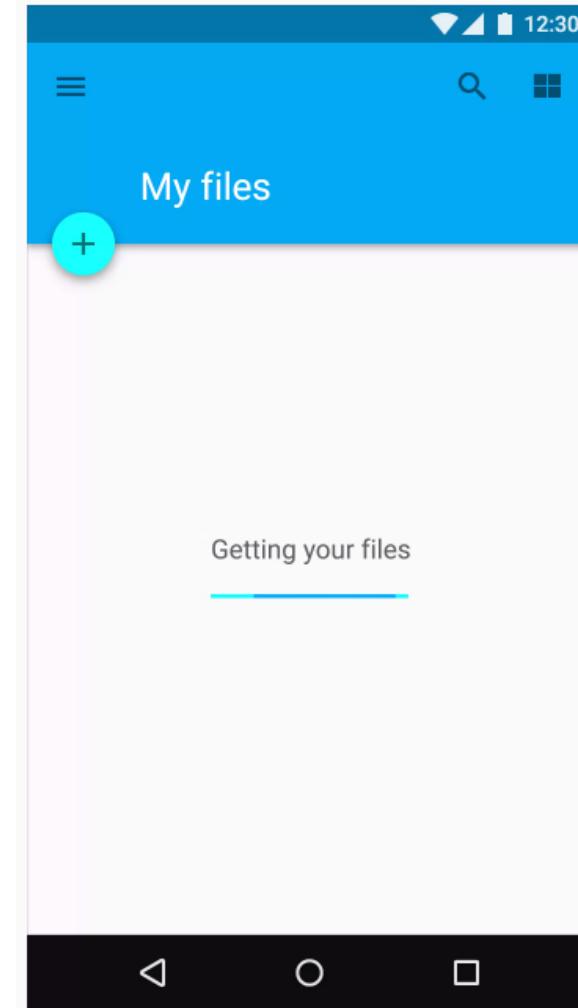
FAVORITES

Atanas Vasilev Available - Free until 2:30 PM
Mariya Rashkovska Inactive (5 mins)
Martin Kolev Available - Free until 5:00 PM

Efficiency

6. Perceived performance

- Refers to how quickly an application feature appears to perform its task.
- Performance is important for application usage, but it means less when the end users can actually sense the improvement.
- The amount of time an application takes to start up, or a file to download, is not made faster by showing a startup screen or a file progress bar. It appears faster to the user as well as providing a visual cue to let them know the system is handling their request.



Perceived Performance Example

KAYAK HOTELS FLIGHTS CARS PACKAGES

Create a price alert

Stops

- nonstop \$204
- 1 stop \$176
- 2+ stops \$263

Times

Take-off Sofia (SOF) Tue 6:00a - 4:00p

Take-off Berlin (TXL) Tue 6:00a - 10:00p

Show landing times ▾

Airlines

Carrier | Alliance

- Air Berlin \$213
- Air Serbia \$176

SOF ↔ TXL Oct 20 Tuesday → Nov 24 Tuesday Economy cabin 1 traveler Change

Sort by: price (low to high) ▾ 19 of 19 flights Round-trip | Segment NEW

Flight Details	Carrier	Time	From	To	Duration	Cabin Class	Notes
\$176 OneTravel	Air Serbia	4:00p	SOF	TXL	4h 40m	1 stop (BEG)	
		8:45p	TXL	SOF	17h 45m	1 stop (BEG)	
Select							
\$204 KAYAK	Bulgaria Air	6:00a	SOF	TXL	2h 15m	nonstop	
		9:55a	TXL	SOF	2h 30m	nonstop	
Select							

Economy

Air Serbia operates flight 123, 354, 355, 122.

Economy

Bulgaria Air operates flight 319, 320.

Error Handling

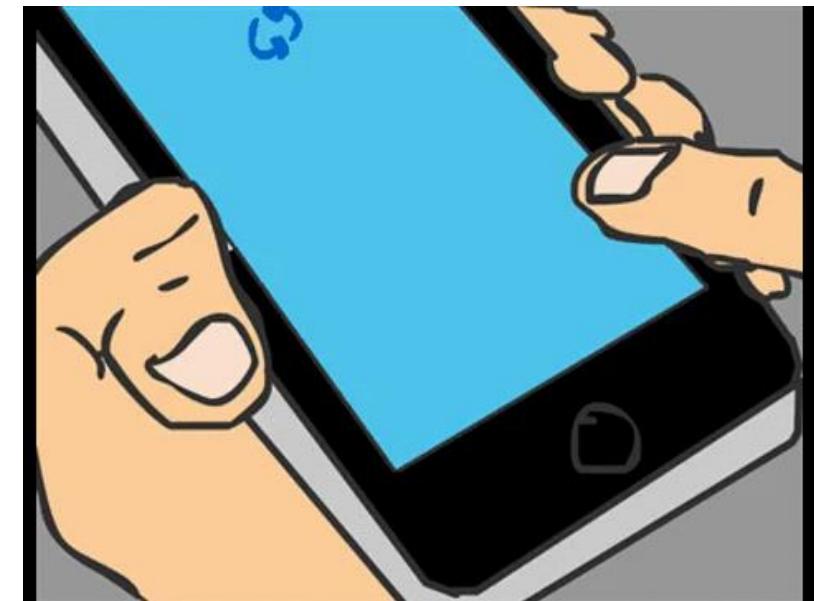
1. Error types
2. Error prevention



Error Handling

1. Error types – slips and mistakes

- Slips occur when users intend to perform one action, but end up doing another (often similar) action. For example, typing an “i” instead of an “o” counts as a slip.
- Typically made when users are on autopilot, and when they do not fully devote their attention resources to the task at hand.
- Mistakes are made when users have goals that are inappropriate for the current problem or task.
- Conscious errors that arise when a user has incomplete or incorrect information about the task, and develops a mental model that doesn’t match how the interface actually works.



Error Handling

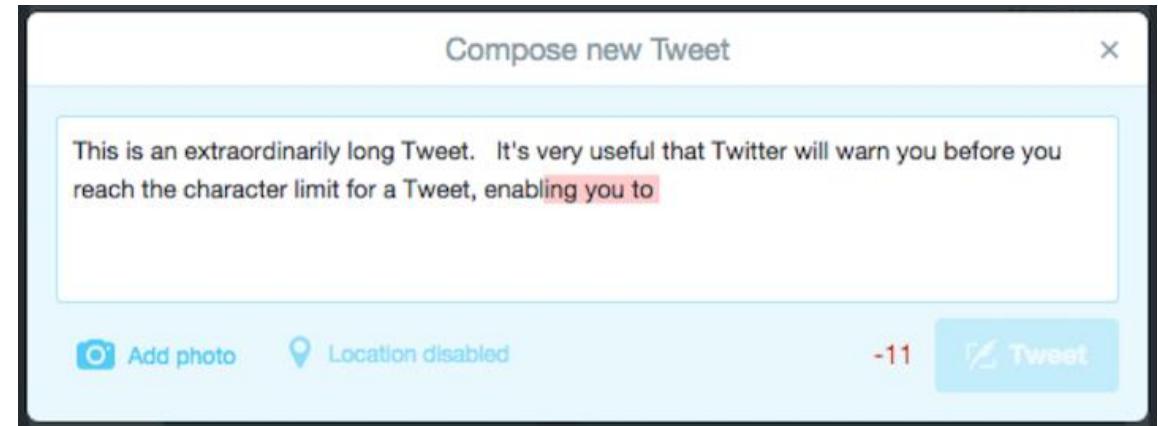
1. Error types – according to the outcome

- Errors with a positive consequence are actions that do not give the desired result, but provide the person with information that helps him or her achieve an overall goal.
- Errors with a negative consequence are those that result in a dead end, undo a positive consequence, send the person back to a starting point, or result in action that cannot be reversed.
- Errors with a neutral consequence are errors that have no effect on task completion.
- Tunnel action - Tunnel action is where you keep doing the same task over and over, even though it isn't working. Occurs more frequently when people are under stress.

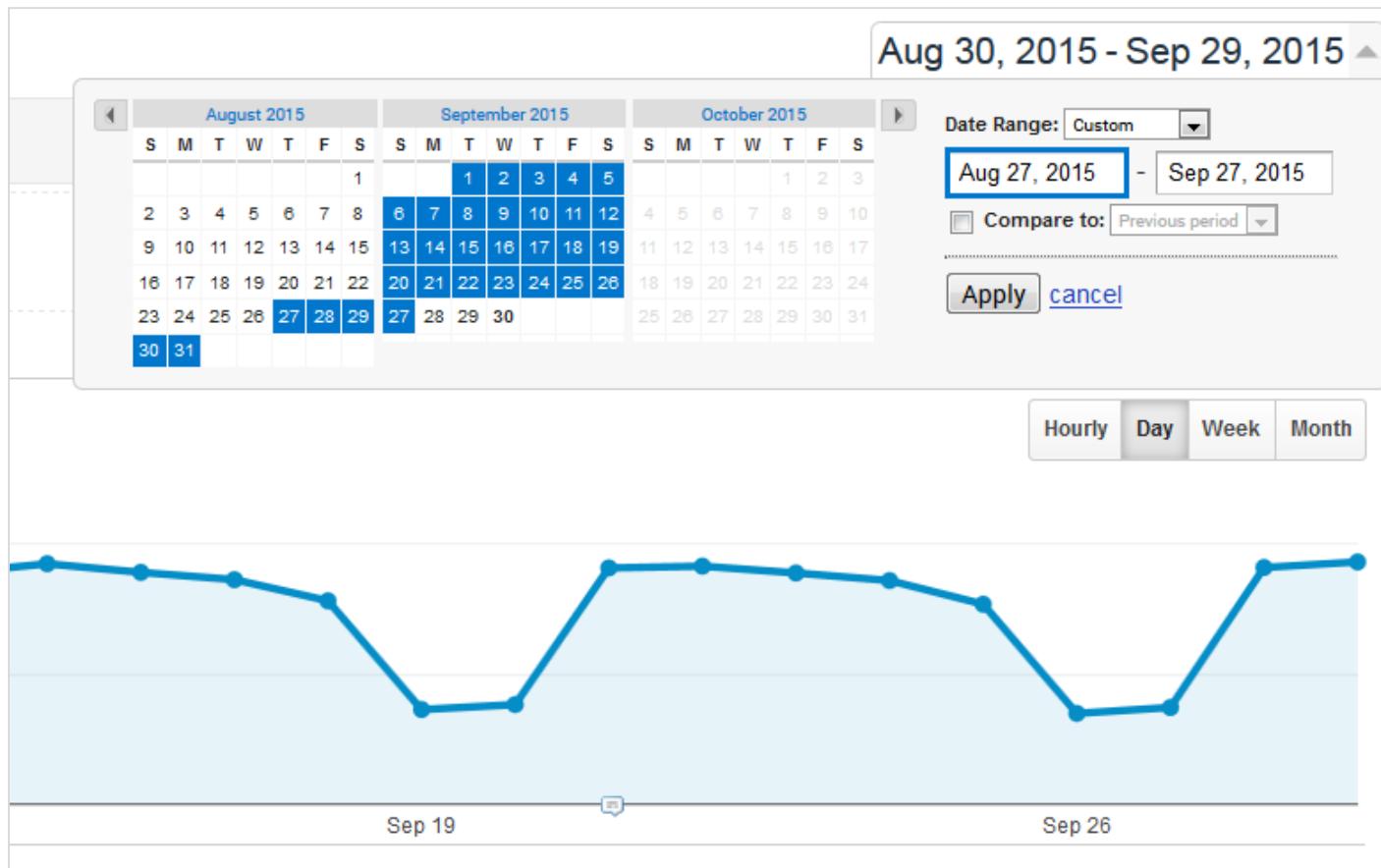
Error Handling

2. Error prevention

- Make careful design which prevents a problem from occurring in the first place.
- Eliminate error-prone conditions and include helpful constraints.
- Choose good defaults, so users have to do less to accomplish a task.
- Use forgiving formatting for data input.
- Preview results before commit.
- Present users with a confirmation option before they commit to actions that may have destructive effect.
- Warn before errors are made.
- Provide options to recover.
- Support “Undo” option - it’s a safety net that makes these errors less costly.



Error Prevention Examples



A screenshot of a mobile application interface. At the top, there is a status bar with signal strength, "Mtel 3G", time "17:07", battery level "30%", and a battery icon. Below it is a header with the title "newsletters" and a edit icon. A search bar with a magnifying glass icon and a refresh icon follows. The main content area displays a list of newsletters:

Author	Title	Date
W	Webdesigner News	сент. 29
	Flat Design 2.0, U.S. Web...	
	Webdesigner News http://webdesignernews.us8.list-manag...	
E	eWebDesign Newsletter...	сент. 29
	Knockout Text, Win 1 of 5 Pir...	
	View Online http://ewebdesign.cmail2.com/t/i-e-tjsu...	
M	Matt Aussaguel	сент. 29
	Material Design colors do...	
	MaterialUp Newsletter <http://mandrillapp.com/track/click/305...	
H	Hack Design	сент. 28
	Lesson 23 - Mobile App Anal...	
	Hack Design lesson There are a handful of special concepts that...	
W	Webdesigner News	сент. 28
	CSS Tricks Design, Netflix...	

At the bottom, there is a red footer bar with the word "Deleted" and a "Undo" button with a circular arrow icon.

Thank You for
standing through
all that UX rubbish! ☺

