

The Four stages of Web Development

Stages 1 and 2:
Discovery & Design

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4 stages of web development

1. Discovery
2. Design
3. Develop
4. Deploy

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1. Discovery

2. Design

3. Develop

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4 stages of web development

1. **Discovery**
2. **Design**
3. **Develop**
4. **Deploy**

discovery

1. Kickoff: Establish communication protocols, milestones and timelines, deliverables and scope, roles and expectations.
2. Analysis: **Content inventory**, writing style, visual design, interface/nav design. Understand the industry, the organization, the brand, and the target audience (create **personas**).
3. Site Map: Establish which pages are needed, how they connect, and which content and features need to be on each page.
4. Gather final text and images.
5. Project Strategy: Provide concise documentation of the discovery phase in the form of strategies to move forward.

content inventory



NIELSEN NORMAN GROUP



personas



Enid Paige

Demographics

- white
- 21 years
- female
- full-time undergrad
- communications major
- lives on campus
- income < \$20,000
- works part time cvs
- doesn't have a boyfriend
- uses campus cash extensively

Recreation

- goes to movies and concerts
- likes to ski
- likes to go for walks

Personality

- highly opinionated
- undecided about future

Study Habits

- doesn't like to read
- uses UB learns to take quizzes
- studies at the last minute
- procrastinates
- has to read a lot for course-work
- prefers that instructors offer specific directions
- studies in dorm room
- studies in study room in Elli
- snacks while computing
- 3.25 GPA

Computer Skills

- browser: firefox
- uses MS products because they're freely available
- not interested in learning new features of UBL
- thinks there's nothing special about UBLeans interface
- only uses the few features of UBLeans required to get info she needs
- uses UB webmail
- has little computer knowledge
- favorite web sites: FaceBook, YouTube
- prepares newsletters for women's group

Enid is taking several 400-level communications classes as she begins her senior year in the major. Her Public Relations professor has assigned a 100 page reading, available as a PDF on UBLeans. Enid must present a PowerPoint presentation, based on the reading, to the class in three weeks.

One week after the assignment was issued, Enid logs on to UBLeans to download the PDF. After entering her name and password several times, she enters the site, and proceeds to find the first to the right class, then through the various sections within where the PDF is located. After downloading it to her desktop, she opens it, and attempts to read it on screen. Finding that too difficult, she goes to get a snack. When she returns, she decides to print out the reading. Not wanting to use her own paper for that, she decides to go to the a public lab tomorrow. She then spends the rest of her study time on FaceBook.

Enid prints out the PDF and takes several days to read through it. She has several questions about it, and decides to email her professor. Back in her dorm room, she launches FireFox and logs into WebMail. The professor responds to her questions within a day, and Enid begins to think about her presentation.

Once Enid feels that she understands the reading well enough, she launches PowerPoint and uses a Wizard to prepare slides based on a pre-set theme. She transcribes her notes into the slides and finds some Microsoft clip art for decoration. She finishes the presentation the morning before it is due, and delivers it to the class without encountering any major obstacles.

Enid attends UB as a full-time undergrad. She is uncertain about what she wants to do after college, so she chose to major in Communications, thinking that would offer the most opportunities and a general, well-rounded education. She lives on campus, and works part-time at CVS, in the UB Commons. She receives some financial support from her parents, and relies on campus cash extensively to purchase food and books. Occasionally Enid wanders off campus to attend movies and concerts, or to travel with friends to ski country.

Although Enid maintains a good GPA, she tends to put off homework, does not like to read much, and prefers to use her computer as little as possible for class work. When she does use her computer, she likes to spend time on FaceBook, keeping up with friends and musing about potential boyfriends, and watching videos on YouTube.



Brian Balboa

Demographics

- italian
 - 55 years old
 - male
 - gay
 - grad student
 - MBA program
 - commutes to UB 3 days a week
 - architect
 - recently ended long relationship
- ### Recreation
- snowboards
 - likes to watch tv dramas

- likes to read novels- science fiction and non fiction
- likes to eat chocolate
- likes to be outside in nice weather
- likes to garden around house in the summer

Personality

- breakfast is favorite meal
- goal oriented
- wants to open own business

Study Habits

- uses UBLeans to obtain homework assignments
- uses UBLeans for accounting class for new business
- takes lots of notes during class

- rewrites notes as part of study process
 - uses notes extensively in studying for tests
- ### Computer Skills
- has high speed connection at home
 - uses computer everyday
 - uses computer at work, home and school
 - owns MacBook Pro
 - advanced computer user
 - writes documentation for computer procedures

Brian is working on a major project with his colleagues at the architecture firm. The deadline for a final draft is due within a few days. Brian is also working on a term paper for Special Topics in Management, and assembling a prospectus to attract venture capital as part of his Marketing Practicum. Though he spends most of his time at work on work-related activities, he does occasionally read and respond to emails and blog posts from his classmates, and will check out research leads as they turn up. He tends to post URLs and other notes to his del.icio.us page, and follows up when he gets home. This semester he leaves early from work two days a week to attend class. He also takes one night class and one on-line class. Brian takes notes during class on his MacBook Pro, and will frequently google for additional info on topics as they come up during lectures.

Brian has returned to UB to pursue an MBA. After having worked as a successful architect for many years, he would like to finally open his own firm. He recently ended a long-term relationship, and finds that he has a lot of extra time to pursue his goals. He enjoys classes, takes careful notes, and uses UBLeans extensively to obtain class materials and as part of the study process.

Brian is equally comfortable working around his house, interacting with technology, and taking part in outdoor activities. He considers himself to be highly tech savvy, using computers in all aspects of his life. Brian also enjoys being away from computers, preparing fine foods, reading, and watching TV.

At home, Brian will do research as he eats his carefully prepared meals. He will follow up on URLs he has collected and gather his notes together. Later, he will work on specific assignments that are due. He will spend the next few days finishing his Management paper and working on graphics to supplement the financial material in his prospectus. He has developed a chart style that illustrates the investment opportunities in a clear and meaningful manner, which he hopes will encourage investors to take interest in his new business.

personas



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**Domenic J. Licata, coursework for
INF 556 Evaluation Learning & Technology,
2008**

design

content vs form

- The earliest Web designers were engineers. Their focus was on efficient delivery of information.
- As companies began to see the potential for profit, they realized the importance of design in persuading and informing the public.

World Wide Web

The WorldWideWeb (W3) is a wide-area [hypertext](#) information retrieval initiative aiming to give universal access to a large universe of documents.

Everything there is online about W3 is linked directly or indirectly to this document, including an [executive summary](#) of the project, [Mailing lists](#), [Policy](#), November's [W3 news](#), [Frequently Asked Questions](#).

[What's out there?](#)

Pointers to the world's online information, [subjects](#), [W3 servers](#), etc.

[Help](#)

on the browser you are using

[Software Products](#)

A list of W3 project components and their current state. (e.g. [Live Mode](#), [X11 Viola](#), [NeXTStep](#), [Servers](#), [Tools](#), [Mail robot](#), [Library](#))

[Technical](#)

Details of protocols, formats, program internals etc

[Bibliography](#)

Paper documentation on W3 and references.

[People](#)

A list of some people involved in the project.

[History](#)

A summary of the history of the project.

[How can I help?](#)

If you would like to support the web..

[Getting code](#)

Getting the code by [anonymous FTP](#), etc.

Content and Form are lovers, their love-child is DESIGN

— Paul Rand



**Design is not decoration.
It solves a problem.**

content vs form

- In modern Web design, content (HTML) and form (CSS) are kept separate.
- A web page may look and behave differently on your desktop than it does on your smartphone, and change based on user context.
- <http://www.csszengarden.com>

css-based layout

- Contemporary web designers must think in modules, rather than in large static pages/images.
- Visual elements are isolated and positioned within `<div>` tags, whose placement is defined by CSS.

responsive design

- RWD attempts to accommodate various screen sizes, device types, and user context.
- Rather than creating multiple versions of a site for different context, a RWD workflow focuses on a single, flexible site.

responsive design

- Bad Mobile Experience
 - <http://wtfmobileweb.com/>

design process

With the shift from static, table-based layouts to responsive, fluid layouts, the process and the relationship between designer and client has changed.

Old way: Clients would get a pixel-perfect visual to sign off on.

table based layout

- Before CSS, styling options were limited to the display features of HTML.
- Tables were used to create complex layouts. Without them, design elements flowed from top left to lower right, like a word processor.

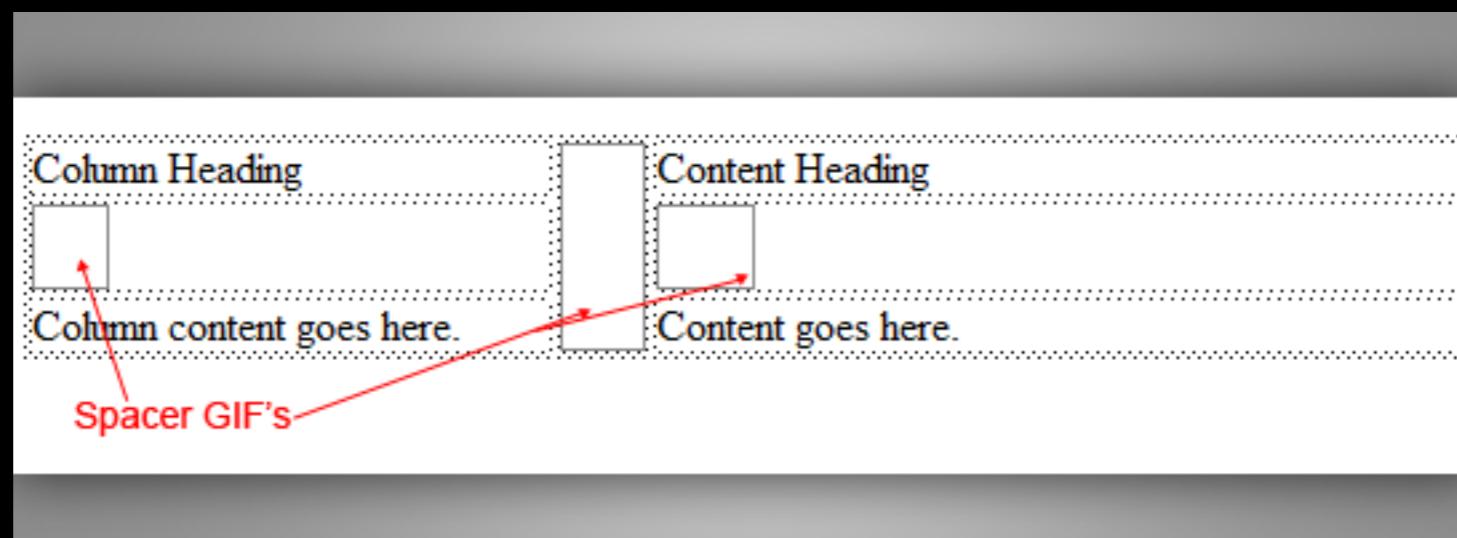


table based design

W3C WORLD WIDE WEB
consortium

Leading the Web to its Full Potential...

The World Wide Web Consortium Issues HTML 4.0 as a W3C Recommendation

"Insisting on HTML 4.0 compliance now will preserve your free choice of suppliers of Web software, tools and applications well into the future."
— Tim Berners-Lee, W3C Director and inventor of the World Wide Web

- [W3C Issues XML 1.0 as a Proposed Recommendation](#)
- Register for the [7th International World Wide Web Conference \[WWW7\]](#) April 14-18, 1998

<p>About W3C who we are, why we're here, and how to become a Member</p>	<p>News & Announcements keep up with the latest events at the Consortium</p>	<p>User Interface</p> <ul style="list-style-type: none">HTMLStyle SheetsDocument Object ModelMathGraphicsInternationalizationFontsAmaya
<p>About the Web history and general information about the Web</p>	<p>Member Area <i>for W3C Members only</i></p>	<p>Technology and Society</p> <ul style="list-style-type: none">Digital Signature InitiativeMetadataPICSPrivacy [P3P]Interest Groups
<p>Press Information contacts, news releases, W3C in the press</p>	<p>Technical Areas the "big picture" of what we do</p>	<p>Architecture</p> <ul style="list-style-type: none">HTTPHTTP-NGSynchronized MultimediaXMLJigsaw
<p>People of the W3C about us - on a personal note</p>	<p>Technical Reports & Publications current Recommendations, Working Drafts, Notes and Submissions</p>	<p>Web Accessibility Initiative</p>
<p>How to Contact Us we're global -- North America, Europe and Asia</p>	<p>Sample Code W3C Reference Library, testbed and experimental software</p>	<p>W3C Services</p> <ul style="list-style-type: none">HTML Validation ServiceMailing Lists
		<p>Historical</p> <p>Moved</p>

Google!

Search the web using Google!

10 results ▾

Google Search

I'm feeling lucky

Index contains ~25 million pages (soon to be much bigger)

[About Google!](#)

[Stanford Search](#) [Linux Search](#)

Get Google! updates monthly!

Subscribe

[Archive](#)

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HOME

FAVORITES

MESSAGES

VIDEOS

MY PROFILE

SIGN UP HERE >>

[Help](#)

Username:

Password:

Log In

I'm a

seeking

between

and



[thefacebook]

[login](#) [register](#) [about](#)

Email:

Password:

[register](#)

[login](#)

Welcome to Thefacebook!

[Welcome to Thefacebook]

Thefacebook is an online directory that connects people through social networks at colleges.

We have opened up Thefacebook for popular consumption at **Harvard University**.

You can use Thefacebook to:

- Search for people at your school
- Find out who are in your classes
- Look up your friends' friends
- See a visualization of your social network

To get started, click below to register. If you have already registered, you can log in.

[Register](#)

[Login](#)

[about](#) [contact](#) [faq](#) [terms](#) [privacy](#)
a Mark Zuckerberg production
Thefacebook © 2004

Yahoo

[[What's New?](#) | [What's Cool?](#) | [What's Popular?](#) | [A Random Link](#)]

[[Yahoo](#) | [Up](#) | [Search](#) | [Suggest](#) | [Add](#) | [Help](#)]

- [Art](#) (619) [new]
- [Business](#) (8546) [new]
- [Computers](#) (3266) [new]
- [Economy](#) (898) [new]
- [Education](#) (1839) [new]
- [Entertainment](#) (8814) [new]
- [Environment and Nature](#) (268) [new]
- [Events](#) (64) [new]
- [Government](#) (1226) [new]
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- [News](#) (301) [new]
- [Politics](#) (184) [new]
- [Reference](#) (495) [new]
- [Regional Information](#) (4597) [new]
- [Science](#) (3289) [new]
- [Social Science](#) (115) [new]
- [Society and Culture](#) (933) [new]

There are currently 31897 entries in the Yahoo database

Find It

Product Information

Customer Support

Technology & Research

Developer World

Groups & Interests

Resources Online

About Apple

Apple Sites Worldwide

Switzerland ▲
Taiwan
Turkey
UK & Ireland ☰
United States ▼

Go

Where to Buy

Register to Win



Welcome to Apple

JULY 14 1997



Introducing CyberDrive

Register today for a free CD-ROM.

EMATE 300

Mobile,
Affordable,
& Smart



MOVIES FROM MARS



QuickTime VR
Takes You Out
of this World

What's Hot

Preorder Mac OS 8

Now you can [preorder Mac OS 8](#), described by Macworld as "the most comprehensive update to the Mac OS in years, sporting a bold new look, a speedier Finder, more shortcuts and integrated Internet functions."

Be the First to Know

Learn about new Macintosh software releases the moment they become available. Check [Hot Mac Products](#) to hear about programs like Speed Demon, ReBirth RB-338 and QuickCRC.

Newton Connects

Newton, Inc., will enhance network connectivity for

Want a PowerBook?

Qualify to win a [PowerBook](#)

- Images from “What did these 10 popular websites look like when they first launched?”

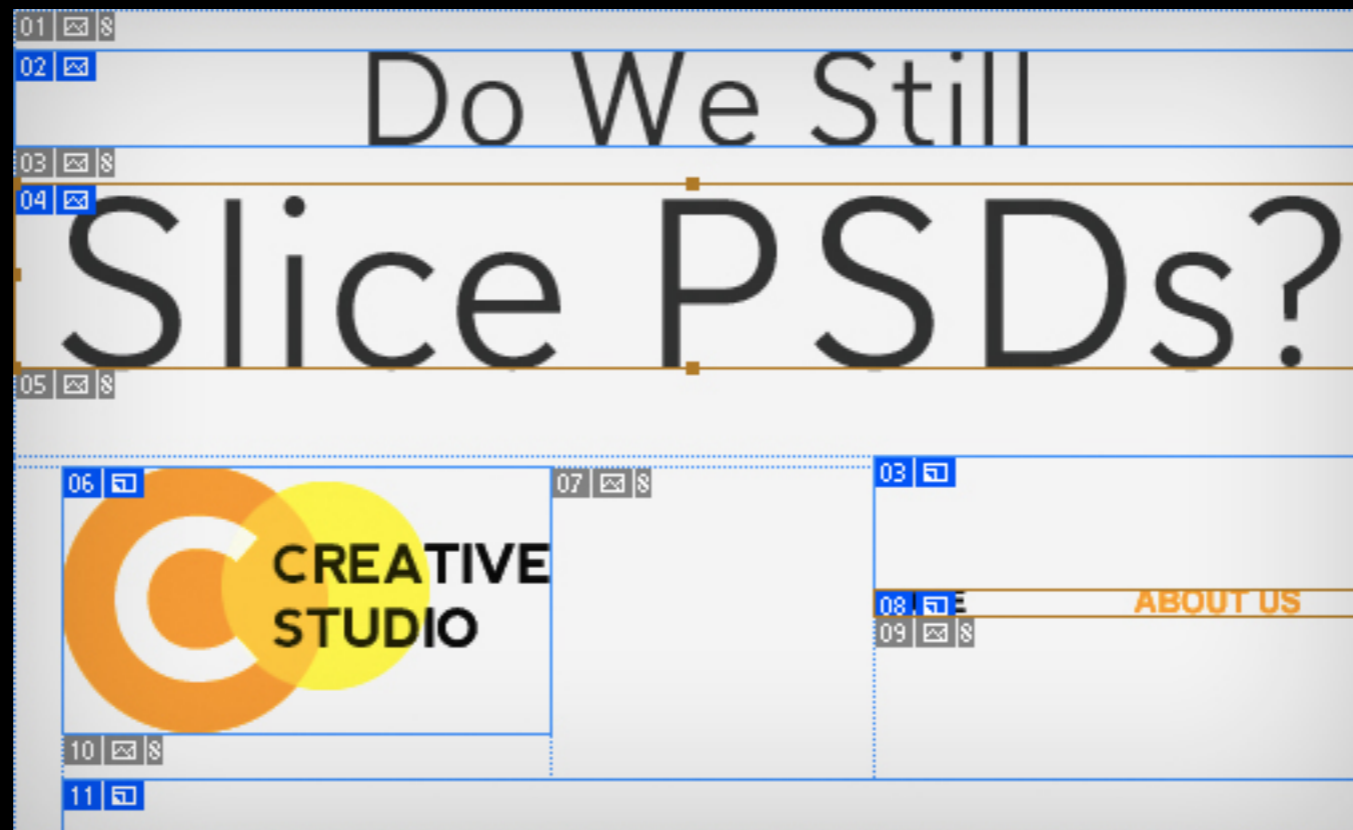
<http://designreviver.com/inspiration/15-popular-websites-look-like-first-launched/>

- See also the Internet Archive Wayback Machine

<http://archive.org/web/>

image slicing

- More complex, visual web designs used “sliced” images.
- Images were sliced into smaller rectangles, then reassembled within the cells of a table. Made page loading more efficient.



<http://thesiteslinger.com/blog/do-we-still-slice-psds/>

design process

Responsive design is a much more fluid process and wireframing, sketching and prototyping are typically more powerful tools. The designer must demonstrate the power of responsive on multiple devices.

New Way: Design in browser/work with HTML as early as possible, then use image editor to create assets rather than full layouts.

<http://www.creativebloq.com/responsive-web-design/problems-8122790>

design issues: print vs screen

- color/contrast
- type size/style
- accessibility
- mobile/context
- page based/linearity

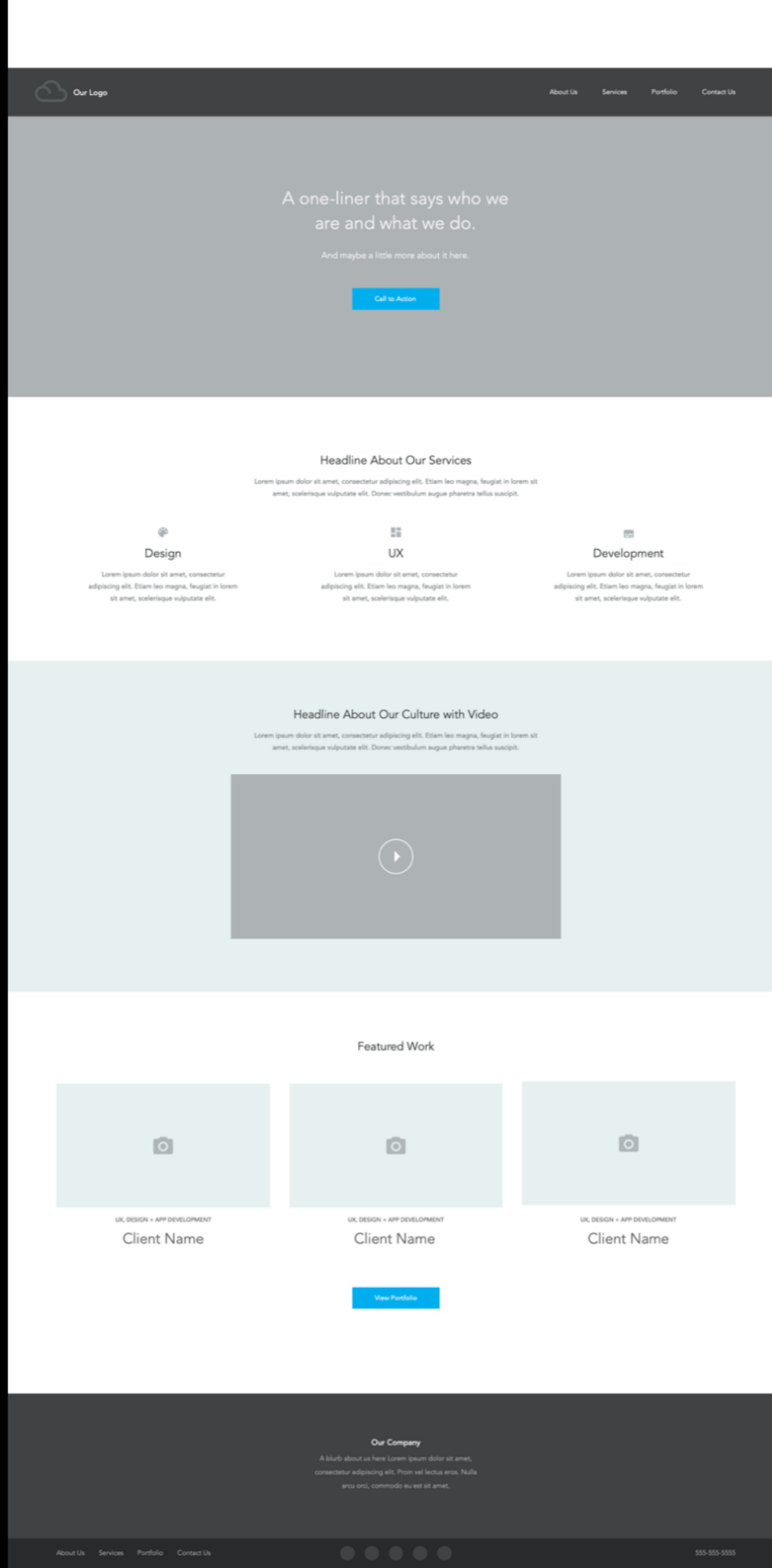
Design Deliverables

1. Wireframes/UX Sketches - establish a design system.
2. Page Tables - A collection of text to be used in the site. Content only, no design, listed in order of importance.
3. Interaction Design - HTML Prototypes
4. Visual Design - Branding, color and type.
5. Style Guide - Document the design thinking.

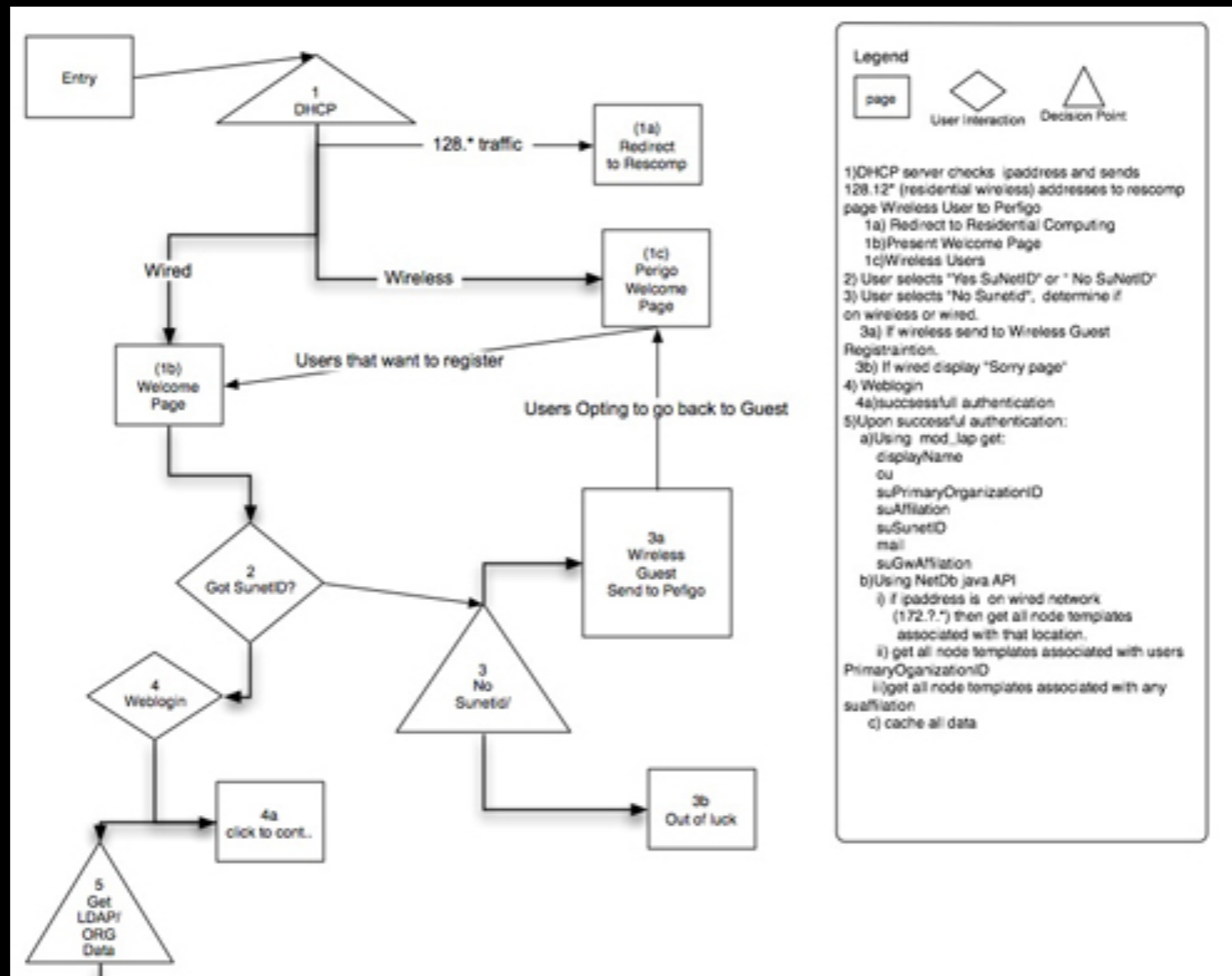
wireframes and prototypes



wireframes and prototypes



user flows: Designing how users should move through a system



content style guides


LOGO USAGE DON'TS

1. Don't change the logo's orientation.
2. Don't bevel or emboss the logo.
3. Don't place the logo on a busy photograph or pattern.
4. Don't change the logo colors.
5. Don't crop the logo in any way.
6. Don't add "glow" effects to the logo.
7. Don't present the logo on "vibrating" colored backgrounds.
8. Don't present the logo in "outline only" fashion.
9. Don't place the logo on similarly-colored backgrounds.
10. Don't outline the logo in any color.
11. Don't add "drop shadow" effects to the logo.
12. Don't put a white box around the logo when placed on a dark or busy background.
13. Don't reconfigure or change the size or placement of any logo elements.
14. Don't stretch or squeeze the logo to distort proportions.
15. Don't recreate elements or replace with something else.



The grid of 16 examples shows various ways the 'I Love NY' logo is misused:

- ORIENTATION:** The logo is rotated 45 degrees.
- BEVEL/EMBOSS:** The logo has a 3D bevel effect.
- BUSY PHOTO/PATTERN:** The logo is overlaid on a busy autumn photograph.
- COLOR:** The logo is colored red and blue, deviating from the original black and red.
- CROP:** The logo is cropped to show only the top half.
- GLOW:** The logo has a white glow effect.
- VIBRATING COLOR:** The logo is placed on a vibrant green background.
- OUTLINE:** The logo is shown as a light blue outline.
- BACKGROUND COLOR:** The logo is placed on a solid orange background.
- OUTLINE:** The logo is shown as a dark blue outline.
- DROP SHADOW:** The logo has a dark drop shadow effect.
- WHITE BOX:** The logo is enclosed in a white box with a dark border.
- RECONFIGURE:** The logo is distorted by being stretched horizontally.
- STRETCH/SQUEEZE:** The logo is distorted by being squeezed vertically.
- RECREATE:** The logo is recreated with a different font style.
- REPLACE:** The heart symbol is replaced with a green shamrock.

Information Architecture (IA)

“Information architecture (also known as IA) is the foundation for great Web design. It is the blueprint of the site upon which all other aspects are built – form, function, metaphor, navigation and interface, interaction, and visual design.”

Information Architecture (IA)

An IA expert asks

- How can information be organized in a way that facilitates usability and findability?
- What is the flow of users through a website?

Information Architecture (IA)

An information architect focuses on

- researching the business and target audience
- analyze the data that will be presented with an eye on the site's primary objectives
- creation of personas representing the goals and behavior of a real group of users and the results of early usability tests

Information Architecture (IA)

1. Define a site's goals (mission)
2. Define the user experience (audience)
3. Identify content (group and label)
4. Site Map
5. Define Navigation
6. Wireframes
7. Visual Design

Findability

- Break down your information into multiple categories
- Provide multiple paths into the categories, anticipating users' queries
- Provide multiple levels of detail

Findability

- IA is the information backbone of the site; navigation refers to those elements in the UI that allow users to reach specific information on the site.

Findability

- A well designed primary navigation system should introduce the viewer to—and remind of—the main conceptual structure for the information.

Findability

How will a site work from a practical perspective?

- site maps
- site-flow diagrams
- wireframes

Defining an information architecture

- Content inventory: Examination of a website to locate and identify existing site content
- Content audit: Evaluation of content usefulness, accuracy, tone of voice, and overall effectiveness
- Information grouping: Definition of user-centered relationships between content
- Taxonomy development: Definition of a standardized naming convention (controlled vocabulary) to apply to all site content.
- Descriptive information creation: Definition of useful metadata that can be utilized to generate “Related Link” lists or other navigation components that aid discovery.

Contracting

- Getting Started
 - Am I a Small Business?
 - SBA's Role in Government Contracting
 - NAICS Codes
 - Small Business Size Standards
 - D-U-N-S Numbers
 - Register for Government Contracting
 - Government Contracting Classroom
- Contracting Support for Small Businesses
- Understanding the Federal Marketplace
- For Contracting Officials



Getting Started

ARTICLE

Am I a Small Business?

You may take it for granted that your company is a "small business." The distinction is important if you wish to register for government contracting as a small business. To be a small business, you must adhere to industry size standards established by the U.S. Small Business Administration. As you register as a government contractor in the System for Award Management (SAM), you will also self-certify your business as small.

The SBA, for most industries, defines a "small business" either in terms of the average number of employees over the past 12 months, or average annual receipts over the past three years. In addition, SBA defines a U.S. small business as a concern that:

- Is organized for profit
- Has a place of business in the US
- Operates primarily within the U.S. or makes a significant contribution to the U.S. economy through payment of taxes or use of American products, materials or labor
- Is independently owned and operated
- Is not dominant in its field on a national basis

The business may be a sole proprietorship, partnership, corporation, or any other legal form. In determining what constitutes a small business, the definition will vary to reflect industry differences, such as size standards.

Size Standards

Because all federal agencies must use SBA size standards for contracts identified as small business, you need to select NAICS codes that best describe your business and then determine if the business meet size standards for the selected NAICS codes. Use our Size Standards Tool to find out if you qualify as a small business. Once you have determined you are indeed a small business, you can then certify your business as small by registering as a government contractor.

Related Articles:

- North American Industry Classification System Code(s) and Small Business Size Standards
- Determining Business Size
- Register for Government Contracting

Languages:

What is your language viewing preference? Choose your language ... SUBMIT

Does Your Small Business Qualify For Government Contracts?

Find Out With Our Size Standards Tool

Powered by SBA

Ready to Learn More About Business?

Find self-paced courses, videos and expert chats in the SBA Learning Center.

GET STARTED

Recent Blogs About Contracting:

4 Perks of Being a Subcontractor

ChallengeHer—Creating Opportunities & Access to Federal Contracts for Women-Owned Small Businesses

SBA's 8(a) Certification Program Explained

MORE

Website Navigation components include:

- global navigation
- local navigation
- utility navigation, breadcrumbs
- related links
- footers
- fat footers

In Partnership With BusinessUSA

Aid, counsel, assist and protect, insofar as is possible, the interests of small business concerns.



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For each navigation component, a series of decisions must be made:

- Usage Priority: How much will users rely on this navigation component? For example, will users primarily navigate the site using local navigation? Or are they likely to more heavily rely on related links?
- Placement: On what pages should it be present? Where should it be placed within the page layout grid? (e.g., top, left-hand, right-hand, bottom)
- Pattern: Which navigation design patterns best support findability and discoverability — Tabs, megamenu, carousels, accordions (as well as other options)

User Experience (UX)

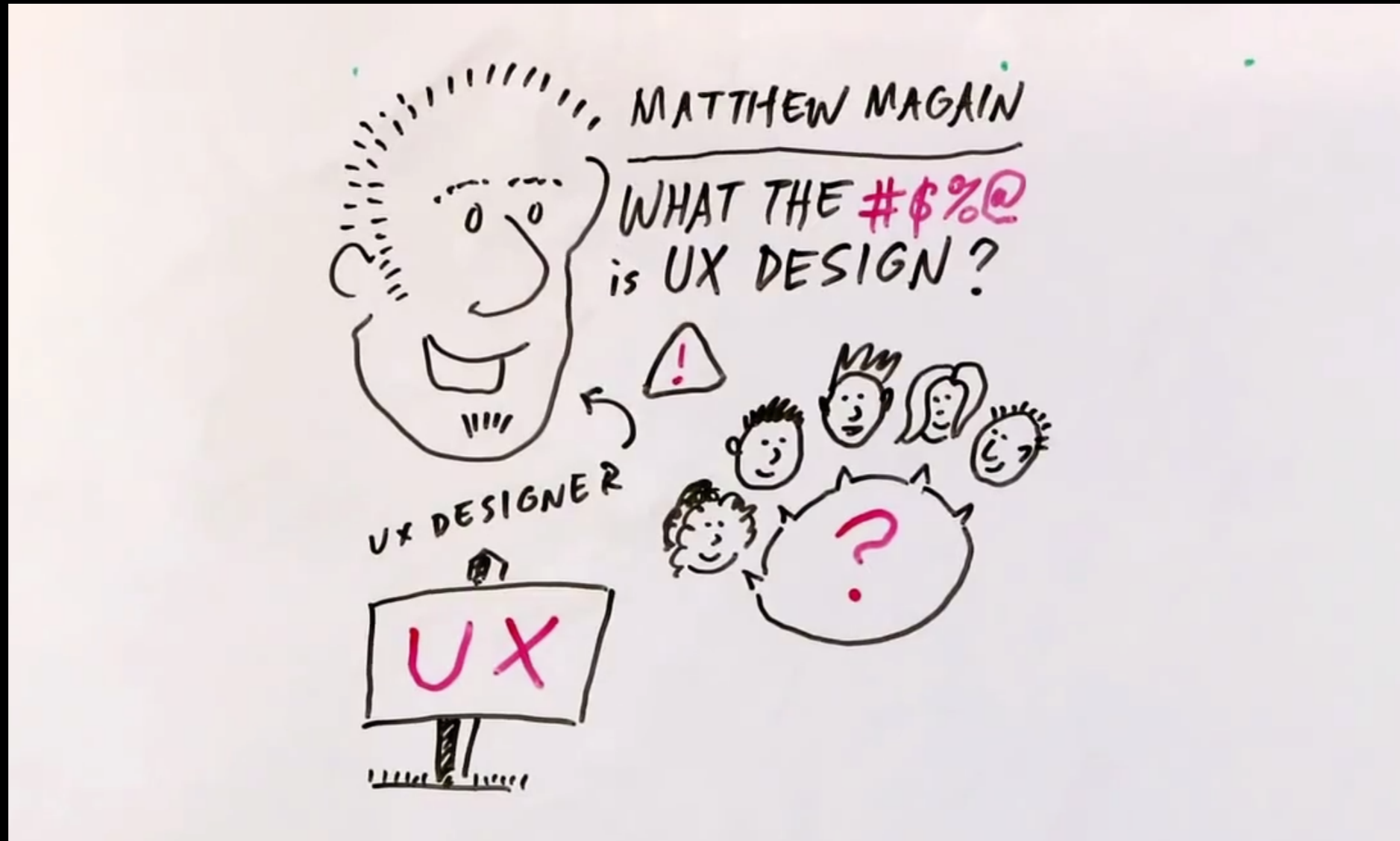
How a user perceives a website

- Does this website give me value?
- Is it easy to use?
- Is it pleasant to use?

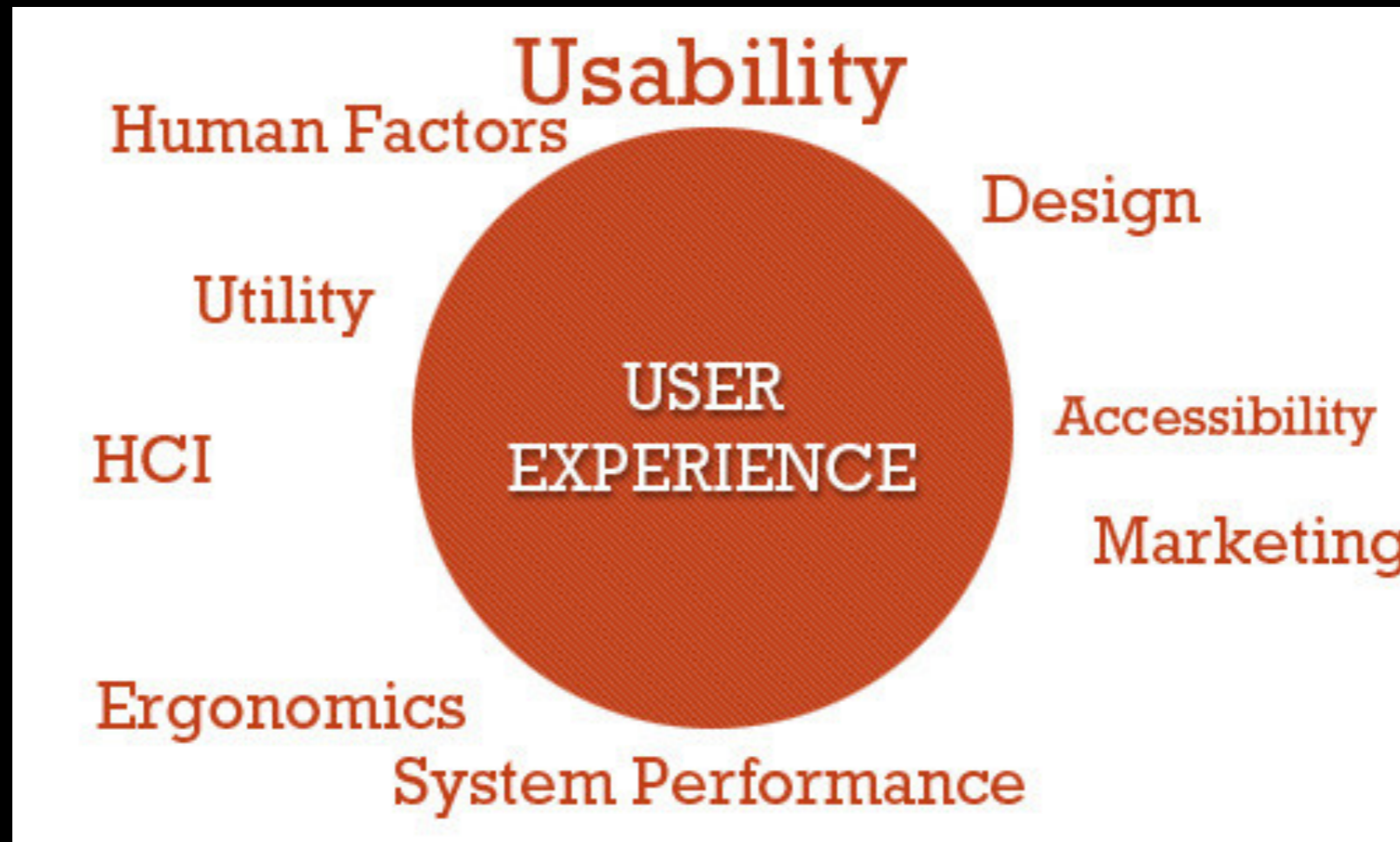
IA informs UI

- Navigation that does not adequately accommodate the full scope of content and functionality of a site can be very costly.

User Experience (UX)



User Experience (UX)



UX is not the same as Usability

- UX addresses how a user feels when using a system, while usability is about the user-friendliness and efficiency of the interface.

rwd



Responsive Workflow

- **Content Inventory** - establish and describe the content. This gives you your raw materials
- **Content reference wireframes** – establish rough responsive wireframes in HTML. Allows for really fast iterations.
- **Design in text** (structured content) – establishes content hierarchy and structure. Easily revisable.
- **Linear Design** – Test out the plain jane structured content in HTML in the browser.
- **Breakpoint graph** – display visually where the breakpoints happen
- **Design for various breakpoints** – Start with the small screen first, then expand until it looks bad. TIME FOR A BREAKPOINT!

Responsive Workflow

- **HTML design prototype** – If w’ere not delivering designs in PS, what do we deliver? Clients wants PS because they’re used to it. Create HTML CSS, and maybe a bit of JS
- **Present prototype screenshots** – It’s part of a presentation psychology – Presenting static “impressions” of the design across the different breakpoints allows you to stay ahead of your client.
- **Present prototype after revisions** - Once revisions have been made, you can show the design in action
- **Document for production** – Deliver a style guide along with the production code.

Responsive Workflow

“Design from the content out. Content and form are lovers, their love-child is design. Design is simply not a sauce you put on top.”

“We’re not designing pages. We’re designing systems of components.” —Stephen Hay

Responsive Design Wireframe Exercise

Using pencil and paper as folded (below) draw wireframe sketches for various device sizes and orientations for a website containing these common sections:

- header (nav)
- main content
- sidebar (secondary content)
- footer

1. Take an 8.5" x 11" piece of plain paper and fold it in half to 8.5x5.5, half again to 4.25x5.5, then to 2.75x4.25...

Using pencil and paper as folded (below) draw wireframe sketches for various device sizes and orientations for a website containing these common sections:

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1. Take an 8.5" x 11" piece of plain paper and fold it in half to 8.5x5.5, half again to 4.25x5.5, then to 2.75x4.25...
2. Phone: On the two 2.75x4.25 sides, draw a wireframe for each orientation — portrait and landscape...

Using pencil and paper as folded (below) draw wireframe sketches for various device sizes and orientations for a website containing these common sections:

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2. Phone: On the two 2.75x4.25 sides, draw a wireframe for each orientation — portrait and landscape...
3. Tablet: Unfold to an 4.25x5.5 side and draw one wireframe on the blank side — choose either landscape or portrait orientation

Using pencil and paper as folded (below) draw wireframe sketches for various device sizes and orientations for a website containing these common sections:

- header (nav)
- main content
- sidebar (secondary content)
- footer

1. Take an 8.5" x 11" piece of plain paper and fold it in half to 8.5x5.5, half again to 4.25x5.5, then to 2.75x4.25...
2. Phone: On the two 2.75x4.25 sides, draw a wireframe for each orientation — portrait and landscape...
3. Tablet: Unfold to an 4.25x5.5 side and draw one wireframe on the blank side — choose either landscape or portrait orientation
4. Desktop: Open to full size landscape and draw one wireframe.