Technical Collection: Web Design (Before and After Mobile Revolution)

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1.1   First Things

1.1.1   License

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1. file formats

2. HTML and CSS code

3. PDF files

4. graphics and movies

5. sounds, music, and spoken word

6. interactivity and flash

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1.1.2   Introduction

This book plus many more books and graphics content, for free download, at my website www.benjamin-newton.com

2   Desktop Dominant Web Design

2.1   Web Design Focus and Approach

2.1.1   Web Design Analogies and Explanations

2.1.1.1   Web Design Analogies

• The scope and scale of website design is so much broader and requires so much more

work and time, than most print publications, that it is more apt, to compare website design, to building a house, with experts specializing, in things, like getting your site ranking high on Google and accessibility/usability, like you have experts in plumbing and electrical work, in building a house
- Website design is more like the messy and weird world of quantum mechanics, than to print design, which has the predictability and rationalism of the theory of relativity
- Web design is like Alice in Wonderland, in that things that are hard in print design are easy in web design and things that are easy in print design are hard in web design, to the point of absurdity and irrationality: making elaborate special effects is easy and quick, while something simple like centering something or creating more than one column requires hacks and can sometimes be next to impossible to do

2.1.1.2   More Difficult than Print Design

- the same web design has to work on totally different sized devices and devices made by many different manufacturers
- you have to use software to view it (so you have to get your user to update their software, to use new features, or to fix problems/bugs)
- the whole way that web pages work is ridiculous (in that it is not easy to create, difficult to do basic things, not capable of advanced things)
- every major company wants their own (browser) software (so work is duplicated several times over)
- competing companies have to all agree on everything
- there are major companies trying to outright sabotage this effort

2.1.1.3   Poor Career Choice

- You hear people keep on saying all you have to do for web design is point and click. The difference between this kind of website and a custom one is like the difference between an outhouse and a mansion.

- Everybody thinks they know how to design, so you end up doing all the tedious technical work and end up just following their orders and not only do you get paid poor, but the result looks so bad you are ashamed of showing others the design, in your portfolio.
- People over in the third world outbid you, so you have to live on a starving wage, and many people refuse to pay, so you end up getting squeezed more.
- Design work also requires many years of experience to be able to do competently and almost everyone wants to be a designer, so you get don't get very many jobs.

2.1.2   Website Skills and Experience

2.1.2.1   Webmaster Jobs

16 years

- project vision and concept planning
- content and design creation and updates
- software/script and hosting selection and installation/updating
- development of ideas and projects
- information organization and accessibility
- link and file maintenance and bug testing
- customer support and research

2.1.2.2   Web Design Education

- almost completely self taught, in web design, and computers, in general
- web design was my first introduction, to design
- read about the Internet, software, and design, almost every day, for 10 years

2.1.2.3   The HTML5 Revolution (in Web Design): the Technologies

- the way to develop web pages changed fundamentally
- change was forced by the introduction of the iPhone
- revolution tools started with new Apple technologies
- real world application could start deployment in 2009

2.1.2.4   The HTML5 Revolution (in Web Design): Designer Responses

- Many designers had to re-learn to design web pages, from scratch, or leave the industry
- It was easy for me, because I approached design, in an Apple/Web friendly way
- I was able to do much more, because I then had better tools
- I didn't have trouble re-training, because I really understood the technologies

2.1.3   Web Design Philosophy

2.1.3.1   My Web Design Approach

- I see myself as a web designer rather than a web developer, because my focus is on communicating emotional and artistic aspects, of my writing, and only see the technical side, as a means to an end
- I believe web design is an art and a science. Most designers only see it as one or the other.
- The best design is the one that helps communicate the message the best
- I don't design for the advanced user, because they are less than 1%, of the population

- I think that people should learn related fields, like writers should also be designers and teachers
- Although I am aware of and concerned, about the technical aspects of design, my direction is determined by my intuition - I want to communicate a certain feeling

2.1.3.2 Web Design Rules

- There are a few techniques that you find are possible that you should never attempt
- Sometimes you need to break one of them for a particular design.
- You have to just intuitively know when to break these rules and when not to.

2.1.3.3 Why I Don't Program

- I can get free Javascript programs on the Internet, so I can do most of the things I do with programming without writing any of it. I can usually even customize them and can style them to blend in with the rest of my website.
- I prioritize my time, as I only have a limited time and budget, and I know that if I don't do the writing, nobody else will and I will only get the design I want, if I do it myself.
- I get very frustrated tracking down errors, in just the design part of web design. If I added the complexity of programming, then I would be even more frustrated and spend even more time working on my website.
- I have trouble with abstract thought, because I have Schizophrenia, and have tried learning some programming, but couldn't figure out the connections between the code and the data.

2.1.4   Bad Web Design Ideas

2.1.4.1   Bad Designers Advice

- Any designer who gives advice, when the article containing the advice has poor contrast like light grey on dark grey, wrong size or font, and it is hard to read.
- Designers who say it doesn't matter, if your client finds the design attractive personally.
- Designers making websites that look cheap, have poorly done graphics, look cookie cutter, or use obsolete techniques.

2.1.4.2   Bad Developers Advice

- Designers that don't know both HTML and CSS and can't code them directly.
- Designers who use Content Management Systems and cannot customize the appearance, because they don't know what they are doing, or that do not update their CMS software, in order to avoid being hacked into.
- Designers who do not appreciate the technical side of design and don't try to optimize their designs for speed and memory constraints.

2.1.4.3   Industry Critique

- I think most web designs are so bad that I am impressed, if I find a webpage that isn't obnoxious, for any number of reasons. I would have turned off all the visual extras, on the web pages and just browse in plain text, except that most sites will not work right without advanced styling, graphics, and interactivity
- Unlike many in the industry, one of the biggest reason why I like web design is that it changes so fast and is so broad a field, that there are always new things to learn and I constantly feel challenged

- Unlike many in the industry, I see information technology as a specialized service industry: I don't expect people outside the industry, to know any technical things, just as no one expects me to make my own meal, when I go to a restaurant

2.1.5   Website Design Techniques

2.1.5.1   The Web Caught up to Me

- It took until the last several years and CSS3 (Safari 5.1, Chrome, Firefox 4, and Internet Explorer 10 and higher) and DSL/Cable (broadband/high-speed) connections or better (over 90% of active American Internet users) for my vision of web design to match the technology
- I believe the technology as of the October 2011 Apple (devices) software release (iOS 5) and higher on (iPod 4, iPad 1, and iPhone 4 and higher) is finally good enough to build my vision
- I had an easy time moving my website over to work on new Apple devices like the iPhone and iPad, because the way I designed things was already the ideal way to develop for mobile devices

2.1.5.2   How I Create and Update my Website

- I have always made small improvements, over a long period of time, as I see the main advantage of the web is the ability to make instantly available updates
- I even make improvements that people don't see for: speed, performance, ease of updating, improved organization and consistency, more standardized approaches, errors in code, etc.
- I try not to work against the technology or push to complex designs on the computer- for instance, I am really careful about my use of Javascript and animations

2.1.5.3   Graphics I (Try to) Avoid

- any kind of blur
- random colors and themes – all chosen based on logo
- not relying on icons for providing meaning – they are not easily, quickly, and universally understood
- clip art/stock photos – use/reuse my own custom graphics whenever possible
- regular pre-created bitmap graphics – use font, CSS, or SVG (computer instructions for drawing graphics), for graphics wherever possible
- Javascript for static visual effects

2.1.5.4   Layouts I (Try to) Avoid

- complex layouts
- fixed size layouts
- more than one level of menus
- even moderately complex layouts (for content pages)
- Javascript for static layout

2.1.6   Benjamin-Newton Network Specific Ideas

2.1.6.1   Benjamin-Newton Branding

- focusing on helping the average person
- taking on problems too big and complicated for anyone else
- clear and concise, simple and straight forward

- universally accessible in content and design by using open formats, guiding the user through the content by my design decisions, and writing as simply as possible
- given freely, money from third parties not accepted, and not looking to gain any money from website or content
- giving everything away as freely as possible, while still maintaining the integrity of the content and format, of what I produce
- design goal: be more interesting to read than watching a cat video

2.1.6.2   Ideas on Typography

- traditional fonts that have been proved by the test of time
- highly legible fonts: easy to read at small sizes
- same size font no matter what size of screen
- specify font in most common sizes in points as that is how they were designed
- no bold or italic, so only need one font file
- both serif and sans-serif
- use icons from unicode standard glyphs, so nothing (even fonts) to download

2.1.6.3   Usability

- You always know where you are on my website network relative to other web pages elements
- Most major designs are color coded, so there is one dominant color or color combination that you do not find as a dominant color on another web site
- All major elements are numbered
- I explain everything in great detail about things like needing to scroll down, how to use interactive menus, and remembering to bookmark my website, as well as an entire section devoted to helping others understand basic things about how websites work and a complete style guide detailing how to get most of the effects on my website work on yours minus the really complicated ones

- I use as high a contrast between background color and text as possible while still making the background color dark or light enough to see: black text on a light background or white text on a dark background and adding text-shadow to make it stand out while still fitting in with the color scheme.
- I also provide a header explaining briefly about myself and footer providing links to major features of website network on every page

2.1.7　Why am I Only on a Public Website?

2.1.7.1　Why aren't My Creations in an App Store?

- The biggest reason for staying out of an App store is that I cannot update my work and design, at any time I choose to - they require a waiting period for approval
- I want my work to be future proof, to last beyond my lifetime and be able, to leave it, at any point and have it work indefinitely, without any action on my part - the app stores are not open standards for their file formats and so do not have enough longevity - updates alone can require a major rewrite of the app
- Most media online uses DRM, to restrict what device people can see my content on and I do not want, to depend, on any company still being around and supporting that technology, the devices, and the media formats forever
- The final reason is that an App is designed, for applications/programs with, like word processors, while the web is designed, to make documents universally available - I try to work with the technology, instead of against it, so I will not make my documents into programs

2.1.7.2 Why am I Not on Facebook or Twitter? (and Why You Cannot Add Comments to My Website)

From my experiences online, I have come to believe the following

- I used to comment on various news sites, until I realized most people commenting weren't interested in learning anything, but just wanted to "hear the sound of their own voice" Most people have little knowledge about anything and have nothing useful to say, plus they want other people, to think highly of them, so they pretend, to understand things they don't and refuse to ask questions, when they don't understand. Many comments are so poorly written, that it is unclear whether they are mad or happy about something, as the contradict themselves, by their poor grammar: "I love this song – its junk".
- Most comments are negative and you cannot turn them off. I heard one person say that "If you can't be mean online, then where can you be mean?"
- My site is very controversial and would likely get a lot of negative comments, by people with more common beliefs. It seems that this Millennial generation is considered very tolerant, because they think it is ok to be gay, but I have found that most of these people have a very hard time accepting other people making creative decisions (or even just having different opinions or experiences) and have so poor an imagination, that they are unable, to even learn, to be empathetic. This demographic also seems to like, to argue with everything, just for the sake of it, and have absolutely no manners. They are unreasonably critical, selfish, lazy, ignorant, and cheap; they lack any gratitude; they feel entitled to everything; they cheat and steal; and they generally lack any morals or conscience. And it seems that they have spread their lack of regard, for decency and moral degeneration, to most the other age groups, as well. Americans, in general, are just getting too fat, lazy, and corrupt and our society has constantly decreasing expectations for themselves and vastly increasing expectations of others. The only reason why our system doesn't entirely run on bribes is that Americans are unreasonable, in how much they expect, for doing their

jobs properly.

- Online communities in general seem to reinforce group think, when I am interested in stimulating critical thinking.
- These sites are supported by ads, which I stay away from, as I have no control over what I get. I would likely get New Age related ads, which is directly contrary, to my beliefs and I want no involvement in.
- Many people pretend to be someone else, for entertainment, fantasy, or even for fraud. There is no way of knowing who is commenting and whether it is representative of a given group. One person can have many different user names and can appear, as a large group, and most intelligent people probably won't comment at all. It is even a large task to remove all the spam comments, scams, malware (viruses, spyware, trojans, etc.), and pictures of who knows what and links to who knows where. Bottom line, paraphrased from Doctor Phil (talk show host): "The only thing you know about someone online is that they have access to a computing device and have an Internet connection."

2.2   Website Specific Design Choices

2.2.1   Design Overview

most of the following design elements are on every one of my websites and work as far back as Internet Explorer 8. Icons require high resolution Windows 8 or higher, for all icons visible in black and white and high resolution Mac OS X or iOS Apple device and higher for all icons visible in color.

2.2.1.1   General Concept

- vertically oriented navigation and overall layout
- no ads
- easy to optimize, for almost any size, without changing content

- optimized for any size, including mobile, plus even more simplified mobile website

2.2.1.2   General Navigation

- headers and footers on each page and each website with address and important notices (styled with icons)
- no side menus, or top, or bottom drop down menus
- navigation is featured content
- oversized main navigation links are buttons

2.2.1.3   Content Organization

most of the following design elements are on every one of my websites and work as far back as Internet Explorer 8

2.2.1.4   Content Styles

- headings decrease in width, as they decrease in level (heading level 2 is narrower than heading level 1, and heading level 3 is narrower than heading level 2)
- paragraphs and header / footer / content change from lining up mostly vertical to each other to mostly horizontal to each other, as windows changes size
- no bold or italic text: emphasis signaled by different colored gradient underlines

2.2.1.5   Labelled Content

- date last updated
- front page marked as such
- headings, lists, and paragraphs marked with an appropriate numbering system
- arrows pointing down follow headings, to tell the reader to scroll down farther

2.2.2   Navigation Organization

most of the following design elements are on every one of my websites and work as far back as Internet Explorer 8

2.2.2.1   Link Styles

- navigation links expand and contract from vertical to horizontal, as windows changes size
- secondary navigation links are single underlined for links within site, double underlined for external links, and dashed underlined for links to another one of my websites
- links are further marked on which one of my websites they are linked to, if the link is just a link within the page, or different person's/group's website

2.2.2.2   Link Destinations

- most commonly accessed content linked to in header
- linked to my other websites in footer
- direct link to front page
- direct link to top of page

2.2.2.3   Labelled Navigation

- notices marking latest versions of content
- page title marked as such
- slogan in ribbon

2.2.3   Website Design Variation Strategies

2.2.3.1   Colors and Styles

- color coded designs by situation, location, and device
- long content pages have flat corners and standard fonts (for headings, lists, links, and page styles), with more simple colors and without graphics
- directory pages have round corners and custom fonts (for headings, lists, links, and page styles), with brighter colors and graphics
- repeated header and address elements are shiny and flat and the content of the page elements are soft and round

2.2.3.2   Styles Variations

- auto selects optimal design, by device type
- design methods work, for multiple vendors and variations, of similar device types
- graphics display, at best resolution available, with photoshop like special effects, without any increase in download time

2.2.3.3   Graphics Done Without Pictures

- ribbon
- grass
- red paint
- stitched fabric pockets
- bright clouds, sun, and sunset through window frame
- drifting rain clouds
- fancy stripped neck tie

- resume paper
- swords
- illuminated books
- coat of arms/shield
- paper valentine heart
- 1st place award
- coffee stains
- gold crosses/lattice work
- variety of icons

2.2.4 Programming/Moving/Effects Elements

selection, setup, integration, formatting, testing, and troubleshooting – not designing the actual program

2.2.4.1 Programming / Moving / Effects Concepts

- done subtly, on touch/click
- improves ease of navigation
- maintain consistent/matching decoration/formatting, of interactive elements
- without making it harder, to update my website
- make it easy, for you to find me, when you go, to Google or Bing search
- almost universal web browser support

2.2.4.2 Programming / Moving / Effects Details

- accordion: showing one part, of a series and hiding the rest (on Benjamin-Newton Creative

Works)

- accordion instructions: arrows pointing down follow headings, and instructions to tell the reader to press down to get drop down menu
- static navbar: navigation bar stays, on bottom of window/device, no matter what place you are on the page (on Benjamin-Newton Creative Works Mobile Site and Benjamin-Newton Oregon)
- search, as you type, within web page (on book pages)
- print page button
- pagination: breaking web page, into smaller sections, that are browsed, as separate pages (on Benjamin-Newton Creative Works Technical Help Browsing Website Subsection)

2.2.5   Main Website Design Details

2.2.5.1   Commonly Styled Elements

- same golden background "Discover" theme graphics
- same interactivity
- same font (custom typeface, font sizes, and font styles), for paragraphs and headings
- same heading styles (3d bright rounded colors)
- same paragraph styles (3d with light gradients)
- same list and link designs (3d bright colors gradient rounded)

2.2.5.2   Meaning of Graphics and Styling Symbols

- the logo is based on the adage, "the pen is mightier than the sword," re-imagined into "the Bible is mightier than the pen" - the pen is also a person doing Tai Chi and being moved by God, to figuratively fight, with the Bible (focusing on his own personal failings), so that the

figure should really be pointing the flame or sword, into his own chest, except that is easily confused, in modern society, with someone physically hurting themselves

- the golden background for key graphics is supposed, to be a flashlight, on an ancient golden wall, which is the symbol, of my "Discover" website theme
- the people, on top and bottom, in every theme, are supposed to be: an older man, from the Middle East or East Africa, while the younger looking man is supposed to be, from somewhere in East Asia – these pictures originally came from stock computer generated 3d models, that I highly customized (these are not based on photos or real people)
- branch background graphics signify spiritual and emotional growth
- the two crosses background and, in the banner version, of my logo, are the crosses, of the Syriac (Eastern Dialect of Aramaic) speaking Oriental Orthodox churches (Syrian Orthodox Church and Church of the East)

2.2.6　Main Website Color Coding System

2.2.6.1　Site wide

- green colored variation, of theme graphics, for writings sections, with tiger photo
- blue colored variation, of theme graphics, for graphics and multimedia sections, with rhinoceros photo
- hot pink/purple colored variation, of theme graphics, for special sections, like help and gifts, with hippopotamus photo
- tan/khaki colored variation, of theme graphics, for work, in progress section, with lion photo
- the heads of animals, for each colored section, are taken, by me, from the local zoo, and are all wild animals, native to Africa and/or Asia

2.2.6.2 Important Notices

- orange colored paragraph box, for address information
- yellow colored paragraph box, for most critical information
- green colored paragraph box, for word clouds (key word count)
- blue colored paragraph box, for bread crumbs (navigation map)
- purple colored paragraph box, for content description
- grey/white colored paragraph box, with red border for monetary valuation of content
- grey/white colored paragraph box, for everything else

2.2.7   Website Design Statistics

2.2.7.1   Number of Unique Major Site Designs

12 total unique web designs with numerous additional size, media, orientation, and color variants

- 1 unique unified design for main/professional site, with 4 color variations (pink/purple, green, bright blue, and gold/khaki)
- additional unique simplified site design (red, silver, light blue, and green)
- additional unique design, for hobbies website (brown, silver, red, gold, tan)

2.2.7.2 Number of Unique Minor Site Designs

- additional unique design, for umbrella website (dark/light green, red, tan, black, yellow/orange)
- additional unique design, for school experiences website (dark purple/plum, bright orange/yellow, and white/silver)
- additional unique design, for overview website (dark blue, dark red, white, silver)

2.2.7.3   Number of Unique Section Specific Designs

- additional 2 unique designs optimized, for book pages (gold, silver, red, black, white)
- additional unique resume design (light pink, light blue, light purple/lavender, silver, white)
- additional unique web galleries design (bright red, tan/khaki, white)
- additional unique downloaded book series bundles design (light blue, bright orange, and tan/khaki)
- additional unique custom 404 error pages (light purple and hot pink)

2.3   General Technology Focus and Approach

2.3.1   Acceptance of Rate of Change in Computers

2.3.1.1   Anticipating Constant Revolutionary Changes

- looking forward to radical and rapid change
- ready for complete shift in business models
- hoping for increasing industry quality standards
- hope consumer expectations increase
- expecting my entire skill set to become commoditized

2.3.1.2   Enjoy New Challenges

- know how to adjust to new software, techniques
- can figure out software without training
- can master new skills very rapidly
- creative in software use
- normally work at high speed

2.3.2   Reasons for Design Abilities

2.3.2.1   Well-Rounded Understanding of Field

- broad and in-depth background knowledge
- historical perspective on evolution of technology
- approach new technologies instinctually
- can master every part of your design process

2.3.2.2   Psychological Reasons for Design Ability

- mental illness forces me to keep designs and organization simple
- extreme literalness pushes me to communicate clearly (to avoid any confusion in meaning)
- class distinction drives me to communicate directly and simply
- my serious and complex approach to life gives priority to creations with depth and meaning
- my creative ability in multiple aspects my of life helps me do more with less
- goal for creative work to be more important over time makes me focus on universal relevance

2.3.3   Traditional Design Specialties

2.3.3.1   Communication Centered Design

- I assume as little as possible (technically, cognitively, or socially)
- virtually every decision in design and content has a reason
- communicate message in different media, subjects, and complexity level (for different people/situations)
- graphics and layout designed to reinforce content
- allow people to distribute content as widely as useful and appropriate

2.3.3.2   Web Design

- structured design using flexible formats and methods
- large and simple (no thinking) layouts
- user can get the information as fast as possible
- most thorough website help section

2.3.4   Technical/Support Aspects of Design Specialties

2.3.4.1   Future Proof and Platform Independent Design

- with budget and limited functionality tools

- techniques concept based and software independent
- maximum compatibility and accessibility
- have higher standards than almost anyone

2.3.4.2 File Format Conversion

- document, vector graphics
- keeping original structure
- maximum compatibility
- specialty formats

2.3.4.3 Teaching and Complete End User Support

- can and want to teach and document everything I know
- any experience level
- focus on fundamentals and techniques, not software
- train you so thoroughly, that you don't need me any more

2.4   Website Speed and Efficiency

Other factors affecting web speed. I load the secondary stylesheet and custom font afterwards, so you will start seeing the website, as soon as the HTML page loads (it will appear to load much faster). Most of my websites share about 3 graphics, so after you load one of my pages, the others will load even faster than this measurement. Average speed for full page load, with all elements, is 1.9 seconds (not including professional website). This is on DSL. On cable Internet, it is a split second, for the entire load.

2.4.1 Website Speed Statistics

2.4.1.1 Major Websites

2.4.1.1.1 Professional Portfolio

- Benjamin-Newton.com
- 2.15 seconds (Visually Complete)
- no cache
- DSL
- East Coast US
- Chrome web browser

2.4.1.1.2 Quick Overview Website

- Benjamin-Newton.us
- 2.3 seconds (Visually Complete)
- no cache
- DSL
- East Coast US
- Chrome web browser

2.4.1.1.3 Hobbies/Fun Website

- Benjamin-Newton.org
- 2.1 seconds (Visually Complete)
- no cache

- DSL
- East Coast US
- Chrome web browser

2.4.1.2   Minor Websites

2.4.1.2.1 Mobile Website

- mobile.Benjamin-Newton.com
- 2.15 seconds (Visually Complete)
- no cache
- DSL
- East Coast US
- Chrome web browser

2.4.1.2.2 Umbrella Website

- Benjamin-Newton.net
- 1.9 seconds (Visually Complete)
- no cache
- DSL
- East Coast US
- Chrome web browser

2.4.1.2.3 School Experiences Website

- Benjamin-Newton.info
- 2.0 seconds (Visually Complete)

- no cache
- DSL
- East Coast US
- Chrome web browser

2.4.1.3   Section Styles

2.4.1.3.1   404 Error Page

- Benjamin-Newton Re-Direct
- 1.23 seconds (Visually Complete)
- no cache
- DSL
- East Coast US
- Chrome web browser

2.4.1.3.2 Resume

- Benjamin-Newton Resume
- 2.5 seconds (Visually Complete)
- no cache
- DSL
- East Coast US
- Chrome web browser

2.4.1.3.3 High Resolution Web Galleries Thumbnails

- Benjamin-Newton.info
- 20 seconds (Visually Complete)
- no cache
- DSL
- East Coast US
- Chrome web browser

2.4.1.3.4 Individual High Resolution (5 Megapixel) Photo

- Benjamin-Newton.info
- 30 seconds (Visually Complete)
- no cache
- DSL
- East Coast US
- Chrome web browser

2.4.2   Efficient Use of Server/Network Resources

2.4.2.1   Efficient File Design Choices

- maximum lossless compression (ZIP and HTTP Compression)
- most compatible compression (ZIP and HTTP Compression)
- removing unneeded data (ZIP and HTTP Compression)
- bandwidth efficiency

2.4.2.2   High Quality Web Hosting

- highly reliable hosting
- high speed connection, for host
- hosting optimized, for speed
- putting larger files closer, to users location (using Content Distribution Network)
- keeping server processing load minimal (lightly use Server Side Includes and only compress CSS, SVG, and JS, and not HTML)

2.4.3   Efficient Use of (Client) Computer/Device Resources

2.4.3.1   Efficient Use of Device Internal (Processing) Resources

- maximum mobile device performance (avoid animations, large shadows, and JS programming)
- minimum battery use
- allows maximum running background apps
- simultaneous download of multiple needed files (using multiple domains and javascript loaders)
- maximum old mobile device compatibility

2.4.3.2   High Resolution Optimization

- removed unnecessary graphics
- used computer design instructions, through a combination of: (1) real text, (2) custom fonts, (3) effects through styles described (CSS 3), (4) vector graphics (SVGs) with photoshop like special effects (SVG filters), (5) and programming code (Javascript), in place of regular bitmap graphics, whenever possible
- increased the resolution, of the remaining images, including graphics downloads, by a multiple of 4 (images increased by 4x the previous size)
- reduced file size (disk space and bandwidth used), of graphics (at the same time), while still maintaining photoshop, like special effects

2.4.4   Interface Responsiveness Optimization

2.4.4.1   Design Optimization

- match computer/device capabilities, with possible effects, to give a fluid/responsive experience
- separated out effects, by software capabilities and memory use
- limited effects are given, to less powerful devices
- use efficient Javascript libraries, with only one interactive element, per page
- graphical formatting (CSS) can now be turned off, by disabling Javascript

2.4.4.2   Levels of Support

- (Level 1) Ultimate Experience: High Resolution (Retina) Apple Devices (iPhone/iPod Touch 4 and iPad 3/iPad Mini 2) and higher, and desktop/laptop (PC Internet Explorer 10 and higher, PC Google Chrome, and Mac OS X Safari) with all effects
- (Level 2) Good Experience: Low Resolution Apple (non-Retina) Devices (iPhone3GS/iPod Touch 3 and iPad 2/iPad Mini 1), and netbook/desktop/laptop (PC Internet Explorer 9) minus complex gradients/patterns, large shadows, and transparency
- (Level 3) Basic/Minimal Experience: Internet Explorer 8 (minus custom fonts, all gradients, text-shadow, and irregular/rounded corners)
- separate simplified site, for Android and Opera Mini
- separate even simpler site, for Dial Up users

2.4.4.3   Visual Outcome of Removing Special Effects

- For less capable and smaller devices/software, I remove special effects like shadows and patterns, while still keeping it as similar as the fully decked out design as possible.
- This makes it appear more minimal - technical term is flat.
- I remove the least obvious effects possible until it is responsive - you can scroll up and down without any lag

13.48

2.4.5   File/Download Size Optimizations

2.4.5.1   Graphics Optimization

- reducing number of colors (for PNGs)
- simplifying shapes (for SVGs)
- lossless optimizations (for PNGs and SVGs)
- computer drawings instruction, in place, of regular pre-created graphics, with photoshop-like special effect (CSS 3 and SVG with SVG filters, instead of PNGs)
- server optimizations (HTTP Compression for SVGs, CSS, and more)

2.4.5.2   Audio Optimization

- computer generated text to speech
- achieved 100:1 compression, of spoken audio (30 MB for 3 hours)
- clean defects in recorded audio, including heavy breathing on microphone
- understand licensing issues, of each codec used

- support most major devices out of the box (no install needed)
- no reliance on Flash fallback for any platform

2.5 Maintainability and Compatibility (Easy for Me, Works for You)

2.5.1 Management Issues for Maintainability

Easy to Update and Manage and Future Proof

2.5.1.1 Planning

- having a deep understanding of what you want to communicate
- careful and consistent choices, in file and folder structure
- careful choice of licenses/re-use conditions, for content
- careful choice of file formats and software/devices to support

2.5.1.2 Organization

- all design elements (and repeated content, in all but main site) updatable, from one place
- duplicated material removed
- each repeated notice can be updated, in one place
- keeping code organized and consistently formatted

2.5.1.3 Content Management

- separated content, by media type

- large downloads, all together, in a separate place
- keeping the file sizes, as small as possible
- keeping the number of files, as low as possible

2.5.2   Technical Issues for Forward Compatibility

Never Needs to be Updated

2.5.2.1   Design Choices

- using design industry best practices
- keeping things simple enough, for both the person and the computer
- graphics future proof, as they are resolution independent but still with photoshop-like special effects
- designed, for any resolution/size/proportion, to work on most future devices

2.5.2.2   Technology Choices

- only using techniques and technologies, that you understand
- using only technology, that is both standardized and widely adopted
- no software, on website, needs updating
- interactive widgets, using commonly used compatibility layer, for resistance, to future browser changes

2.5.3   Web Design Choices for Widest Compatibility

2.5.3.1   Device/Software Compatibility

- information available, in many file formats
- designs adapt, to computing device size/browser limitations
- make use of advanced features, in newer browsers, while still supporting old ones
- all major device/OS/browsers tested and supported
- main site fits cleanly, to almost any screen size
- separate simplified/mobile site

2.5.3.2   Accessibility for Sight Impaired

- enlargeable (allows clean zooming) text and graphics
- clean, consistent, and appropriate use of HTML structural tags
- color blind accessible
- works with screen readers
- large interface elements

2.6 Technical and Professional Skills – Needed for Web Designers: (Marketing, Legal, and Public Relations Aspects of Design)

2.6.1 Improving Search Engine Rankings (SEO) General

- 2 of my books rank 1st and 2nd for topic on Google (Christian Existentialism Philosophical Taoism)
- use only "White Hat" official Google and Bing SEO suggestions
- all SEO improvements benefit the user as well
- updated hundreds of pages one by one numerous times

2.6.2 Improving Search Engine Rankings (SEO) Metadata

- marked book license and cataloging information for Google and Bing
- now use headings like Google and Bing want
- added concise descriptions for book pages for Google descriptions
- overrode Open Directory site descriptions

2.6.3   Improving Search Engine Rankings (SEO) Navigation

- improved navigation by providing quick links to most common options
- set up automatic redirects of old web page sections to new addresses
- removed all unnecessarily repeated web page content
- marked which one of several versions of same web page content to use
- made website map for both Google and humans
- providing useful error messages to users with links to major sections

2.6.4   Copyright/Legal Work

- removed unwanted copies of my books from online bookstores
- enforced license against unknowing infringement
- know how to find who to contact for copyright violation
- Apple iBookstore
- Barnes and Noble Nook Store
- Lulu.com's bookstore on Amazon.com

2.7   Book Printing Skills

2.7.1   General Book Creation and Design Proficiency

successfully

- researched

- wrote
- created pictures
- formatted
- proofread

over 10,794 book collections pages and 19 book collections

2.7.2   Statistics

2.7.2.1   Text Book Statistics

- 19 book collections (not including 3rd Party books)
- 10,794 book collections pages total (including Large Print editions)
- novel/trade, pocket, and US letter sizes
- hardcover, paperback, large print, and e-book
- black and white
- custom text formatting
- typeset with LaTeX or HTMLdoc
- custom covers
- covers designed with Xara Xtreme, Toon Boom Studio Express, Pages, Gimp, and/or Inkscape

2.7.2.2   Picture Book Statistics

- 9 books
- 547 pages
- 467 unique pictures
- pictures entirely vector based
- pictures vectorized with Inkscape

- novel/trade and US letter sizes
- paperback and e-book
- full color and black and white
- layout done with Scribus
- custom covers
- covers designed with Xara Xtreme

2.7.3   Programming (Print Markup Languages)

2.7.3.1   LaTeX (general)

- structured
- footnotes
- margin notes
- quotations
- poetry
- custom footers and headers
- custom page size
- two-sided
- custom margins
- custom justification
- drop caps
- page breaks
- multiple source files
- other macro packages
- convert to Open Document via RTF with structure

2.7.3.2 LaTeX (direct to PDF specific)

- hyperlinked table of contents
- bookmarks
- links to web
- meta data
- color
- vector graphics
- interactive Flash embedding
- custom embedded and subset Postscript fonts

2.7.3.3 LaTeX to PDF Authoring Tools

- TeX Shop, Kile, and Winefish text editors
- TeX Live distribution
- pdftex compiler
- Ghostscript for PDF editing
- Adobe Reader

2.7.3.4 Converting LaTeX to Other Formats

- latex2rtf converter
- OpenOffice.org
- Daisy Pipeline
- Calibre

2.7.4 Binding Skills

Can laser print and comb bind publications on my own

2.7.5 Book Marketing

2.7.5.1 Types of Publications

- logo
- business cards
- flyers
- brochures
- concept maps
- timelines

2.7.5.2 Publication Ideas

- self designed
- clear and clean design
- easily readable
- concise wording

2.7.5.3 Publication Design

- resolution independent
- bright and colorful
- large print

2.7.5.4 Matches website

- colors
- images

- styles

2.7.5.5   Handouts Tools

- Toon Boom Studio Express
- Pages (part of Apple iWork)

2.8   Specific Software Experience

2.8.1   Applications

- Microsoft: Word (Mac and Windows) ribbon and old menus versions, Excel (Mac and Windows) ribbon and old menus versions, Powerpoint (Mac and Windows) ribbon and old menus versions, Publisher, Outlook, Expression, Internet Explorer (through version 10)
- Adobe: Dreamweaver, Photoshop Elements, Flash Paper
- Apple: iPhoto, iTunes, Garageband, iMovie, Quicktime Pro, Logic Pro, Pages, Keynote, Numbers, iBooks Author, ColorSync Utility, Preview, Mail, Safari, Mac App Store, (iOS) App Store, iTunes Music Store, iBookstore, iPhone Simulator, iBooks, Disk Utility, Terminal, X11
- Corel: Draw, Painter, WordPerfect
- Lotus: Symphony, WordPro, 123
- Open Source: OpenOffice.org, Firefox, Thunderbird, Evolution, Kompozer, FileZilla, Cyberduck, Chicken in the VNC, Gimp, Inkscape, Scribus, Audacity, Calibre, Sigil, Daisy Pipeline, LaTeX, DjVu, K3b, Sword Project
- Other: VMware, Nero, Toast, BBedit, Carrara, Poser, Toon Boom Studio, Hype, Amadeus Pro, Print Shop, Picasa, Pixelmator, Acorn, XnView, MacStitch, Kindle (iOS, Mac OS X, Kindle), Kindlegen, Google Chrome, Opera Mini (iPad and iPhone), Diskwarrior, Logos, Stuffit

2.8.2   Operating Systems

- Windows (via VNC)
- Apple (UNIX): Mac OS X (every major version from 10.2 to 10.7) on eMac, Mac Mini, and iMac; Apple iOS (iPad 1) 3.2-5.0 and Apple iOS (iPad 3) 5.1-7.0; Apple iOS (iPod Touch 4) 4.1-6.0; Apple TV (original Intel configuration); Airport WiFi Routers
- X-Windows (UNIX): Ubuntu Linux, openSUSE Linux, PC-BSD, OpenSolaris
- Other: Amazon Kindle 3, Google Android Simulator, HP/Palm Simulator, Blackberry Simulator

2.8.3   Web Services and Technologies

- Services/Server/Behind the Scenes: cPanel Apache based web hosting, .htaccess configuration (HTTP 1.1 compression, 301 redirects, mime types) , content distribution network, remote virtual machine service for multiple web browser/OS web page compatibility testing, web page speed testing, "white hat" Google approved search engine optimization, and legal issues (Creative Commons, copyright, privacy, and licensing issues)
- People/Client Facing Technology: HTML5 (CSS 3 Styling, SVG, Audio, and media queries), always use industry standard best practices, optimization for many devices (for Internet Explorer 6-8, Large Screen, Netbook/iPad 1, iPhone/iPod Touch 4, feature phone, text only, and Google devices and Opera Mini), always fully accessible and usable (for all people including people with physical, technical, cognitive, or social limitations), jQuery, MooTools, CSS3 PIE, pdf.js, WebODF, LaTeX, image optimization (lossless transparent 24-bit and 8-bit PNG, JPG, 4 color - 256 color GIFs with transparency and without dithering, JPEG XR, vectorization of bitmaps, PDF optimization, and Amazon Kindle (mobi)), and audio format conversion and licensing (MP3, AAC, iPhone Ringtone, HE-AAC v2, Windows Media, Ogg Vorbis, Apple Lossless, FLAC), SVG/ interactive ePub/iBooks.

2.8.4   Linux and Mac OS X Command Line

- basic file management

- package installation and upgrades
- compile programs with make
- check out via subversion

3 Mobile Dominant Web Design

3.1 Design Collection Introduction

This Design Collection is not a typical collection of howto articles. These insights came, after reading design news and techniques daily, for several years and making the best use of the technology changes ushered in by the iPhone, for 5 years, on my 6 websites. Many of these ideas, I came up with myself and others are hard to find online.

If you want to know how to code HTML or CSS, this is not intended to tell you about how to make a website. Most of this is intended for intermediate to advanced users, covering things that are poorly or not at all documented. You will not find anything similar anywhere online, especially not for free.

These ideas are how and why my website works the way it does. These are all my tricks, so far. You will understand how and why my website is so different from very other website you have seen.

I will be giving you very practical advice and I use a huge amount of creativity in these techniques. These are not all industry standard practices and few of theses techniques are used by other web designers. Many of these techniques cannot be used for corporate websites, because of the way most companies operate.

There is very little for you to buy to use my techniques, as most my tools are free. I use a Mac and I recommend you do so, as so much of the most important web design tools are only

available for the Mac, as developing for the Apple mobile devices makes it hard to do so on Windows or Linux. I do recommend you buy some Apple mobile devices, especially older ones like the iPad 2 and iPhone 4. You will run into problems you can never see or fix, without testing on real devices, that are still in wide use.

Most websites are small and the ideas you want to communicate simple and straight forward, but I have had the opposite experience with my website network of content. One of the biggest design challenges I have had, in designing this website network, is how to display a huge amount of different types of content, in an easy to navigate design. The other big design challenge was to create designs and explanations, for things that are too interconnected, subtle, and/or complex, to categorize, or even put into words.

The final difficulty was to explain things, while not expecting the person, to have any background either in the subject matter of the content, or even basic computer literacy. At the same time, I sought to keep the necessary level of complexity preserved, to ensure the essence and integrity of the ideas are still communicated and understood accurately and consistently.

3.2 Web Design History and Security

3.2.1 What is Web Design?

Web design is more like running a small business or even engineering than it is like art. Art is about looking beautiful. Design is not how something looks, but how it works. The lowest level of design is making the website readable and look great (just because beauty is not the focus of design does not mean an ugly or unreadable website is acceptable).

3.2.2   Do You Want to Create Your Own Website?

3.2.2.1   Purpose

- Find something you know about that others don't
- Have something unique to say
- Be true to who you are and stay on topic
- Realize you are unlikely to make an money

3.2.2.2   Technical

- Pay a little extra for good hosting provider
- Use server side includes
- Do not use a CMS, PHP, Node.js or other extra software or services not needed
- Rely on as few programs as possible as they usually slow you down, make things needlessly complex, and you will then depend on them forever
- Avoid Javascript as much as possible and avoid animation, as they slow everything down and are way over used
- Do not put up ads, as they give you very little money, annoy users, and slow your site down considerably
- Do not let users post comments as they are usually spam, links to stolen digital media or pornographic websites, or very negative and un-useful comments

3.2.2.3   Making Improvements

- Read technology news and books about your topic

- Avoid the general news as it is depressing and never changes
- Get a regular (non-technology adept) person to test your site and seriously consider following their advice
- Get away from your technology and take time to let your mind wander and think
- Never give up

3.2.3   Aspects of Web Design

Web design involves at least the following: making a website be memorable and make the user want to come back, by

3.2.3.1   Creating Great Content

- understand users
- having great content
- optimally organize content

3.2.3.2   Making it Easy to Get Content

- make the website load fast and be responsive on slow devices
- make it easy to find on a search engine
- advertise the website
- make it easy to navigate

3.2.3.3   Making it Compatible

- have the same design work correctly and easily on every device imaginable
- set up fall backs for outdated technology
- make it accessible to all despite mental or physical disabilities

3.2.3.4   Fixing Problems

- test compatibility
- gather and responding to user generated data and statistics
- troubleshoot problems
- help frustrated users
- maintain the website

The best designs should help illustrate and communicate the content. Many web designers focus on just one of these areas. Other areas that might apply, depending in the audience are: creating mobile apps, ensuring the security and privacy of user data, and having a social network strategy.

3.2.4   Web Design Background

3.2.4.1   Web Design History

When I first starting to design web pages, at the end of July 1998, websites were pretty primitive: we had the choice of 3 different fonts, we did special effects in Photoshop, and most websites were merely code, that sewed several images together, using spreadsheet-like tables. People optimizing their websites, for Internet Explorer 8, or the Android web browser still live by these limitations.

Internet Explorer 8 is the latest version of Internet Explorer Windows XP can upgrade to and the version of Internet Explorer that is the default browser that comes with Windows 7. To upgrade to a newer version of Internet Explorer, you must deliberately initiate the download, manually, without even a reminder. Only the latest 2 versions of Windows can get the latest version of Internet Explorer, which now means just Windows 7 and Windows 8.

You could do much more advanced things, with Flash, and I almost did, at one point, but Flash

could never be the future, because it was proprietary, so that its existence, development of new features, and fixing of problems, in performance and security, all rested on what one company (Adobe) wanted to do. We couldn't have our entire future (the World Wide Web) depend upon the good will of one company, no matter how skilled or long lived.

3.2.4.2   Web Design Present

This whole new mobile Internet world created, in the last 5 years, was mostly done by Apple. Apple turned an obscure, quirky, and unfinished web browser, into the best mobile and Mac browser, which almost every manufacturer is building off of (besides Microsoft) and gave away all of this for free. To accomplish this, Apple rewrote the entire web browser program, with completely new code, and used a completely different programming language, then they normally do, to maximize its use, by others. This is what Google'e Chrome web browser is based on, as well as the web browser on Apple's mobile devices (like iPhones and iPads).

Apple did this, because the non-profit organization, who creates the technologies, for building web sites (Worldwide Web Consortium) fought many years, over things like: parliamentary procedure, trying to find ways to force designers to make web pages work for the blind (although other people, with other disabilities, got left out, like the mentally ill), and created a new way of doing the exact same thing (XHTML) and expected that every web page would be redesigned (from scratch), to this entirely incompatible new format.

So the iPhone didn't just change the entire game with software development. It has also done this, with web design, as well. Web design is much harder now, for a number of reasons, mainly, due to the limitations, of mobile devices. When a PC is slow, you can add more RAM, but, on a mobile device, you lose battery life. We used to not have to worry about a desktop (or laptop) computer being able to handle anything we designed, but now we have to test on real devices, to make sure the device remains responsive.

We have to design the same layout, fit the same content in, and make it work on at least 4 major sized devices and several different proportions (and we have to make sure it works in multiple

web browsers and screen resolutions). We also have to make sure our website loads instantly, over a slow mobile connection, and in the third world. We also have almost unlimited competition, in both other businesses websites, and in other web designers, including people claiming they will do it, for free or people, in the third world, who will do it at 1/10 the cost.

3.2.4.3   General Security

You may only know about security, on PCs and Android devices, but website have them as well: most of the things website owners can do, to mitigate or deal with challenges, of web design (PHP, CMSes, and WordPress) create an opportunity, to have their website vandalized and their customers private information stolen. Even using reputable software is not enough, if you do not update immediately, when a new version is released, and every plugin and theme is almost always not secure either.

The other major part of security is to use a password, that is so long and complex, that you cannot remember it and have an equally hard to remember password, for each one of your services. You will continue, to need to change passwords, as different companies, that have your personal information continue to get hacked. Just be careful where you write it down. Don't just give up, on this security problem – a little bit of prudence goes a long way. Eventually, the government will realize that it needs a better way to secure information than a simple number.

There are programs, that remember password for you, so you only need to remember one. The real concern with hacking, that can easily be prevented, is someone over in Russia or Iran running a computer program, that tries a billion different passwords, every second, not your kid manually guessing your password. The key to this is make the passwords, as long as possible, and add a few characters each year, as computers get faster.

3.2.4.4   Why Apple Products are Better

Apple products tend to be much more secure, as Apple software is generally better quality,

because Apple has more experience with designing hardware, software, and network services, especially with the integration part, than even then their most sophisticated rivals. Apple usually releases products later than others, so they get it right the first time. Apple also releases things in small increments, so they can correct along the way, before they release the entire product.

Apple has also been around, for much longer, than many of these other companies and has products, in development, for many years and they may still be waiting, on the perfect time, to release them. The key thing Apple needs to do is stick with the program, that Steve Jobs and Tim Cook set up, and ignore industry critiques, who have never successfully released a product themselves.

Apple needs to keep perfecting ideas and not come up with entirely new ones, like Google is now, which are not anywhere near mass market ready, at mass market prices. The goal of Apple is not to play with geek toys, but to change the world through superior product and services. Just like anyone can create a neat looking flyer, but a well done website takes years of training and expertise. And all that extra money will sure help, when one of Apple's products is not as well received as the last 3.

Apple tests all apps submitted to it, for viruses and spyware, and can and will remove anything that sneaks by, instantly, off everyone's devices, automatically. This person can then never again submit apps to Apple's app store. So far, no one has been successful. Apple's new iPhones now have fingerprint authentication, although not perfect, is much better than using a 4 digit number, to secure your smart phone.

3.2.5   Design Decisions

I also aim to make the website and writing beautiful, but also responsive to the user in a fast and fluid manner, at the same time. I use bright colors, as those cheer me up, as I get depressed easily. I also color code many of my website elements, to make them easier to understand. My overall goal in the design is to re-enforce the messages in my writing.

The websites are based on bright colors and relaxing themes that remind me of positive things in

my childhood and are designed to be as realistic as possible looking while still making the website load as fast as possible (because I don't like waiting for it to load either).

- Benjamin-Newton Overview is based on the idea of a sunset with an inspirational quote (because of the logo) and a stripped tie, to communicate that it is work/pro related.
- Benjamin-Newton Creative Works is based on the idea of plastic toys on a beach.
- Benjamin-Newton Oregon is a website about my family and for my stuffed toys and has a medieval theme, with shields and swords (because the stuffed toy cows like to poke each other with swords)
- Benjamin-Newton Challenging Projects is based on the idea of hot dirty metal and sanded bamboo (like a mill) in a tropical summer, as I have spent many long hours finding books and survival supplies, for this website
- Simplified Benjamin-Newton is my mobile site and its design is based on plastic balloons folded into balloon animals
- Benjamin-Newton Really Mobile is my tv/wearables site that is based on the concept of a doomsday/armageddon prophecy design and is dark because dark colors are both the aesthetic and memory efficient on the Apple Watch
- Benjamin-Newton Lite is my audio-only one page website and it is based on the idea of spray paint/airbrushing artwork and craft paper
- Benjamin-Newton Pre-History is my high school experiences website, before I served in the military and is based on the idea of colored pencils and the logo on swimming at a swim park or lake
- Benjamin-Newton Academic Resume is designed to look like a pastel colored paper resume, that were popular during my high schools years

Unlike most web designers, my web sites have too much content, so that it became hard to navigate, and so the simple answer was to add search, as the primary discovery mechanism, but there were technical problems to this (relying on unreliable third parties, basically). Search also requires you to know what you are looking for, in an area of research (my specific academic domains) foreign to many of my visitors (world philosophy, religion, history, and literature). So I took more time to build an ultimately more effective discovery process.

- I have continued to simplify my ideas, by dividing them up topically (and later added books, for introductions and simplified articles).
- I added cross links by page, to other relevant sections.
- I created the other websites, in my network, to help cut through, to the content (Hobbies, Overview, and Umbrella websites).
- I made simplified versions, of my main website (mobile, wearables/TV, and all audio one page websites).
- I customized my website error pages, to link to the major parts of my websites.
- Finally, I added links to my footers and now links, to my top navigation bars, and linked from one part of each page, to another part, of the same page.
- I have also documented most of my design ideas and implementation and chosen a practical course, for which devices and software to support.
- I have actively sought to optimize my website for speed, deliver different designs for different devices and software, and learn more about web design (by reading about it daily).
- I have decided not to promote myself via social media (as I don't like the negativity of the comments) and decided to also avoid doing video (until the cost becomes reasonable).

One of the re-occurring issues I have, when using other people's services is that I either get classified as "Evangelical" (because of my faith) or "New Age," (because of my interest in major world religions, philosophy, literature, and world history), both of which are fundamentally inconsistent with my worldview and I go to great lengths, to avoid learning about or working with either.

3.3   What Happened to Microsoft and PCs?

Microsoft still sells almost as many PCs as it has in the past few years, but Apple now sells as many devices as PCs are sold. The PC market is something like 500 million users, while Apple now has about a billion users. Android smartphones total several billion devices and smaller Android devices will likely swell to 10 times as many as people on the earth.

The smartphone wars are over and the next major markets are computer related services like subscription music and Internet connected appliances called the Internet of Things. The smartphone has replaced the PC as the primary device of the average user. Google has now even decided that the mobile market is the main search market and desktop is now secondary.

Apple has realized that iPhone sales, even though worth more than oil, have peaked and has now focused on services for their Apple users plus whatever they are working on that we don't know like a car. Apple still has about 1/2 of the users in the US and most of the users who are willing to spend enough money on computers and services (that they can produce reliable and sufficient income to be profitable).

As Microsoft continued to try to develop Windows Vista, which was promised a decade before, Apple basically created a parallel computer market, as when Steve Jobs came back, he ceded the business market to Microsoft as it decided to focus on its strength and compete asymmetrically. Microsoft tried to compete but didn't want smartphones to succeed, because it would jeopardize their Microsoft Office, Windows, and Server business products.

Microsoft released a phone whose software was designed to work on very low end devices and to void of patent infringement. They copied their design for the phones from the Zune, which was the Microsoft competitor to the iPod that no one wanted. This is the same interface as Windows 8 and 10. Google sealed off Microsoft' ability to compete, when it decided to give away Android for free, which was built on off the shelf components scavenged from the open source world.

There were several other platforms that competed, but they didn't have a big company behind them like Google or a mature software platform like Apple. There were some great competitors to Windows including the Amiga, OS/2, BeOS, and the commercial UNIXes, that could have been built off of for PCs and/or mobile devices, but they were killed off by Microsoft, due to their illegal and immoral methods of competition based on deception and buying people off. Linux survived because Microsoft could kill off companies easily, but could not so easily kill off the idea of Open Source or compete with free.

So the consumer market Apple created was 10x the size of the business market Microsoft

conquered and ruled with an iron fist. The funny thing about smartphones and tablets is that Apple was not first to market by a long shot. Microsoft had been releasing smartphones and tablets that nobody wanted a decade or more before post Steve Jobs Apple did.

One of the most misunderstood and overlooked key to Apple's success are due to compatibility achieved by legislation from the European Commission so that Apple devices would work better on Windows networks, the switch to Intel processors so you could run Windows on a Mac at normal speeds, and bring your own device programs where companies let people buy Apple devices if they supported them without the assistance of IT.

The biggest feature was the cost. The iPad was the first computing device from Apple that cost less than §500, due to using a processor that saved Apple hundreds of dollars per device. The PC was finally adopted by computers when their cost dropped to §500 (when Intel developed the cheaper Celeron processor). Previously, even a generation old device from Apple was at least §1,000.

Another great idea was for the distribution of Apple products, which was the brain child of Tim Cook. Apple decided to offer basically one phone a year (so that all Apple devices were very similar, so they were easier to test on and they could be produced in great enough quantities to get good discounts and even control prices on the market), snap together the device in China (they built their computers in America before, but this didn't work well for them and contributed to the expense of their computers in the 1990s), and build Apple stores (as no distributors would stock Apple products in their stores).

So what has Microsoft done in the mean time? They keep buying products that are making very little to no money and they make changes that make people want to leave their service. Microsoft now sees Google as their main enemy and have adopted their business model. They recently bought Skype and LinkedIn and use Bing and Windows 10 to collect information on their users to sell to whoever wants it.

Microsoft has released the Surface notebook, that they claim is also a tablet and the technically Windows (RT), but not compatible with Windows software. The Surface has many problems negating most of its advertised features. Even with paying everyone on TV to use their devices

and the NFL $400 million dollars to use the Surface instead of their iPads, it still sells worse after 4 years than the supposedly failed bigger iPad Pro did in one quarter. Apple has never paid anyone to use Apple products in any TV or movies. Ironically, Microsoft has recently released an easy way to convert Apple App Store apps into Windows Apps.

3.4　Major Web Design Options

3.4.1　Single Page Application plus Accelerated Mobile Pages

A Single Page Application, like Angular, website has the advantage of working without an Internet connection (using a Javascript based server within the browser via what is called a Web Worker), but suffers from being slow performing on typical Android devices, extremely complex to manage, and is very inefficient. It solves one major disadvantage of a website while creating many more severe ones.

It is especially slow and offers none of these features the first time someone visits your website. This technology also encourages the website to take up a lot more space on your device, then what they were formerly allowed to, especially on Android devices.

To speed things up on the your first visit to the website, Google requires you use all their services on Google's website, advertise solely through them or their partners, only use interactive features approved by them, and use their own incompatible version of the basic and standard format of the web. They require you to use a huge amount of Javascript, which ties your hands and forces you to not use an advanced or new features of web design.

The only way this saves time if you use very invasive and inefficient ads. It also unnecessarily keeps you from using some of the greatest new features that are now possible for modern web site design. This last part is called Accelerated Mobile Pages.

This is done by Google, but Google does not use it, it is not compatible with the previous version, and you have to design your website around it so much that another SPA or even another version of SPA will require you recode your website from scratch.

3.4.2   Content Management System

Another kind of website is run by what is called a Content Management System, like Wordpress, and is great for changing different aspects of the website all in one place, avoids you having to mess with files and folders and allows people to update the website without technical knowledge of web page editing.

On the other hand, it makes it very easy to hack into unless you update it (which does require technical knowledge) and sometimes has to be done within hours of the discovery of a hack. The website loads more slowly, because the entire website is regenerated every time someone visits your website.

3.4.3   Website Framework

A website framework has an organized arrangement of different options for designing your website. Bootstrap is one of the most popular web frameworks. It was released by Twitter based on how they designed their website which they released to the public.

This is the big reason why so many websites are so slow and all look the same. It does require some technical knowledge. It also doesn't do CSS as intended, so you have to edit every page of your website, when you do changes to the formatting.

It is best suited to people working as a team or people without the skills or time to make a custom design. the key things here is that you don't have to start from scratch on your website and it uses industry standard coding techniques, which will make it easy to find someone else to further develop the website.

3.4.4   Facebook

Another popular option for creating a website is to just use a Facebook page. This allows you to take advantage of all the work Facebook has done for you, but it also limits you to their design and goals. For one thing, no Facebook page can disable comments by anyone for any reason. You also have little control over the design and features and will be added and removed without notice.

Also, as many users as Facebook has, it is not even available in some countries like China and 10x as many people use Google than use Facebook. Many of Facebooks users are the same person. It is common for one person to have 5-10 accounts. Kids 13 and younger are not allowed to use Facebook by federal law protecting them from companies getting personal information about them.

3.4.5   Flat File and Hand Coded (Do It Yourself from Scratch)

Another way to do websites is to create all the code yourself. This takes either a lot of money or a lot of time or some of both, but the quality is much better. As many people realize that fresh baked bread tastes better than day old bread or that a 5 star hotel is better than a rent by the hour motel, for many people it is worth the extra time.

This allows you to have as much control as possible on a website, make it much harder to hack into, and is compatible with almost anything. This will give you a truly custom design. It is also the fastest and most efficient way to build a website. It does require extensive technical knowledge and takes much longer. You also have to constantly deal with files and folders.

3.4.6   Web Design Hybrids

There are also hybrids of the Content Management System and the hand coded, with one called Headless that allows you to fully customize the design while still having all the other advantages and disadvantages of a CMS. The Flat File generator is generated automatically and is harder to customize but is faster and more secure than a CMS. It generates the website on your hard drive, and then you upload the entire website, every time you make a change.

I do it myself from scratch, but I use Server Side Includes, which allow me to change header and footers all in one place without the security or complexity problems of a Content Management System. While I do not use a Single Page Application Framework, I use fragment urls and hide and show parts of my webpages with some CSS "tricks", so that I allow people to be able to see basic information about my website offline, without the sluggishness of Javascript on low end devices. I also am able to achieve the speed of the Accelerated Mobile Pages by simply not using very much Javascript, few pictures, and no ads, as well as having a fast web host.

These decisions, along with having complete creative freedom, having huge amounts of time to devote to building my website, and having much time to think allow me to constantly improve my website. I also have the freedom to choose exactly what features I want to use, fine tune the performance, and support whatever devices and software I choose.

Some of the practical things I can do because of this situation include avoiding the use of photos, Javascript, and ads, which are the big hurdles to making website fast. My most important website decision was to pay a little more for the technical stuff done to keep my website running, so that I use a web host who is one of the fastest and most reliable you can get.

3.5   Priorities for Web Design

3.5.1   How Do I Get a Website?

(web design is hard and shortcuts have extreme disadvantages)

- (You Get What You Pay For) Do Not Hire a Designer if You Cannot: Give Them Needed Information in a Timely Manner, Only Hire Designers who Use a Legal Contract and Read it (This Protects the Client and the Designer and Allows Them to Both Trust Each Other), Give Them Complete Control Over the Design, Trust their Judgement, and Listen to their Advice
- Outsourcing: Use Themes or Web Services that Claim You Can Point and Click to Create a Website (and Pay Every Month Forever), if You Don't Want to Use a Designer with the Above Conditions or Pay for Someone from Pakistan to Do the Cheapest Design Possible, so You can Say You have a Website, Until They Go Out of Business and You have to Start from Scratch (that Looks Like Everyone Else's but Still Doesn't Look Professional, Falls Apart When You Do Minor Updates, Doesn't use Modern Technologies or Give Wide Device and Browser Support, and is Slow as Molasses)
- Just Use Facebook or Another Social Network, But Have No Control Over Your Design and Many Potential Customers Will Never Even Notice Your Page (Hopefully You Don't Take This Option Seriously as Your Customers Won't Either, Unless You have No Competition, or the Competition is Even Worse, Until a Real Competitor Comes and Puts You Out of Business)
- If You Want Something Done Right, You Have to Do it Yourself: Spend 5 years Learning all the Ins and Outs of Web Design on Your Own (Standard College Design Courses will be So Out of Date that They are Worthless, Except for Contacts and Building a Portfolio, but You Still Need to Learn on Your Own) and Spend All Your Free Time Trying to Figure Out Why Something Won't Work and then Realize that You Either Need to Learn a Lot More or that It is Not Possible or is Incompatible with Your Requirements or Design

3.5.2 Top Essentials for Web Design

(from most important to least important)

3.5.2.1 For a Basic Functioning Website

(from most important to least important)

- Compelling Content: Updating Content to Make Sure it is Correct and Up to Date
- Link and File Structure: Easy to Find Navigation to Important Web Sections and Do Not Hide Navigation
- Speed and Latency: Focusing First on High Quality Reliable and Fast Server, Less than 1 Second Limit on Cable or Faster, 5 Second Limit on Slow DSL/Broadband (Not Counting Cache and with High Resolutions Images), and Use CDN for Downloads

3.5.2.2 Make Sure Your Visitors Can Find You

(from most important to least important)

- Search Engine Optimization: Getting Ranked High on Google
- Marketing (including Social Networking and Getting Listed in Relevant Directories)
- Support for iPhones and iPads (and soon Apple Watch) and Other Capable Web Browsers like Mac OS X Safari, Desktop Chrome, and Desktop Firefox

3.5.3 Respect Your Users by Not Annoying Them

(from most important to least important)

3.5.3.1   Do Not Confuse Users

(from most important to least important)

- Check for Errors and Fix Them Immediately (Focus on Preventing 404 Errors and Make a Custom Error Page)
- Size and Readability is Important: Make Website Text, Website Links and Buttons Legible and Big Enough for Elderly Users; Choose Colors with Large Contrast (Black Text on Light Background or White Text on Dark Background); Choose a High Quality Professional Traditional Style Font, Without Elaborate Decorations (Use Serif or Sans-Serif, especially Highly Legible Fonts); and Make Website Navigable on Mobile Phone (Held at Stomach)
- Ease of Learning Your Interface: Don't Make the User Think to Navigate, Don't Force Them to Make Decisions, Do Not Present Too Many Options or Long Lists, and Don't Expect Them to Know Any Tech Terms
- Do Not Mislead Users: Be Honest with the Purpose of Your Website, Do Everything You Tell Others To Do, Do Not Claim You Know Things You Don't or Lie About Experience and Education, Do Not Try to Get Listed on Search Engines for Keywords that Do Not Accurately Reflect Your Content, and Be Fully Upfront and Honest about Charging Money for Things
- Do Not Solely Depend Upon Icons, Photographs, Artwork, or Animations to Convey Meaning or for Navigation: Pictures are Never as Clear as Text and are Especially Poor for International Users, Non-Native Speakers, People in Different Parts of Your Country, People in Different Social or Economic Groups, or People of Different Ages
- Let the User Be In Control of Webpage and Do Not Change the Regular Way Content Gets Loaded: Avoid Having More Content Come into View Without a Page Load, Do Not Put Windows on Top of the Main Window, Even if They are Inside the Main Window (They Are Almost as Annoying as Pop-Up Windows and Very Hard to get Rid of for Many Users), Do Not Make the User Scroll for Too Long (Use Fragment URLs to Link to Other Parts of the Page), and Make Sure Their is a Clear Bottom of the Page (Avoid "Infinite" Scrolling)
- Don't Force the Browser to Do Things It isn't Designed for Like Trying to Control the Windows and Browser Interface (Like Hiding or Changing the Display of the Web Address Bar), Overriding Finger or Mouse Gestures with Different Functions Than They Perform in

the Rest of the Operating System, Loading the Webpages with Too Much Javascript, or Use Hacks that Make It Hard for Search Engines to Find or Blind Visitors to Use Your Website

3.5.3.2   Do Not Overwhelm Users

(from most important to least important)

- Do Not Stuff Too Much on One Page: Do Not Have Complicated Menus with Multi-Level/Sub Menus and Avoid Designs with Many Columns and Information on all Four Sides (like Amazon.com)
- Keep Your Website and Your Visitors Information Secure: Avoid CMSes like Word Press, Don't Make Users Sign Up or Give Personal Information to Use Your Website, and Fix Hacked Website Pages as Soon as You Find Them
- Remove Ads or At Least Get Non-Annoying Ads and Make Sure They Don't Slow Down Your Website (Ads Alone Will Only Give You Small Returns)
- Do Not Spam Your Users: Do Not Flood Your Users Inbox, Do Not Send Messages that Appear to Be From Someone Else, and Never Misrepresent the Importance of Your Message
- Do Not Use Giant Pictures or Videos or Audio of Any Size as Part of Your Design: They Waste Precious Load Time, They are Distracting, and Get Old Fast
- Be Careful with Animation: In General, For the User, Animation Isn't Necessarily Annoying, But Would Be Just as Usable Without It (It Generally Either Makes the Design Worse or Just as Good Without to the End User and Never Make Things Animate, Unless The Animation is Only Triggered by Some Action by the User)

3.5.4   Technical Priorities

(from most important to least important)

- Maintainability: Set Up Your Website to Be Easy To Update (Avoid CMSes like Word Press and Use Server Side Includes, also with Meta Tags)
- Depend on as Few Resources as You Can: Do Not Depend on Any Google Services, CSS

Preprocessors or other Services or Software that Aren't Critical to Your Website Functionality)

- Support Less Capable Devices like Android Mobile Phones (both with Google Services and Generic) and Internet Explorer (now version 8 and higher) - Make Separate Mobile Site (with Less Content and Simplified Interface), Make Low Memory Smartphone Design for Main Site, and Avoid New HTML5 Tags (Internet Explorer 8 compatibility)
- Use Your Own Domain Name and Do Not Be Creative with Extensions (Stick with the Well Known .com, .net, .org, .us, .info, .biz, country specific, or Similar, use m. or mobile. Subdomains for Mobile-Specific Websites, Do Not Spell Words that Include the Domain Name Extension, Do Not Do Domain Hacks, and Try to Avoid Sub-Domains)
- Do Not Depend on Javascript or Anything Advanced Like Animation or 3D Capabilities (Expect All These to Fail and Use as Few Libraries as Possible)
- Do Not Use Any Technology that Only Works on Either Desktop or Mobile Platforms (:hover, Mouse or Finger Gestures, or Non MP4 Video)

3.6　　Why and How My Website is Different

The simple answer is that my purpose is different and improvements in my website have mostly been driven by my simplifying and clarifying my goals and learning about the techniques possible, in the current technology available. Since I have created my website to deliver ideas, I a have a huge amount of free time, and have never even considered trying to make any money off it - not even enough to pay for its costs, my objectives and methods are very different.

I find most websites very annoying and have read extensively, for the last 5 years all the ins and outs of the best practices. I have web design experience (for the same website) going back 18 years, so I have a different perspective on the technologies involved. I believe these experiences and goals have allowed me to develop excellent judgement, to know when I should follow the rules and when I should break them. There are some basic rules you should usually follow, but in almost every project you should be breaking at least a couple rules, due to these unrecommended techniques being useful, depending on the purpose of the website.

Just like they say in addiction recovery, which came from Saint Francis, that we accept the things we cannot change and change the things we can. The third part is to pray for the grace to know the difference. As far as web deign, I have been given this grace to know what to fight against and what to embrace. I don't know if I am particularly gifted with design, but when you spend so many years on it, you start to develop certain opinions and your users can tell you if you have good judgement in design.

Design is not art. Art is how something looks, while design is how something works. Websites are like houses and you can quickly notice subtle details, that if not paid attention to, show a lack of experience or poor architecture. Making something more complicated does not make it better.

Everything in a design should be done for a purpose, but a design should not be ugly either. A design must do two things or it is a complete failure: it must be easier to understand than a plain white background with black text and must be prettier than a plain look. By each of these standards, by themselves, most website fail.

Most of the problems with poor design come from a combination of arrogance, ignorance, and a lack of empathy. Most business managers think that they are better designers than the web designer. They typically cannot see things from the point of view of their customers or users. Engineering is thought of highly in the computer industry, but design is treated as a light layer of paint, independent of the content and engineering requirements. User and customers can see the difference.

When your website have has a generic design, customers and users now think of your business as a scam or at least that is is very unprofessional. Websites must be kept up to date and focus on what people want to see. People should spend as little time as possible on your site - that is a sign of success. The web offers a true capitalism. Anyone can compete with anyone, so, unless you are living in a third world country, or want to get paid like one, you must differentiates yourself or go out of business.

Not only do I have a lot of free time, but I also am impatient, and have complete creative freedom. I design my website like I wish others would design their websites as well. I try not to make things more complicated, than I can understand fully, I cannot program, and I try to work

with the technologies, instead of constantly fighting them. The first three things you see on my website are the speed at which is loads, lack of any ads, and a very bright and elaborate design.

My website is fast, because I am impatient, it is bright and intense, because I get depressed by dark colors, and I don't have any ads, as I find ads very annoying. My website has no sidebars, to make it simpler. Elaborate layouts are very difficult to create, slow the website down significantly, and are easy to mess up, because of their inherent complexity (in code, not in how they look). This also encourages design choices that do not implement too many options.

Elaborate effects are easy to do, on the web, and when you do them, all in code, you don't have to buy any graphics software and remember what menus and options you have to go through, to recreate the effect. They also load much faster. I have been burned, in the past, by small software makers wanting to only support the latest version of the Mac, while others take months to support the latest version, not supporting the latest web design features, and some even entirely abandoned products I depended on.

In code, I can merely copy and paste, to recreate the same effect and only need a text editor, which there are many options, because it is also what programmers use to program.

I would recommend now only buying software, in curated app stores, like Apple's or any other curated app store, that has a malware free past. A curated app store is where you can find application downloads, that have been pre-checked, by actual people, not just software. Only apps that pass certain guidelines are allowed, like no porn and no viruses, trojans, spyware or other malware.

You should only download anything from a curated store, even things like movies or e-books. Even popular open source programs can and do often contain adware or other types of malware. Malware has gotten worse over time, as has computer security in general. It is just too easy and too cheap, for criminals to do and the criminals have a low chance of being caught and, even when caught, criminals only risk very low penalties.

Malware is now gone to randsomeware, so you can potentially have all your data lost and, even if you pay to get it back, likely you still won't be able to recover it. Malware can remain dormant

and undetected, so your backups could be inaccessible, as well, even if you are responsible. It is common practice, for companies, to sell your information, to third parties (anyone who will pay) and also not update their software, so they get your information stolen. The way to deal with this is to never give out your information, in the first place.

I now make my text as large, as I can fit onto the screen, you are using, at sizes that don't look ridiculous. For smartphones, my text size starts at 14pt; for tablets, it starts at 16pt; and for desktops and laptops, it starts at 18pt. I also use colors with a high degree of contrast: white on very dark colors or black on very light colors.

I have bought professional fonts, that are called highly legible fonts, which don't look fancy, but are designed to be highly readable, at very small font sizes. They look like standard fonts, but are much easier to read, for long periods. You can then easily further increase the size of the text, by pointing and clicking or with one touch.

I try to avoid things that slow down webpages, like server side scripting, CMSes, Javascript or CSS libraries or frameworks, CSS preprocessors, CSS grids, boilerplates, share with social media buttons, analytics, ads, external content, third party content, 3d, animations, videos, etc. I have learned how to make text shadows, which make text easier to see, more efficiently, than the standard way. My website looks fine without Javascript enabled (just without the effects – disabling Javascript works like a switch, to turn off my advanced formatting). You also get this simplified version on the phone size or really cheap android tablets.

I also include information about how my website is designed and what it is about and links to other content on my website. I do not believe in hiding menus or just having a link to the homepage. I keep no information about users on my website. I do not sell anything from my website.

When an error occurs on the website, you get options, to redirect you, to important sections of my website. I keep websites on different domain extensions, instead of subdomains: .com, .net, .org, .us. .info; to make it easier typing in my website addresses. I have made 3 successively more simplified websites.

3.7 Design Decisions

3.7.1 Why Web Design is Hard

A lot of people think that websites are easy to build and that they cost nothing to run, but nothing is free. And scale is everything. There is a reason people get paid for doing nothing, but just helping websites to be found on Google. Web design is a vast field and there are new techniques and software coming out everyday.

Many have tried over the years to make making websites easier, but all approaches just shift the difficulty into other areas or severely restrict your capabilities. Web design is the most difficult design ever conceived, as the same design needs to work on everything from a watch to a billboard. And people want access to the entire website on a mobile phone. And people expect everything to be instantaneous.

There is so much competition that customers can demand this. The latest business trend is trying to run a business without paying out any money for services. Many businesses are outright scams and people know this. An established company has a huge advantage when there are a huge number of small undifferentiated companies to compete with. You have to take a risk or you will never achieve anything - the bigger the risk, the bigger the potential pay off.

Web design is the key to business success today, but few running businesses are willing to accept that and so there are few paying jobs in this field. And although content is the key to drawing people to websites, few people or businesses are willing pay much for writing. At the same time, no one wants to read anything and more people are writing then ever before.

People also expect content to be very low priced or free and if it isn't cheap or easy enough to get in their preferred format, they will just steal it. There is no technological way to keep someone from sharing and copying whatever they get a copy of. The real money is in the hardware and that is why Apple doesn't try to make any money on software or media.

This is why I realized early on that I would never make any money with my website. The key to making money in an digital endeavor is to take a risk and get in early on a technology, before the situation becomes crowded. You could make a simple game and make a fortune on it on the Apple App Store, when it first came out, but now it is difficult to even be found. Most people who made money off of You Tube started early on. The most difficult and necessary thing to survive today as a business is to differentiate yourself - that is why Apple hardware sells for so much more than Windows or Android run hardware, even 30 years later.

3.7.2   General Approach

I aim to make my websites and writing beautiful, but also easy to read, and responsive to the user, in a fast and fluid manner, at the same time. I try to work with the technology and not against it. I try to avoid design techniques and capabilities that web browsers don't seem to want to enable.

I fight against complexity both for me and for the computer. I have simplified my code, by getting rid of ancient techniques, used to supporting ancient browsers. I avoid most slower rendering design capabilities, that only offer a little design improvement, with an exponential increase in memory usage. I now code my website, rather than designing it visually, to make us of the latest capabilities built into the web browsers and make my designs work, with the least amount of computing resources.

I often think of new ideas by reading about what the new capabilities added to the latest web browsers. I have a fall back design that is simpler, for my mobile website or the main sites if you do not have the latest browser. I make the website design desktop, laptop, and tablet agnostic, so that everything, for the full advanced design, work well, on all three.

3.7.3   Design Elements

I use bright colors, as those cheer me up, as I get depressed easily, and cannot wear bright

colors, because they attract insects. I also color code many of my website elements, to make them easier to understand. I have decided upon rainbow colors, because I could not make up my mind what colors I should use on my website (so I used them all).

The pseudo random rotating colors helps differentiate paragraphs and heading, lists, and links. I made the colors change pseudo-randomly, because I wanted to reflect the unpredictability and absurdity of the topics I am writing about, while being clear and easy to read and efficient memory (and battery) wise. I like to design styles, that look like real world objects, that load very fast and are efficiently designed. I like elaborate designs, but have made simplified designs for my content.

I use very easy to read fonts with heavy shadows, and use very large font sizes, for clarity in design. I have now set up my designs, to let people font choose sizes, and margins, and line spacing. I usually avoid animations, 3d, and large shadows because they tend to be memory intensive, unnecessary, and seldom improve the interface. My overall goal in design is to re-enforce the messages in my writing.

The websites are based on bright colors and relaxing themes, that remind me of positive things in my childhood and are designed to be as realistic, as possible looking, while still making the website load as fast as possible (because I don't like waiting for it to load either).

3.7.4   History of Web Design

I use an eclectic mix of real world look-alike designs (skeuomorphism), simple minimalistic styles (flat design), and extreme photoshop effect looking textures (brutalism). For a long time, the web was dominated by websites trying to emulate an approximation of real world textures and objects with faux 3d and shadows, like the iPhone iOS 6 and before.

Then there was a reaction against this, because of cheap mobile devices, that could not handle the special effects and had poor quality screens, so that it was hard to read, with special effects. So people started using minimalistic designs, with bright colors, with white text, and no shadows or faux 3d.

A lot of animation was later added, because it was hard to tell where to click with no other way to show something stood out. These designs often had poor contrast, which made them even harder to read. This was started with the Microsoft Zune, Phone, and Windows 8 and Apple did a remix with iOS 7, and Google create its own similar aesthetic called Material Design you see now with most Google products.

Now there is a third design wave, that is a reaction agains the blandness and unoriginality of these minimalistic designs. Many people are now designing websites, that take the aesthetic of the early web. Their designs look experimental and expressive, but sometimes they are too intense, or too busy, to focus on the text.

3.7.5   Problem Solving

Unlike most web designers, my web sites have too much content, so that it became hard to navigate, and so the simple answer was to add search, as the primary discovery mechanism, but there were technical problems to this (relying on unreliable third parties, basically). Search also requires you to know what you are looking for, in an area of research (my specific academic domains) foreign to many of my visitors (world philosophy, religion, history, and literature). So I took more time to build an ultimately more effective discovery process.

- I have continued to simplify my ideas, by dividing them up topically (and later added books, for introductions and simplified articles).
- I added cross links by page, to other relevant sections.
- I created the other websites, in my network, to help cut through, to the content (Hobbies, Overview, and Umbrella websites).
- I made simplified versions, of my main website (mobile, wearables/TV, and all audio one page websites).
- I customized my website error pages, to link to the major parts of my websites.
- I added links to my most important parts of websites in the footers and links.
- I added to my top and bottom navigation bars linking to other websites and topics within website.

- I linked from one part of each page, to another part, of the same page.
- I have added "cards" for each of my websites and books to allow people to see all the information about the content quickly and visually.
- I have also documented most of my design ideas and implementation and chosen a practical course, for which devices and software to support.
- I have actively sought to optimize my website for speed, deliver different designs for different devices and software, and learn more about web design (by reading about it daily).
- I have decided not to promote myself via social media (as I don't like the negativity of the comments) and decided to also avoid doing video (until the cost becomes reasonable).

I started out with very different designs for each of my websites, but have simplified it to a simple fallback design with solid flat colors and a beautiful rainbow version for my main sites. I have made a simpler design for my mobile and smaller sites with a black and white even more simplified fallback. You can get to the simplest design per page by disabling Javascript. My e-book pages have mobile and standard versions.

3.7.6   Design Tools

If you are another designer and wonder what software or services I use I mostly use a text editor, a web server, a variety of software to convert my books to various popular formats, some graphics optimizers, and Inkscape to do various edits to my graphics done visually. I even create most my graphics in CSS code. My website is probably difficult to navigate on a phone because it has so much on it, but I have done everything I can to make it as smooth as possible.

I have an iMac (Large Screen), iPad Pro (original iPad size), iPad mini, iPod Touch (iPhone without phone part), and Apple TV for my main test devices. Any software that Google makes will display my website (like Chrome, Android, and Chrome OS) virtually identical to Apple devices. If you have the latest software but a slow phone (usually Android), you can get a simplified version of my main website by disabling Javascript or using my dedicated mobile, really mobile, or one page websites.

3.7.7   Why so Much Text on Each Page?

Most websites are focusing more on video and forget that the big change in the Internet now is that there are a few more billion people getting online in the next few years. It is exciting to see that we will have more influence from the third world, as they make up the majority of everyone living.

So far, the Internet has almost universal presence only in Europe, the United States and East Asia, but Africa and South America are poorly represented. Most tech people do not care, because there is little money to be made there, but I am not trying to make money, but to spread information to people who think like I do or have had similar experiences as I have had.

This is why I put so much information, on each page, that tells about my site and the basic formatting is attached, all to one file. This is done, because, even in the US, many people live in areas or get access to the Internet while traveling where there is inconsistent coverage. Many times in the third world the power is not always on and can go off days at a time.

My site is hard to find, because I do not promote it on social media, so people do not say mean things about me. One someone has found one of my pages, I want them to be able to find me again and learn about me, even when they cannot connect to the Internet. Another point is that although downloading the same thing again and again like this is less efficient, it is not very demanding relatively, because not only does text take up very little space, it compresses very well and I have that setup for my website. This is also why I recommend people to download my books and other free media I am giving away with a few restrictions, depending on whether is is a book, a set of photos, designs, or music.

I really recommend anyone making use of the Internet consider worst case scenarios, because computers always fail, at least sometimes, so be sure your content works, even when other things will inevitably break. I do not depend upon Javascript and use no server side languages like PHP, Python, or Perl and do not use a CMS like Wordpress, both to make my website more secure, but I also like to rely on as little software as possible, so that there are fewer components that can fail. Many people have learned this the hard way when they have used

point and click web design services that end up not delivering good results or invested heavily in Adobe Flash technologies that have never and will never work on any iPad or iPhone.

I got bitten by this recently, when I used a third party hosting, for my files, to make them load faster in other part of the world, but they locked my account without telling me and I only owed $2, but the credit card number changed, so they decided to disconnect my service. I try to do as much as I can myself, because everybody nowadays, where I live, expect huge amounts of money for little to no service, so much so that I truly believe their greatest fear is doing their job properly. Instead of using the Internet, to improve oneself and learn more, people are depending on the Internet, so that they don't have to bother to learn anything, in the first place.

3.8 Ideas for Optimizing a Website (from My Experience)

Optimizing websites means making them load faster, than they would normally, usually at the cost of something else. It is complex and not done by default, because it varies widely, depending on how you design your website and there are often negative side effects, that come with the higher speeds, that you have to be able to accept.

3.8.1 History of Website Development Techniques

When I first started building my website, back in July of 1998, you either made a bare bones website, or you hacked together one, by making a static design in Photoshop, cutting the images it up into pieces and stringing it together, with the web equivalent of a static spreadsheet. This usually required a number of expensive Adobe and/or Macromedia titles (Adobe bought out Macromedia a number of years ago) Eventually there was a better way to design, that evolved over time, where we could change the design, all in one place, by using stylesheets, plus including

separate specific commands, for each version of Internet Explorer.

Another way, that solved many of these problems, was to use an entirely different technology, owned and controlled by one corporation - Macromedia, and then Adobe. This was called Flash. What it allowed you to do, that was very difficult, with web pages, was to layout pages precisely and visually, like you do in desktop publishing. Originally designed just for animation, it took off as a tool mainly used for invasive and annoying advertisements plus it was used as a common format, for video, across Windows and Macs. It ended up being extremely slow and had many security problems. Adobe later tried to make it into a cross platform programming environment, but that failed, as Apple decided not to use it in their mobile devices.

One of the reasons why it never would have worked on iPhones or iPads, besides destroying battery life, was that most Flash based games or menus required your mouse, which there was not an equivalent in touch screens. There already was another well supported video format by then and there were plenty of games on the App store. A few years after the iPhone was released, we could get all the same effects, that were created in images with Photoshop in code, so this was a good way to start the optimizing websites, for Apple mobile devices.

The Apple mobile devices and (desktop or laptop) PCs (especially using versions of Internet Explorer before version 10) are designed very differently. With PCs, you basically design one version of your website with one design, at one size, one resolution, one orientation, one pointing device, and few problems with running out of memory or performance (being unresponsive).

With just supporting Apple devices, you now have (there are slight variations in the other iPhones in addition to the following): iPhone 5s, iPhone 6, and iPhone 6 plus, Apple Watch, iPod Touch, iPad high resolution, iPad 2 (low resolution), iPad mini (low resolution), and iPad mini high resolution, which, depending on your design, you need at least some minor adjustments, for most of these, in spacing elements on your website. You also have to give more physical space for elements, as fingers are much bigger than mouse pointers. You must also plan for portrait and landscape orientations, of each size. When you make icons, for them, to show up on the home screen, you need to create a half a dozen different sizes, for the different devices.

One of the biggest problems, on mobile devices, is that you need to increase the resolution, of your content, by 4 times (which means it can be up to 4 times longer to download). On mobile phone networks, there is a high latency, meaning that it takes longer, for each file download, so that when you have 2 files of half the size as one file, the one file will download much faster. And many of the mobile devices will not keep your website in the users cache and even moderately sized photos (ones you haven't optimized for the web) are too big to display. And that size limit is on the uncompressed version of the photos, so, unless you make the photo small enough in physical size, you cannot make larger sizes work by compressing them more.

There is also a huge difference between what different years models of Apple devices can handle performance wise. Another thing to consider is not only do mobile devices have severe limits, on how much power you have, to run your website, so do all version of Internet Explorer. Many people try to add features, to Internet Explorer, via Javascript, but the results are unreliable and they slow the web browser down so much, that it often crashes or locks up on you (and they make your site inaccessible to blind users). And many of these devices and characteristics cannot be targeted specifically, without hacks. And you also have to design for the third world infrastructure.

Because of these higher resolution images, multiple custom fonts, plus using all sorts of automated third party code, to solve many of these problems listed above, bring many websites to overs 2 MB. You should aim, to do all those things above, but deliver it in 1/4 that size, or 500 KB (or less). There are many, some very easy ways, to speed thing up considerably, but many of the tradeoffs will not be acceptable, to large companies or companies, that are unwilling to have their website look different, on different devices.

There is also the issue of delivering the same features of a regular website, so that everything can be done, on the mobile website, as the desktop website, even though the space is both smaller, in the screen size, while you have less usable space, because you have to add extra space, for fingers. Most people will wait between 2-5 seconds, before they move to another website (and this is on the slower speed network connections). Your devices website must be visible, within less than a second, on a fast connection, or you will lose visitors. And Google rates your website, with many characteristics, to determine who shows up first, when someone

searches for your website. One of the things Google is now looking for, as part of its criteria, is how fast your website loads.

You have to buy multiple separate devices to test the performance. Many of the new graphics effects you can now do, in code, can slow down your website, depending on the device and you can't find that out for sure, unless you try on real devices (not emulators). Another factor, is that, when testing a device, for its support, of a given feature, many times it will answer yes, even when it has so many bugs, that it is not dependable enough to use, or the device lacks the power, to use much of that feature (like SVGs or trying to use a bigger cache).

And you cannot use mouse related effects, like the mouse hover, and on most of the Apple mobile device finger gestures are already used by Apple and over riding them requires changes with each version of the Apple's iOS operating system. You also run into trouble, if you try to make your website full screen.

And then we have a huge number of additional problems, when we bring in Android devices. The good news is that most Android users do not use the web, app store, or buy anything. And there are two totally different types of Android, that are not even remotely alike.

3.8.2   Instructions for General Optimization

First, make sure you have a high speed and reliable website provider and a domain name (do not use fancy extensions, as these confuse people, and they question your reliability, because of this). These features are only slightly more expensive and can be affordable to even individual hobbyists. I use Register.com, for my domain names and inmotionhosting.com, for my hosting and have been very satisfied, for many years. The only bad thing said about either one would be that they are a little more expensive, than the competition.

Make sure you pay ahead and all your contact information is up to date, so you don't let your domain name expire and have to buy it back, for thousands of dollars or more. Also, do not search for different domains, until you are ready to buy them, because they can be bought up, by someone else and sold back to you, for lots of money.

Make sure you do not get a free domain, with your hosting service. Buy and own your domain name directly, so that you can more easily move to another hosting company, if you are dissatisfied with your service. Most hosting services will have an uptime, of at least 99%, which is not anywhere near as good as it seems - that means it is down for days at a time. Your website should go down, at the max, 5 minutes and only late at night, even that only for maintenance (and only after being notified by e-mail days ahead of time).

Determine what your target demographics are and watch these over time. Only about 1% of visitors will actually listen, to what you have to say, if you are lucky. Concentrate on getting quality links and visitors, so that you have higher percentage of users, who actually want, what you are giving them. Make sure there is something valuable that you are offering your visitors, as they will not stay long, just to look at your pretty designs.

You should follow Google's guidelines, on how to set up your website, so that you can get high results, without doing things they don't like. If you use these "forbidden" techniques, you will get you temporary increase in visitors (not necessarily many customers), because Google will lower your ranking considerably and can even remove you permanently from Google.

You want to use as few moving parts as possible, so if you can do it without that extra application, library, or code your website will be much faster. More complicated does not mean better. Then you should remove as many images on your website that you don't absolutely need.

Avoid CMS like Word Press, as you have to update them, or else they are easy to hack into (and get you knocked off Google). Word Press is also known to not support Internet Explorer very well. One of the commonly used parts is called Bootstrap - it weighs in at something like 2.5 MB, before any of our additions are added. Another popular library is called JQuery, which can make your website slow on some mobile devices.

There are also CSS grids, which you will find out later, make adding components more difficult and there is something called a CSS pre-processor, but it is more complicated and less efficient than writing your own CSS. If you cannot master CSS, within several years, you need to hire someone else, to make your website for you. You can also buy stock images, so that your website will be guaranteed to look unprofessional and cheap.

One thing you do need to buy is a custom font. When I start a new design, the first thing I do is set the font, to one of the fonts I purchased online. You have to buy or rent professional fonts. You cannot use fonts, on your computer, like you can in images or PDFs, because you are basically sending the entire font, to every visitor, when using it on a website.

There are free fonts, which I recommend you avoid. There are also font services, where they take care of the technical things, but your font stays on their server, but having a high performance website means no relying on other websites for yours to work. Whenever their site goes down, yours does too. They also require a monthly fee, whereas you can buy a font outright at a one time price. You usually buy them based on how many domains you use or the number of visitors you get per month.

Fonts are very tricky, as some of the most important characteristics are not immediately visible. Stick to standard styles, that look more traditional, or what they call clean. Avoid ornamental, decorative, or fancy fonts, as they are harder to read. A website is design, not art. The purpose of a website is to "get to content". Design is not art, art is the way something "looks", whereas design is "how" something works.

The way I make my fonts load faster is that I only use the normal font style. Most professional fonts have different fonts, for bold and italic, but you can reduce you font load to 1/3 the size, by not using bold or italic and not linking in the other font files, on your website. I recommend using border-bottom, to emphasize text or make links stand out and you can get different style of underlining. You can also use different font colors or background colors, to draw attention to certain text elements. These are old features and should work reliably in almost any browser - even old Internet Explorer.

3.8.3   Instructions for Image Optimization

This now brings us to images. Most websites, that present information, or are a collection of documents, generally have the majority of their download weight in images. There are many options, to make images load faster, that will work with current browsers: PNGs, SVGs, and Font

Glyphs. Most people think of PNGs are solely for drawings and artwork. Many people do not know that when you save as a PNG, you can further optimize it, with no visible loss in quality.

Most people use JPEGs, for most graphics, but you permanently lose huge amounts of data, when you save pictures, in this format, each time you save them. One of the tricks I use is, that, I use PNGs, instead, as you can further compress PNGs, by reducing the amount of colors, to just before you see a difference. You can usually save 1/3 of the file size with no lose of any sort, even with the full 24 bit color, just by dragging and dropping, in an applet and waiting a few seconds, depending on the size.

The same program can optimize JPGs, mainly be removing all the information about how you took your photo, the GPS location, etc and save about 10%- 1/3 the file size. The programs I use are ImageOptim, for lossless compression, for both JPEG and PNG, and then ImageAlpha for reducing the number of colors in PNGs. You have to export them, from the menu in, ImageAlpha to save the file, so you don't delete your original image.

An SVG is a different kind of picture entirely. It is called a vector image, which means, instead of saving the image, as a series of dots, it is represented, by mathematical formulas. SVG is a good format, for high resolution devices, because it is same file, without modification, will be seen as high resolution, as the device has, so making it bigger in size does not make it bigger, in download time/file size, nor does it distort it or make it look worse.

SVGs don't work well with photos, as such and not with many detailed illustrations, but you can get interesting and possibly workable results that at least look good and convey similar information, with the highest quality. The bad side of SVGs is that the memory usage and file size is based on the complexity of the image, not the physical size, so be sure to not make it too complicated or it will not display right.

There is a way to convert bitmaps, like photos or drawings, into vector via bitmap tracing. It works best with just 2 colors - like black and white and does good at outlining a photo. Inkscape is a free drawing program, that saves natively as SVG and is free for any use and works well on Windows, Macs, and Linux. I use it to convert bitmaps into vector (SVGs). Make sure you delete the picture or photo (underneath and covered up by the tracing), in the app, after tracing and

before saving, or else the original file will still be included, in your resulting image files. Also, make sure you resize the image to, a normal sized image like you would use for the web, or else it may not display right. You have to do this in Inkscape, as if you change the numbers, in the code, it will not work right.

There are three more ways that can be used together to further reduce the file size, without visual loss.

First, if you see the resulting file is much more than a few hundred kilobytes, go back into Inkscape, select the graphic, and choose "simplify" from bottom of the "path" menu. Do this a couple of times, until you can no longer get by, with a more rounded version. You also can undo this easily, if you do it right then and there. Just making a what appears visually, to be only a slight simplification and sometimes actually makes the graphic look better, will make the file much smaller and simpler, which will make it load faster and easier.

Then you can drag and drop it into a free program, called SVGO-gui, for SVG Optimizer and your file will be much smaller, maybe 1/3-1/2 the file size, but it should look the same. If you use are giving it a file produced solely by tracing in Inkscape, the resulting picture will look the same. It doesn't preserve things like transparency and layers, though.

Then, on your website, you can access your .htaccess (hidden file), in your public_html directory and add a couple lines to it, or go under optimize, in your cPanel website manager program. They options for the .htaccess file are listed here:

```
<IfModule mod_deflate.c>
    AddOutPutFilterByType DEFLATE
    text/html
    text/css
    application/javascript
    image/svg+xml
    application/xml
    text/rtf
    text/plain
    font/opentype
    application/x-font-ttf
    text/x-component
    application/vnd.ms-fontobject
</IfModule>
```

This will compress, with no data loss, all the common files you can compress. The SVGs, for example, should be reduced, again, by between 1/5 to 1/2 the size, even after the previous optimizations.

The hard part is linking in the SVG. You can make a bitmap fallback PNG, by saving to bitmap in Inkscape and you can further reduce the file size, as I have written above, for PNGs. You can either link them and size them via the HTML by or by CSS alone. The following is how to do it via HTML. There are a couple additional ways to do this, but they have even more severe trade-offs.

```
<object id="flat-design" type="image/svg+xml" data="/challenges-svg/ben-challenge-simplify-
optimized-svgo.svg" width="75%" height="75%">
</object>

<img class="svg-fallback" src="/ben-challenge-fixed-fallback-578.png" width="578" height="600"
alt="benjamin-newton challenging projects logo" />
```

Be sure to include, in the SVGs themselves, the following (adjust to the correct size). First, open them in a text editor (this is after you complete all the previous optimizations) and add the following line (be sure to remove the part of this code that is already there). Anything after the SVG tag should all stay exactly as it is. It will look mostly like a bunch of numbers and may contain some text.

```
<svg xmlns="http://www.w3.org/2000/svg" viewBox="0 0 693 720"
width="100%" height="100%" preserveAspectRatio="xMinYMin meet">
```

The final part is only showing the SVG, to high resolution devices, by adjusting the display and visibility CSS properties, showing the SVG version only to high resolution display by hiding the SVG version behind high resolution media queries (this should also, in practice, hide them from most users devices with the SVG bugs in them). This is the trickiest part. The following is a rough

example: do not simply copy.

```
img {
display: block;
visibility: visible;
margin: 0 auto;
text-align: center;
background-color: white;
color: black;
width: 90%;
height: auto;
max-width: 500px;
max-height: none;
}

.flat-design,
object
{
display: none;
visibility: hidden;
width: 0px;
height: 0px;
padding: 0px;
margin: 0px;
}

.svg-fallback {
width: 90%;
height: auto;
max-width: 500px;
max-height: none;
display: block;
visibility: visible;
padding: 0px;
margin: 0 auto;
border-width: 0px;
background-color: white;
color: black;
}

@media
only screen and (-webkit-min-device-pixel-ratio: 2),
only screen and (min--moz-device-pixel-ratio: 2),
only screen and (-moz-min-device-pixel-ratio: 2),
only screen and (-o-min-device-pixel-ratio: 2/1),
only screen and (min-device-pixel-ratio: 2),
only screen and (min-resolution: 192dpi),
only screen and (min-resolution: 2dppx) {

.svg-fallback {
display: none;
visibility: hidden;
width: 0px;
height: 0px;
padding: 0px;
margin: 0px;
border-width: 0px;
```

```
}

#all #header .flat-design,
#all #main .flat-design,
#all #footer .flat-design,
#all #header object,
#all #main object,
#all #footer object
{
width: 90%;
height: 90%;
max-width: none;
max-height: none;
display: block;
visibility: visible;
padding: 0px;
margin: 0 auto;
border-width: 0px;
background-image: none;
background-color: white;
}

}
```

For using font icons, most people think to combine the pictures you see in decorative fonts into their own custom font, (because fonts are basically vector graphics too), but I found a way to save more space. There are already a huge number of icons, as part of the standardized Unicode font specification, on your device, in some of the default fonts. You go to a website, that lists them, you copy the icon and then paste it into your text editor. Just make sure you serve the HTML and CSS as Unicode – this can be done by editing the .htaccess file.

The way I set it up, it will show up on Apple's devices and Windows 8 and higher devices. On Windows, the icons will be two color, like the text you have styled it in and, on Apple devices, the icons will be mostly full color. I use a similar way of hiding and showing them, behind media queries, as above. I do this because, if you see the icons, with an older browser (it is actually based on the OS, not the browser), they display as little boxes. This is a problem, because this same effect happens, on pages, where you don't have the correct foreign language font, that doesn't have a Latin alphabet, like when you go to some Chinese or Hindi website. It just looks sloppy and like something is wrong with the page – that is why I hide it from browsers, that don't support it.

The full setup for this is in my Book of Secrets (Design Style Guide).

3.8.4   Some More Advanced Optimization Techniques

Some other ways to increase website speeds include CDNs, Javascript/CSS loaders, and putting critical CSS in the head part of the HTML page.

A CDN, or content distribution network, is a separate server that has mirrors around the world, so that it will load fast in the third world. You want to use a CDN for downloads and things that will not change often, because the most frequently you can set it to update is every 15 minutes. You can also test your website speed online on Google and on several other websites for free.

I use Rackspace, who relies on Akamei's network, which is the best in the world, has the most overseas locations, and is used by major companies like Apple. This is not very expensive. I use Rackspace and they will sell you service, based on how much you use, which is, for me, several dollars a month. They are also very helpful and knowledgeable even though I have a small account.

Another technique, to make your website "seem" to load faster, is to include your basic CSS, in every HTML page in the header, so people won't see a blank screen, while they wait. I combine this with a Javascript loader, which allows your webpage, to load before the CSS or Javascript files are loaded. This also allows people to get simple version of my website, just by disabling Javascript. I also have it check for Android. This technology is free and called head.js.

Another more advanced technique is to use fastclick, to remove the 0.3 second delay, after clicking a link, on touch devices like tablets and smartphones.

3.8.5   More Information from Other Websites

- igvita.com
- Web Performance Today
- Catchpoint Systems Blog
- Website Optimization Speed Tweak
- HttpWatch Blog
- High Performance Web Sites Blog
- dynatrace.com Application Performance Management
- High Scalability
- Zoompf Web Performance Blog

3.9   Troubleshooting for Web Designers Checklist

The following checklist gives you what to do in what order to fix most web design problems. This is strictly for web designers and not for web developers. It will be virtually meaningless to non-designers and would work poorly for developers.

1. Look at every file closely after making any change and uploading to see if any visible errors exist
2. Make sure you are not working on a backup copy of the same file or another one of the same kind open where the code looks similar
3. Check file paths and file names of HTML, CSS, Javascript, and all images, fonts, and other assets, to make sure files really exist at those exact locations
4. Make sure you have use the correct kind of path: absolute or relative to file locations and if relative relative to the correct file
5. Make sure server side includes are pointing to the correct location
6. Make sure all files are uploaded to appropriate locations

7. Check for syntax errors like closing media query or other rules
8. Check to make sure prefixed attributes are all the same
9. Make sure there are not any hidden unicode characters that are affecting code commands
10. Look to make sure there are not any other rules affecting styling in web browser developer tools DOM tree and add any necessary css rules to correct it