“The display is the computer.”

Jen-Hsun Huang, 2002

“Good design is problem solving.” Jeffrey Veen

“[Users] make their credibility-based decisions about the people or organization behind the site based upon the site's overall visual appeal.”

Stanford Persuasive Technology Lab

“Design is not just what it looks like and feels like. Design is how it works.” Steve Jobs

“Where there is no difficulty there is no praise.”

Samuel Johnson

Developers are from one planet

Designers are from some other planet

Users are from earth

"IT professionals have a responsibility to understand the use of standards and the importance of making Web applications that work with any kind of device."

- Sir Tim Berners-Lee

inventor of the world wide web

What is she talking about?

- Why good code matters: **code snob = good**
- Report from the trenches: **Touchstone/CAMS**
- Workflow: **MAP, shared patterns, collaboration**
- What we need from you: **...**

Tag soup and spaghetti code ≠ nutritious

Why good front-end code matters

“The display is the computer.”
Jen-Hsun Huang, 2002

Hand and Upper Extremity Service

Refer A Patient

Physician's Name:

Physician's Office Address:

Physician's Email: Physician's Telephone:

Patient's Insurance Carrier:

Patient's Name:

Patient's Address:

Patient's Email: Patient's Telephone:

Tell us about your patient's case history

Is this injury the result of an accident? NO If **YES** type:

Preferred Appointment Date/Time: M/D/Y TI AM Submit Reset

Ugly = **Costly**

```
<div style="border: 1px solid #cccccc; padding: 8px;
align: center; background-color: #f0f0f0">
<div id="labelOperationErrorContainer" style="display:
none"><span class="error"><span class="errorMessage"
id="labelOperationErrorMessage"></span></span></div>
<table width="100%">
<tr><td>
<div class="formtitle" style="padding-bottom: 3px; font-
size: 13px;">Add Labels</div>
```

Ugly = **Costly**

```
<div align="right" id="wwctrl_processForgotPassword_0">
   <input type="submit" id="processForgotPassword_0"
value="Submit"/>
</div>
```

MIT TouchStone - Collaboration Accounts

home

Forgot Password

Email:

Submit

Ugly = **Costly**

Kludgy (yet valid) CSS fix, which requires listing each submit button's unique ID:

```
#wwctrl_Activate_0, #wwctrl_AddAlternateSecurity_0, #wwctrl_AdminAddAccount_0,
#wwctrl_NameUpdate_0, #wwctrl_processForgotPassword_0,
#wwctrl_processForgotPasswordChange_0, #wwctrl_ProfileChangePassword_0,
#wwctrl_SelfRegister_0, #wwctrl_ResendActivation_0, #wwctrl_UpdateName_0
{
   line-height:0pt;
   margin:-20px 0pt 0pt;
   padding:0pt;
   width:2em;
}
```

HTML

```
<div class='blog'>
  <div class='entry'>
    <h1>Why CSS Matters</h1>
    ...
```

CSS

```
div.blog {
  float: left;
  width: 100%;
  font-family: verdana;
  ...
```

New wrinkle = **AJAX**

Now we're not just designing the user interface, but *user interactions with page behaviors.* Now we're doing **user experience design.**

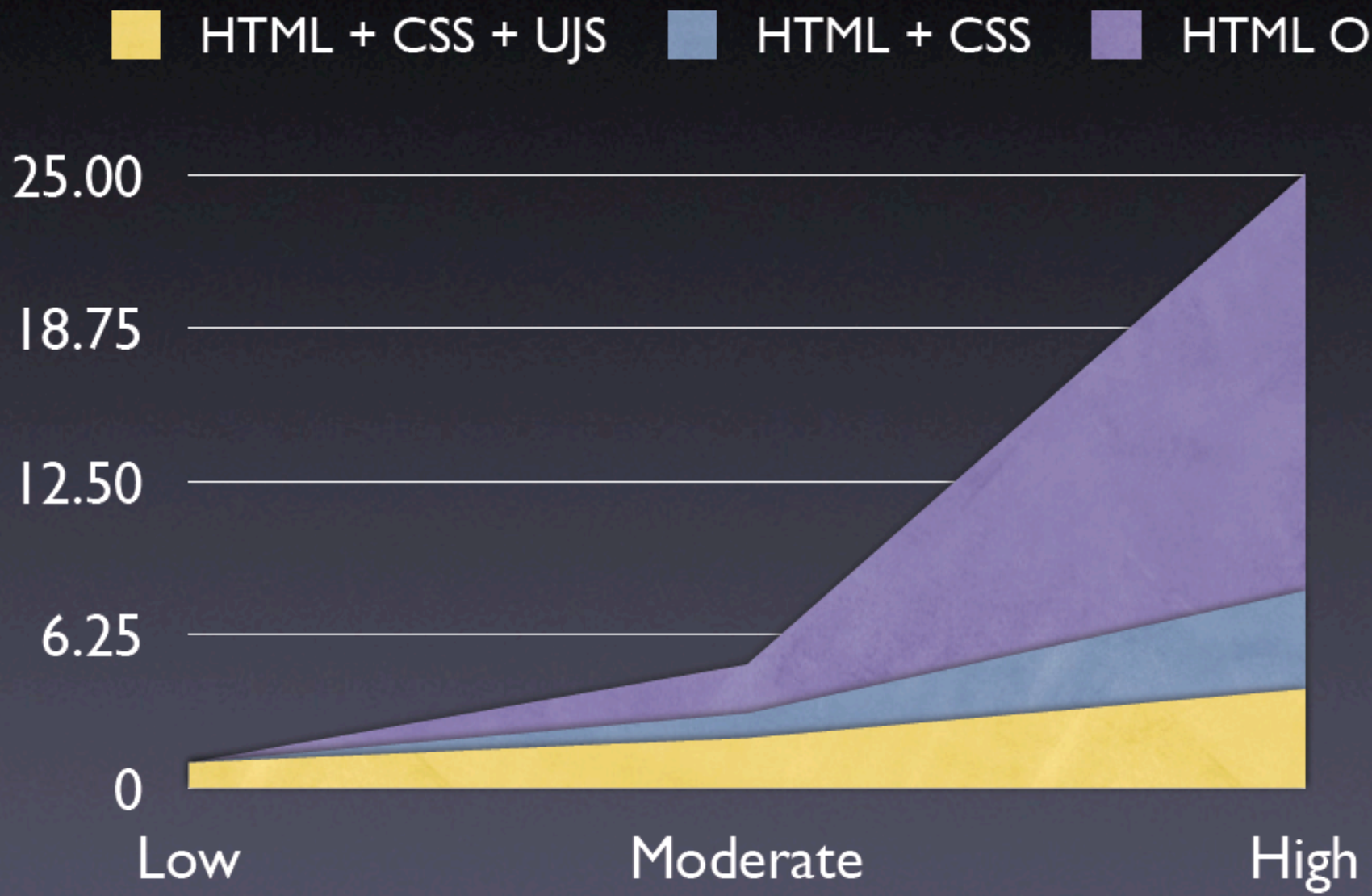
```
<a href="javascript: doSomething();">click for fun</a>

<a href="#" onclick="doSomething();">click for fun</a>

<a href="arealpage.html" onclick="doSomething(); return
false;">click for fun</a>
```

```
<div class='blog' onClick='showEntries()'>
  <div class='entry'onMouseOver='showPreview()'>
    <h1>Why CSS Matters</h1>
```

The return of tag soup

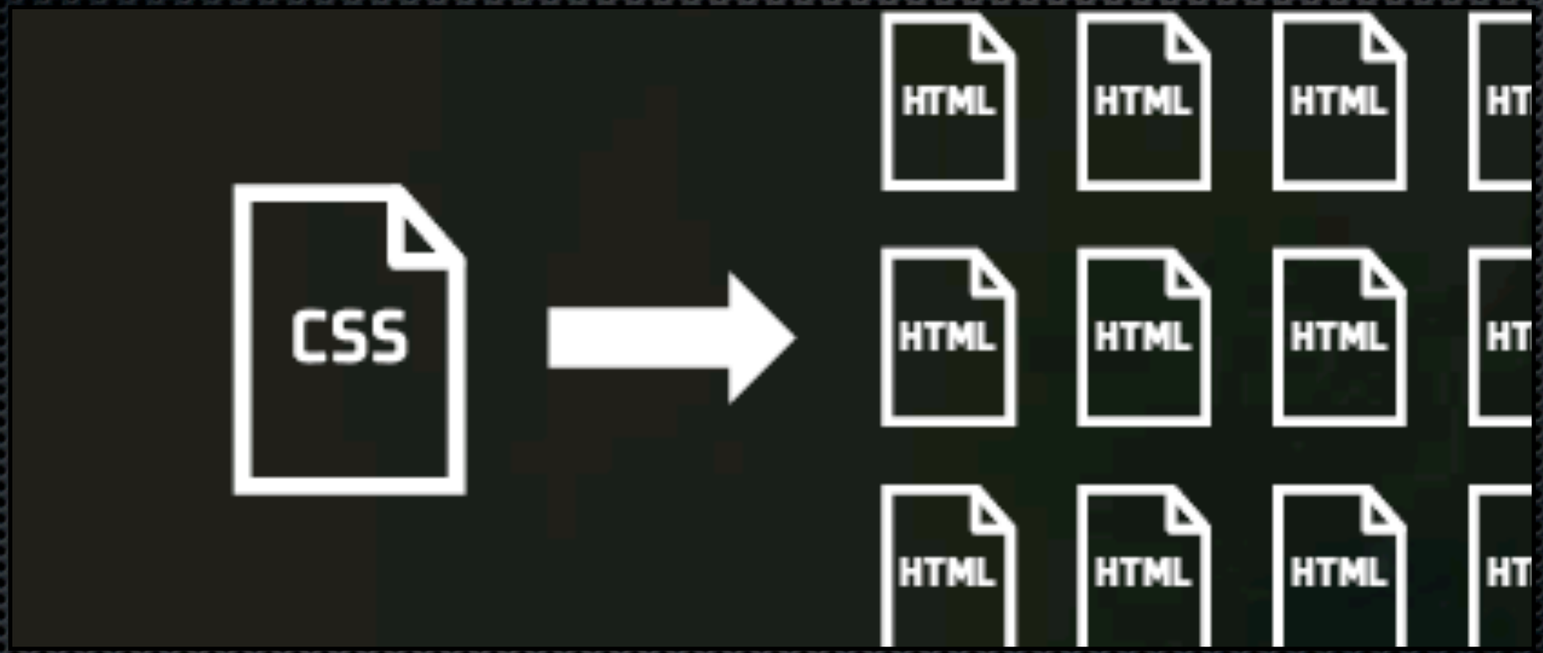
Really simple

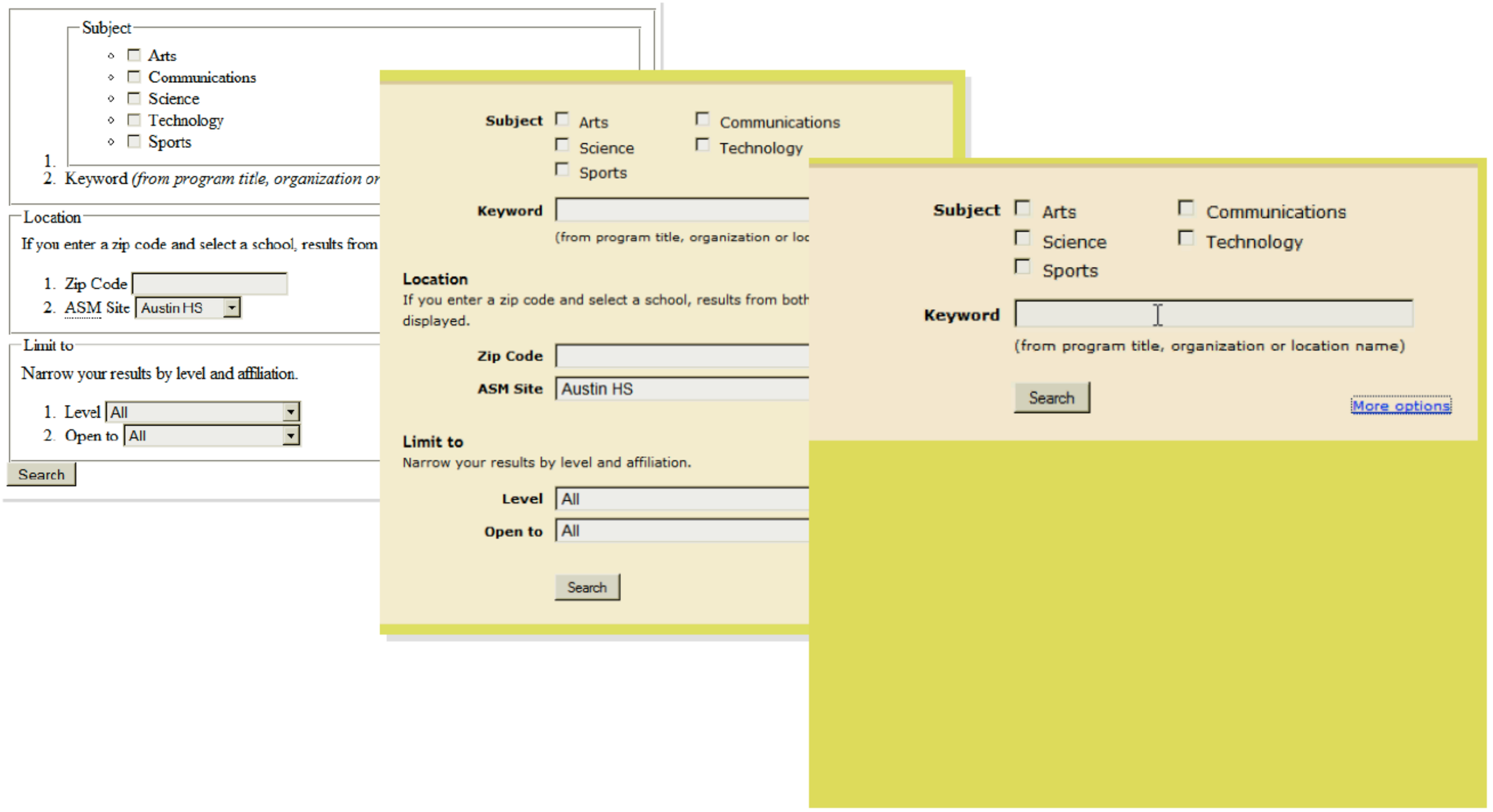
Do you like getting things delivered on time and on budget?


HTML + CSS + UJS
HTML + CSS
HTML Only
25.00
18.75
12.50
6.25
0
Low
Moderate
High

Web standards provide:

- future-proofing
- **device independence**
- validation
- **time and cost savings**
- no learning curve on handoff
- **maintainability**
- separation of concerns
- **accessibility**
- searchability
- **lighter pages = faster loads**
- infinite style combinations
- **user customization**


CSS
HTML
HTML
HTML
HTML
HTML
HTML
HTML
HTML
HTML
HTML
HTML
HTML


Subject
Arts
Communications
Science
Technology
Sports
2. Keyword (from program title, organization or
Location
If you enter a zip code and select a school, results from
1. Zip Code
2. ASM Site Austin HS
Limit to
Narrow your results by level and affiliation.
1. Level All
2. Open to All
Search
Subject Arts Communications
Science Technology
Sports
Keyword
(from program title, organization or loc
Location
If you enter a zip code and select a school, results from both
displayed.
Zip Code
ASM Site Austin HS
Limit to
Narrow your results by level and affiliation.
Level All
Open to All
Search
Subject Arts Communications
Science Technology
Sports
Keyword
(from program title, organization or location name)
Search
More options

Don’t think like a bureaucrat

It could be **pretty and valid** and still suck.

Division of labor = basis of civilization

- Let us do the HTML, CSS, javascript, AJAX
- Workflow diagrams
- Process
- Usability & accessibility
- Developers worry about the back end - Java, Struts, PHP

- **Bring the UX people in early in the project**
  - Our role in the project could be either “high level”: process, oversight, usability;
  - or “in the trenches”: up to our elbows in code

Touchstone/**CAMS**

Report from the trenches

“Design is not just what it looks like and feels like. Design is how it works.” Steve Jobs

The site you are trying to access requires authentication.

MIT CERTIFICATES	KERBEROS TICKETS	USERNAME/PASSWORD
USE CERTIFICATES	USE TICKETS	NOT REGISTERED?
BEST FOR: **Students** **MIT Faculty** **MIT Staff** **Note:** You must have a certificate installed on your computer to select this option	BEST FOR: **MIT Staff** **Note:** You must have Leash installed on your computer to use tickets	BEST FOR: **MIT Collaborators** **MIT Vistors** MIT ID: Password: LOG IN
RENEW CERTIFICATE	INSTALL LEASH	HELP
HELP	HELP	

The MIT Login server authenticates you to secure MIT web services. Once you have authenticated successfully, you will be able to continue to your requested web site. Subsequently, when you visit other secure MIT web sites, you will not have to authenticate again, unless the web site requires that you do so explicitly.

MIT TouchStone - Collaboration Accounts

home

Recaptcha image and typed text do not match

Forgot Password

Email:

lwatts@mit.edu

Submit

MIT TouchStone - Collaboration Accounts

Home Help

Batch Edit Accounts

Search Criteria: Foo

	User ID	Sponsor/Group	MIT ID
☐	name@email.com	Foo	##Foo
☐	name@email.com	Foo	##Foo

« 1 2 3 » Show: 25 | 50 | 100 | All

Flag Deactivate Reactivate Delete

What we did right

- Got in early enough to have clear workflow diagrams in place & useful
- Close collaboration in meetings with the developers
- Scheduled usability
- Wrote valid, semantic code & CSS
- Made it generic for MIT-wide application

Snags we hit along the way

- File access - FTP to dev servers - took 2 weeks
- Had to rip out HTML from previously used templates - took extra time
- Insufficient separation of concerns - some inline HTML & CSS still lurking in .jar files

Lessons learned

- We need a more formal project acquisition and planning process
- We need more interoperability between developers & designers
- Current resources don’t allow us to have an “in the trenches” role in the project, we’re limited to “high-level” only.
- Must have better grip on the problem or business need that the project is trying to solve.

Process followed

- **Met with the development team to agree on:**
  - what technologies they would use (high level)
  - discuss the development environment: getting access to it, how they notify about rebuilds, etc.
  - discuss how we will collaborate, communicate, and how often (via email, meetings, stopping by cubes, etc)
  - outline who will be responsible for what

Process in an ideal world

- Workflow diagram - blueprint for pages, user flow, and error messages. Also, Ajax functionality & behaviors.
- HTML Prototype - easier to test than wireframes
- Preliminary usability review
- HTML/CSS handoff to developers (this part is where things get tricky)
- Developers hook up back end code to front end - without jury-rigs
- Functional review of pages to see if we need to tweak any styles and to check the error messages; correct any issues, verify workflow.
- Usability testing, QA, pilot

How many different ways do you want the problem solved?

What we're doing about it

"Good design is problem solving."
Jeffrey Veen

Why bother doing this?

- Improved internal workflows, happier developers & designers
- **Standardization + Collaboration = Efficiency**
- Data access for mashups, students, APIs, webservices that has a consistent set of specs
- **Patterns library that can be used by community at large, including mashup coders**

Separation of concerns

- Style vs. content
- Easy to read & maintain both
- Programmers focus on structure (HTML)
- Designers focus on appearance (CSS, graphics)
- Other programers focus on behaviors & interactions (AJAX, javascript)

Division of labor

- **Programmer/Developer:**
- Define a “behavior” in javascript
- Attach behaviors to HTML via stylesheet/spec from designer
- **Designer:**
- Define structure in HTML
- Define appearance in CSS

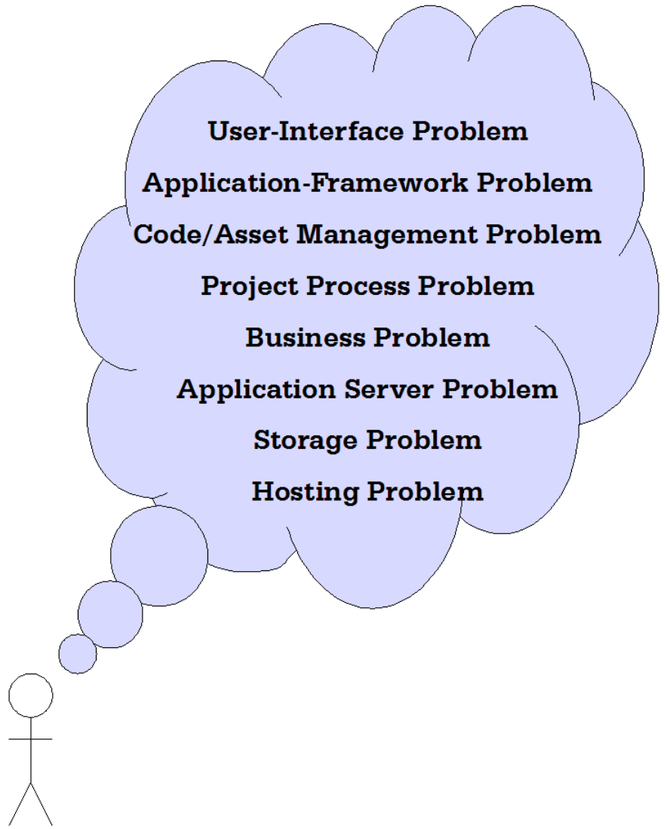
- **Both:**
- Plan user workflow and interactions
- Plan namespace
- Prototype
- Test
- QA

Already happening

- **jQuery standardization** - Oct. 30 meeting, another one coming up
- **MAP standardization** - SAIS already did it, we should be next
- Bi-weekly **UI meetings between Stellar/CCS and SAIS** designers/ developers
- Developers need to be included in this as much as possible
- **Shared patterns library,** which we are building up and expanding for wider adoption by developers & community
- Close collaboration with usability (DCAD) and ATIC lab (accessibility)

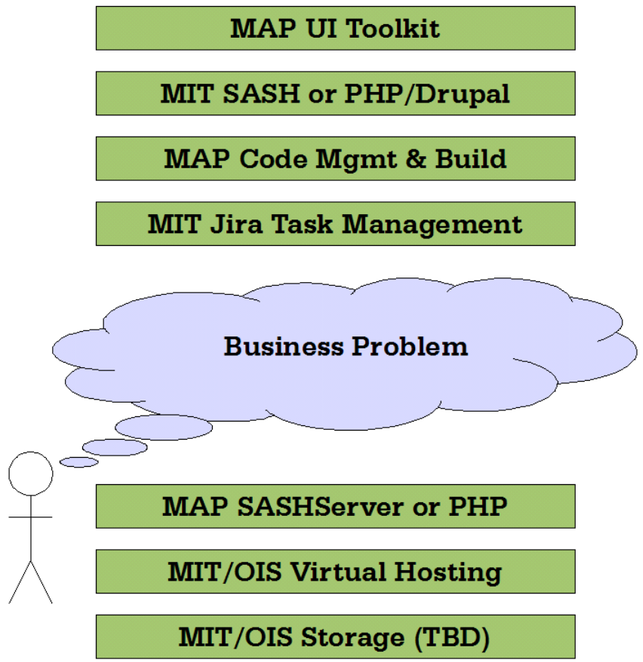
What Is MAP?

- A standardized approach to enterprise-web development
- A centrally supported set of web-application tools to help project teams reduce their work down to solving the local problem set

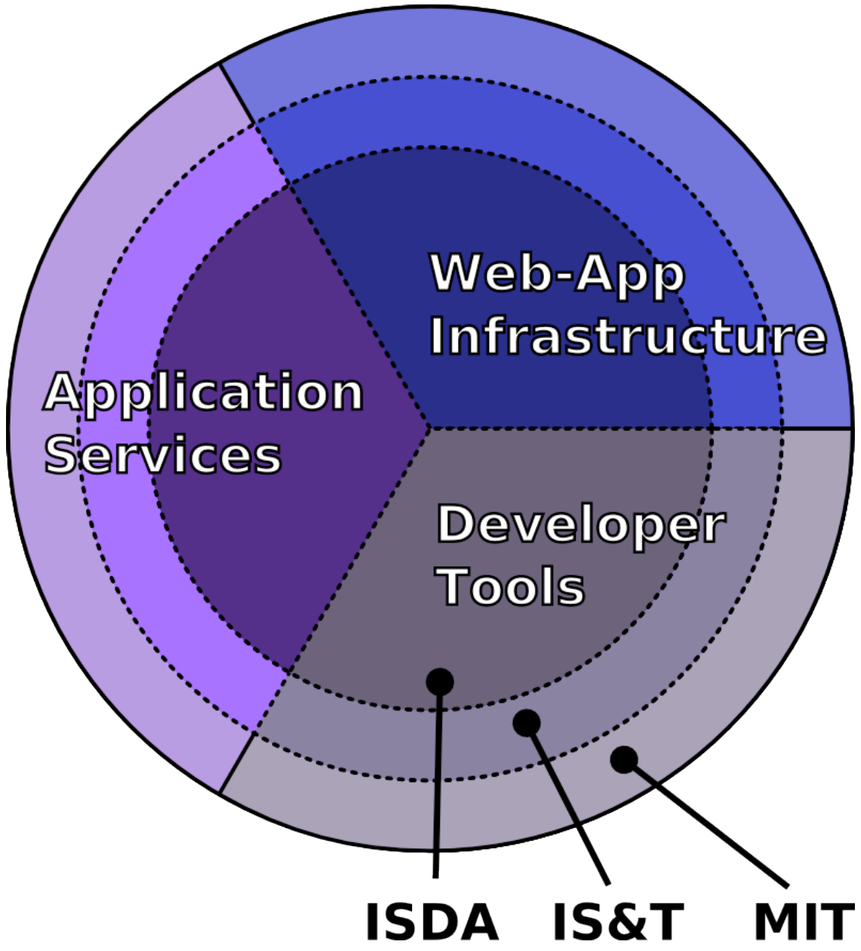


What Is MAP?

- Servers, code management, task management, and an integrated development environment
- Teams do not have to invent a new process or core architecture for every new product.



ISDA as the Foundation



- Standardize ISDA on MAP standards to refine the platform.
- Web-development projects become more efficient and skills can be transferred across teams.
- Roll successful components of MAP out to other IS&T teams and the MIT Community.

Developer Tools
Outstanding Issues

- Developers do not like to adopt standards that eliminate problem-solving tasks they enjoy.
  - Middleware framework (MIT SASH) adoption low.
  - MyEclipse IDE standardization low in ISDA, high in SAIS.
- Developers have embraced standard application servers and UI toolkits —areas they are not as invested in. MAP requires some realignment to go in this direction.
- Authentication to source-control and other code-management systems problematic: central SVN too feature-reduced.

Conclusion

- IS&T should do more to reduce a developer's problem down to the local, business problem set.

Action items - what we need you to do

- Set and enforce standardization as policy
- Maintain mandate & commitment
- Assign resources
- Support culture & attitude shift
- **Before you standardize on an enterprise-wide app - let us review it please**

“Where there is no difficulty there is no praise.”
Samuel Johnson

Props!

- Steve Landry
- Mike Berger
- Seth Seligman
- Laura Watts
- Mike Moretti

Questions, issues, complications?

jbink@mit.edu = all my fault