



# lean engineering

applying lean principles to building experiences

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LEAN DAY UX  
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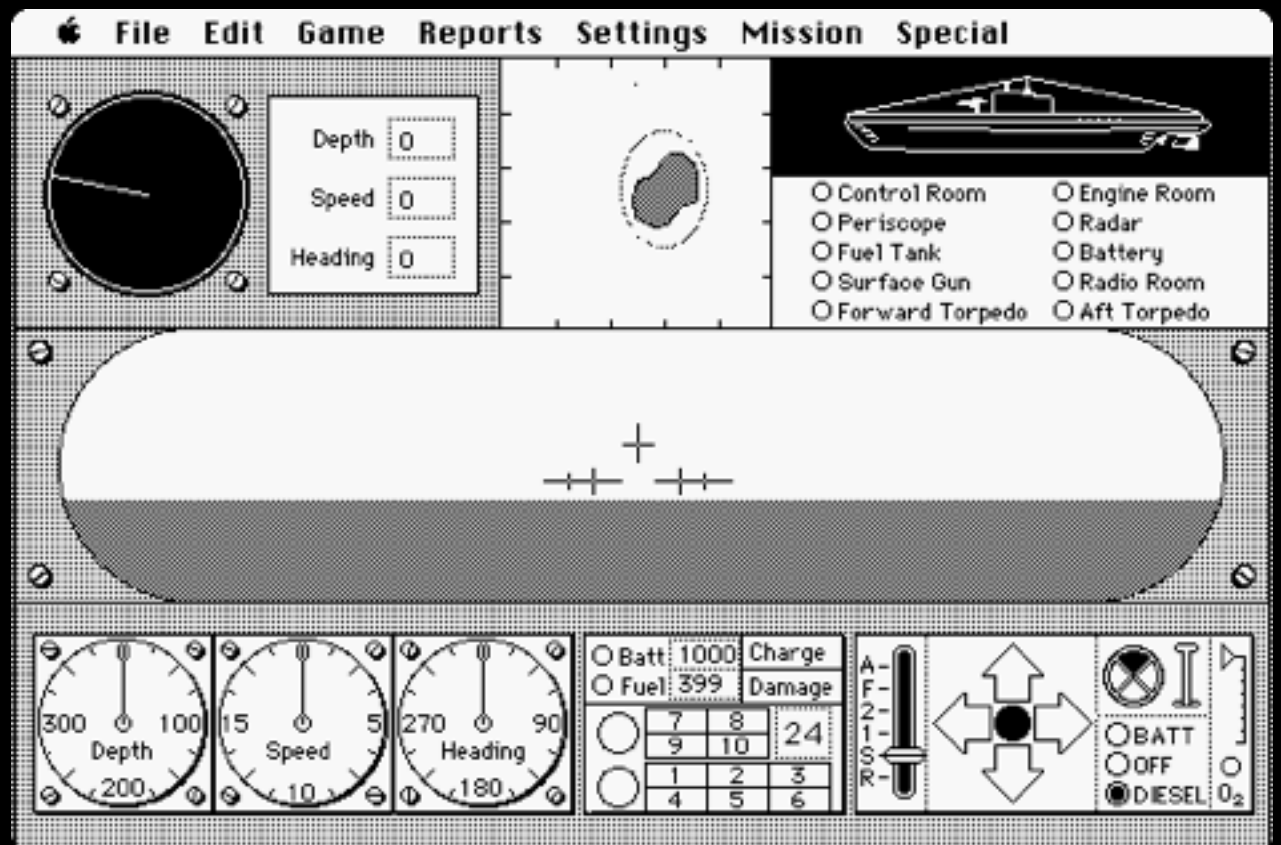
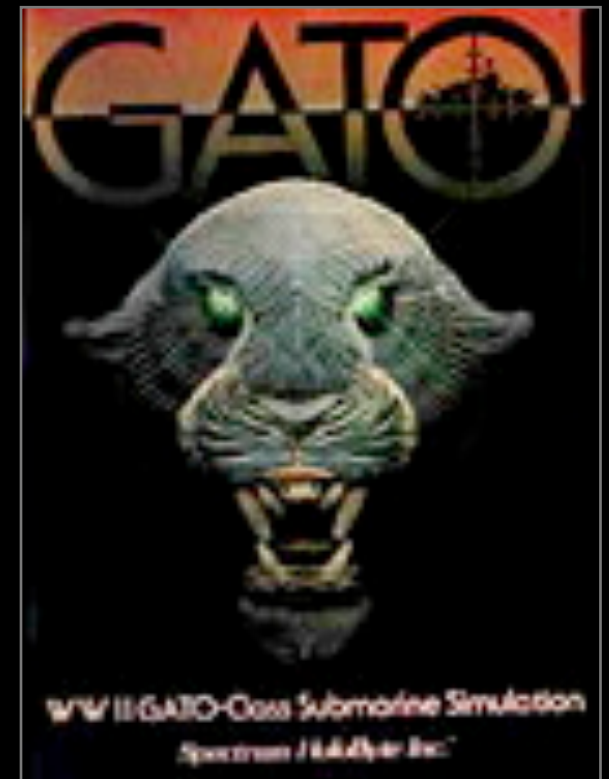
the way it was  
how we used to engineer experiences



building  
experiences  
circa 1985

merry band of three.  
dropped out of college for  
semester. prototyped our  
way to nirvana.

however...





# had to roll your own everything

(close your eyes & imagine)

no internet. no google. no  
blogs. no email. no blogs. no  
stackoverflow. no github. no  
twitter.

much of the software era  
has been about building  
from scratch.

of course open source was  
gaining momentum. unix.  
gnu. linux. perl. mozilla.



disconnected  
from experience

deliver to disk then to user

everything was focused on  
getting it perfect for  
stamping on the disk

no user in the loop.  
experience happened  
somewhere down the supply  
chain







software had a  
long shelf life

not dynamically updatable

designed for longevity

herculean effort to deliver

engineers ran the asylum

delivery dates drive the  
experience

BDUF & waterfall



# btw, agile didn't fix it

agile has been a big step in the right direction

but is an engineering discipline

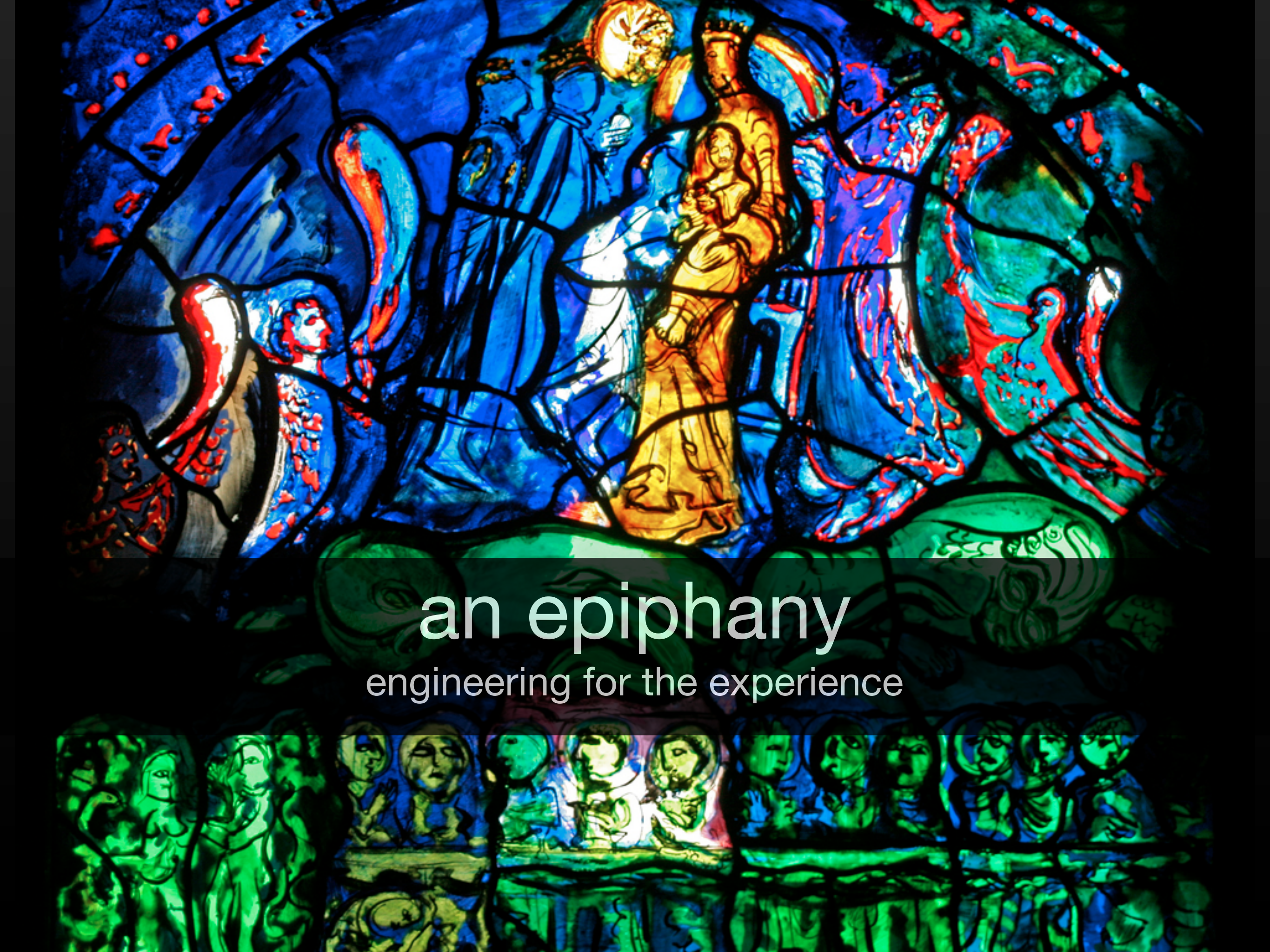
doesn't address the full life cycle

agile has become big business and sometimes collapses under the weight of “ceremonies” (process)

but agile is a good “engine” for delivery if you know what to roughly build

needs a brain...





# an epiphany

engineering for the experience





netflix way

customer is OOB

get code OOB as fast as possible

customer metrics drive everything

think it (quickly). build it. ship it. tweak it

fail fast. learn fast.

the epiphany...

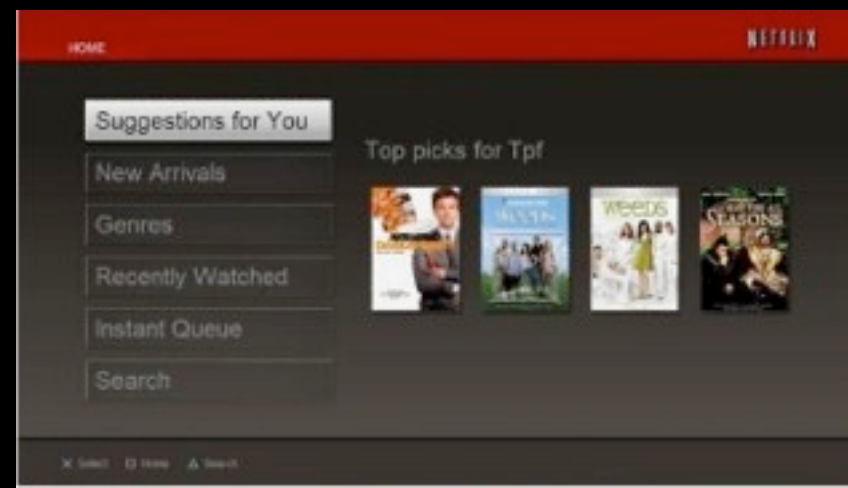


# design for experimentation

the ui layer is an experimentation layer

change is the norm

experimentation is not a one time event



*four different PS3 experiences launched on same day*





NIGHT

AND



DAY

paypal  
a study in contrast



paypal circa 2011

roll your own. disconnected  
delivery experience. culture  
of long shelf life. inward  
focus. risk averse.



# new dna inserted

jan 2012

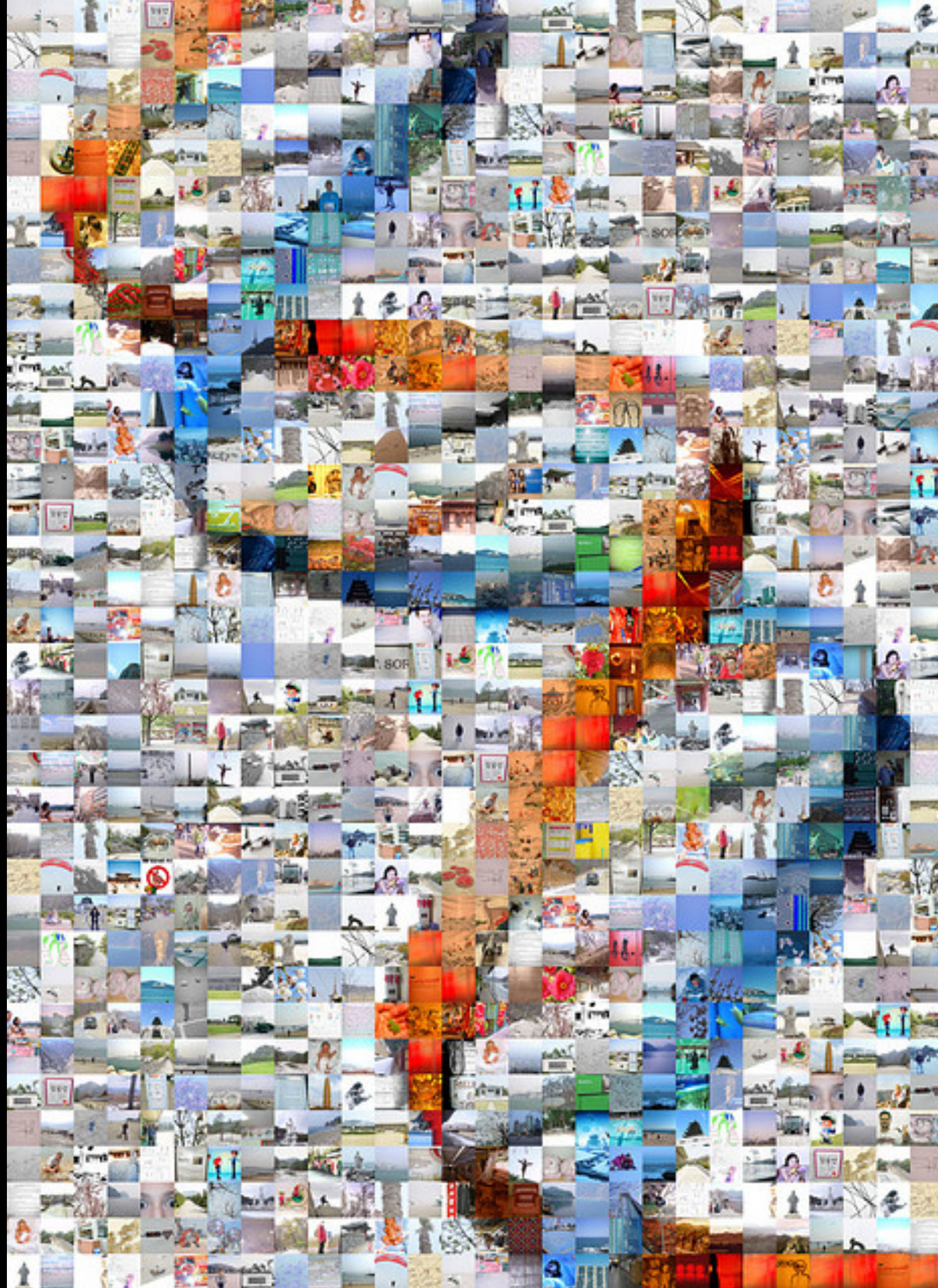
fleshed out ui layer that  
could support rapid  
experimentation

march 2012

david Marcus becomes  
president of PayPal

april 2012

formed lean ux team to  
reinvent checkout experience





customers – and increase sales.

updated automatically in late October.

new ones. Log in, click the Merchant Services tab, now you're a business that currently uses PayPal. This is coming back.

ML changes required.

change is working its way out

New button

[Buy Now](#)

[Add to Cart](#)

[Donate](#)

[Subscribe](#)

[Buy Gift Certificate](#)

## Three little helpers...

- Price Matching
- Return Shipping on Us
- Give Now, Pay Later\*

Finish your shopping with us

[Learn About Holiday Exclusives](#)

[See Terms & Conditions](#)

\*Bill Me Later is subject to credit approval.



### Buy into being safer

No matter where you shop, we'll keep your financial information private and protected.

[More about buying](#)

### Sell in fewer

Gone are the days... can request a sec

[More about selling](#)



I WILL FIND THE DROIDS I'M LOOKING FOR  
I WILL FIND THE DROIDS I'M LOOKING FOR  
I WILL FIND THE DROIDS I'M LOOKING FOR  
I WILL FIND THE DROIDS I'M LOOKING FOR  
I WILL FIND THE DROIDS I'M LOOKING FOR  
I WILL FIND THE DROIDS

# two principles

applying lean ux & engineering at paypal



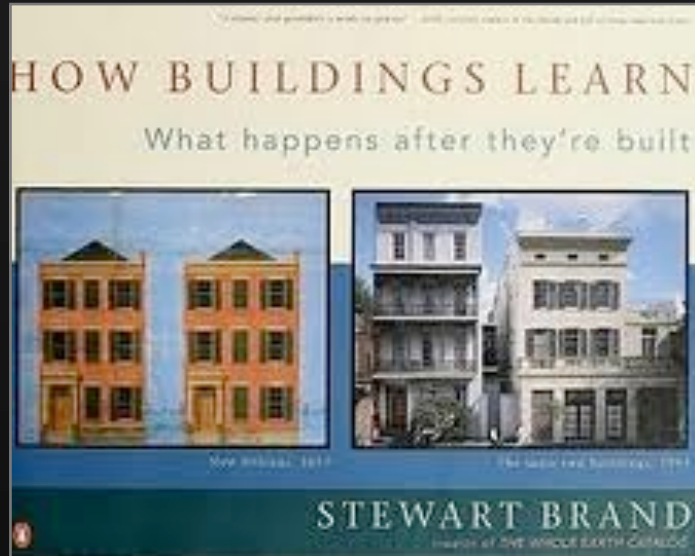




#1 engineer for experimentation



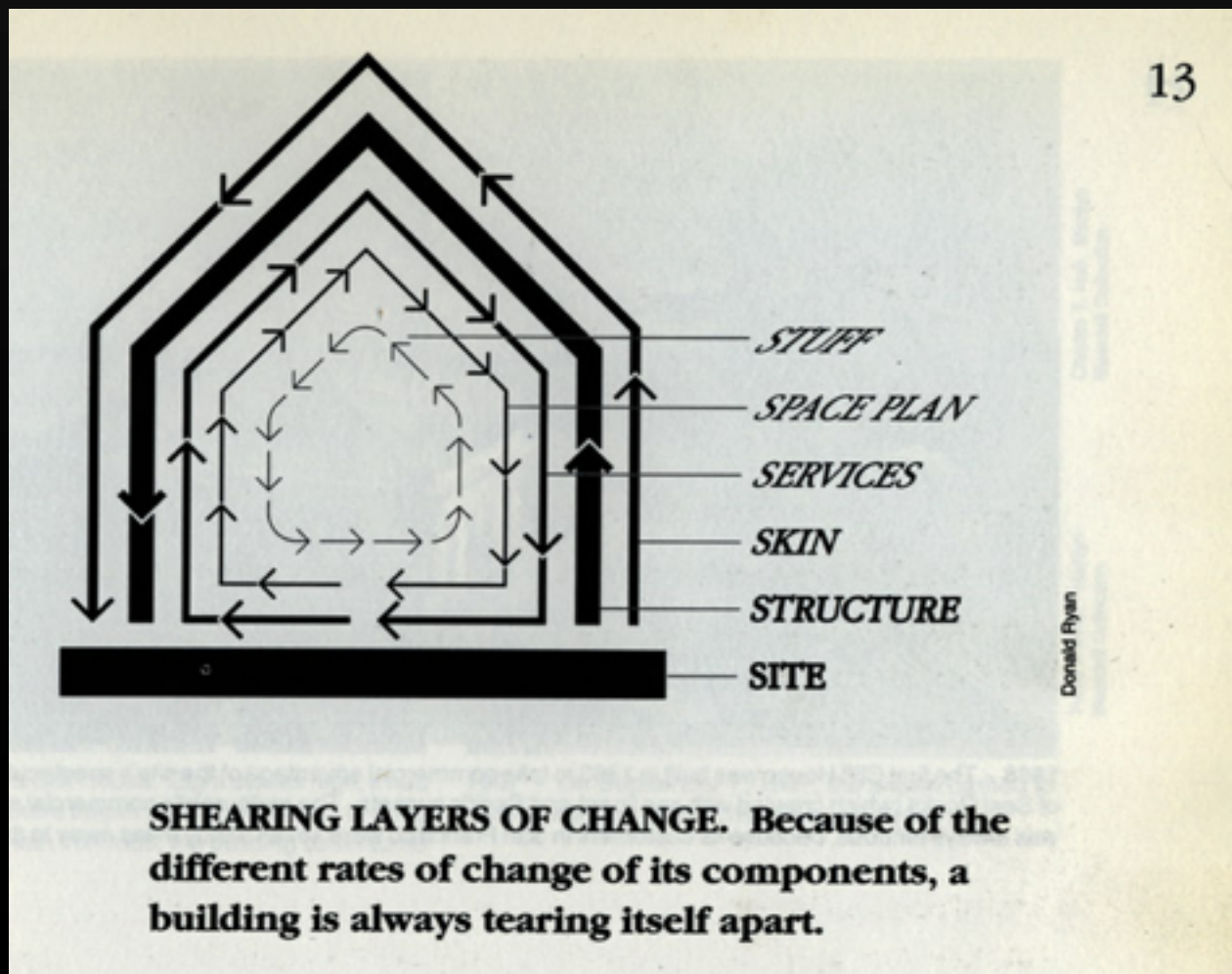
# experiences must learn



All buildings are predictions.  
All predictions are wrong.

There's no escape from this grim  
syllogism, but it can be softened.

*Stewart Brand*



Our software is always  
tearing itself apart (or  
should be)

Recognize that  
different layers change  
at different velocities



# engineer for lean ux

Lean UX - co-located



Product/Design team



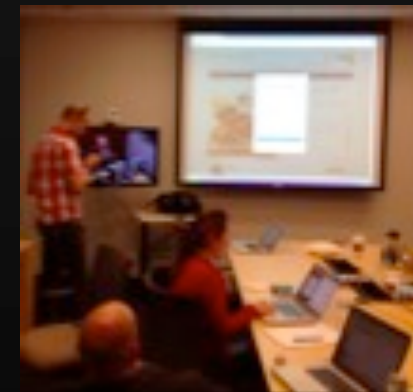
Whiteboard  
to code

UIEs



Code to  
Usability

Usability/Customers



And back  
again...

engineering stack should

treat prototype & production the same

allow rapid sketch to code life cycle

allow quick changes during usability studies (RITE)

support being the “living spec”



# stack circa 2011/early 2012

prototyping  
was hard

restricted  
capabilities\*

client

“ui bits”  
could only  
live here

server side  
components\*\*

server

jsp\*\*\*

simple change could  
take minutes to see

java

follows an “enterprise  
application” model. ui  
gets built into the “app”

\* assumed client developers were low-skill

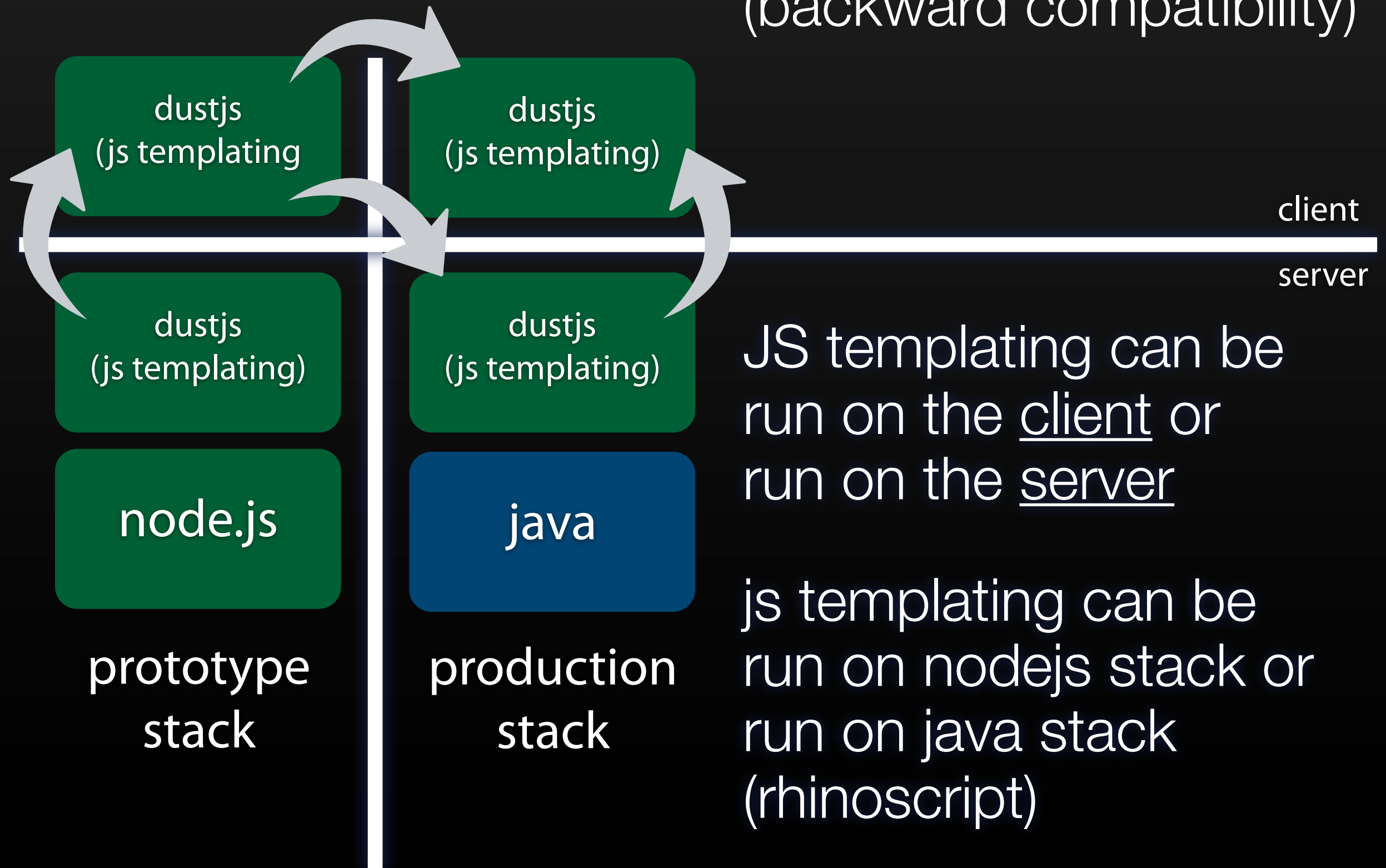
\* required server side java eng for simple client changes

\*\* java server pages. server-side java templating solution



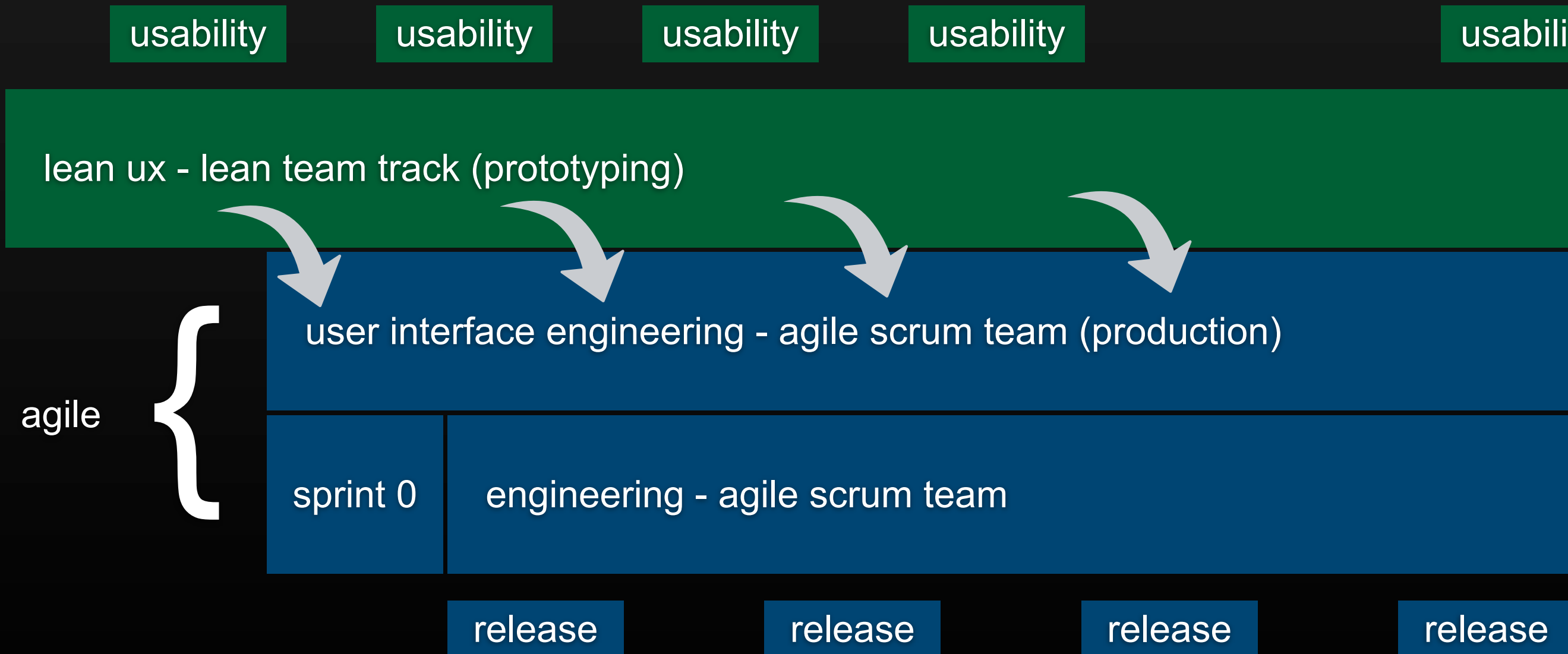
# ui portability

allowed us to refactor  
to get to the new stack  
(backward compatibility)





# enable a brain for agile





# github

SOCIAL CODING



#2 engineer with open source mindset



# use open source religiously

Bootstrap, from Twitter

express



BACKBONE.JS

UNDERSCORE.JS



hapi



{dust}



**jQuery**  
mobile framework

**jQuery**  
user interface



BOWER



# work in open source model

internal github revolutionized  
our internal development

rapidly replaced centralized  
platform teams

innovation democratized

every developer encouraged  
to experiment and generate repos  
to share as well as to fork/pull request





# give back to open source

we have a projects that we will open source

- node bootstrap (similar to yeoman)

we are contributing back to open source

- contributions to bootstrap (for accessibility)

- contributions to bootstrap (for internationalization)

- core committer on dustjs project



# using github for continuous \*

use github for continuous integration

starting to use github repo model for continuous deployment

- marketing pages

- product pages

- content updates & triggers into i18n, l10n, adaptation components



# summary

to support collaboration, shared understanding and continuous customer feedback we changed:

**technology.** but not for tech sake. we did it for the experience to support LS principles.

**process.** enabled lean ux and put a brain on agile.

**people.** revitalized our existing talent and started attracting new talent.



## presentation

[billwscott.com/share/presentations/2013/lduxny/](http://billwscott.com/share/presentations/2013/lduxny/)

## blogs

<http://looksgoodworkswell.com>

<http://designingwebinterfaces.com>

## twitter

follow me on twitter **@billwscott**

## book



designing web interfaces  
O'Reilly

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