

Metrics-Driven Design



In Gods we trust, all others bring data.

Hello average person,

You should follow me on Twitter.

A quick study exploring the power language has on clickthrough rates.

July 14, 2009

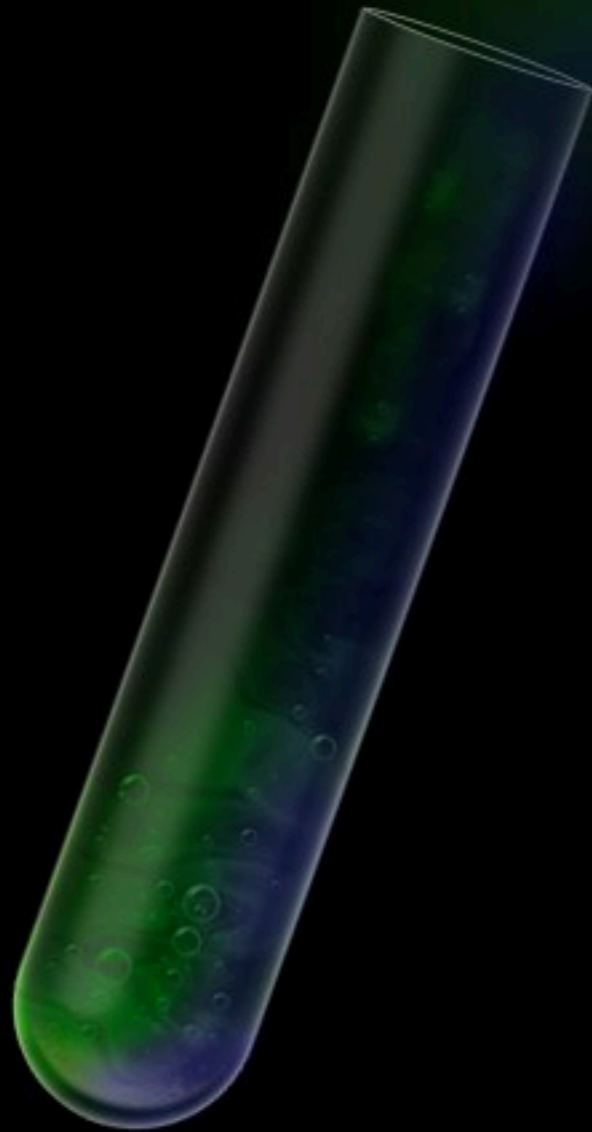
I spend a lot of time thinking about how to improve user experiences. Sometimes, I take my ideas and create experiments to get hard data about how users behave in the real world.

During the past few months, I have been performing an experiment on this site.

At the bottom of most posts here, there's a phrase with a link to my Twitter account. I had originally added this as an informational message, but it ended up being more effective than I expected. I started to wonder if I could increase the clickthrough rate even more by altering the way it was worded.

I'd been thinking about using commands instead of statements for guiding users through an interface, so I created a series of permutations I chose was randomly selected so that it

Dustin Curtis' Twitter copy test was hugely popular, showing widespread interest in testing.



RESULTS Change in clickthrough rate



As the **forcefulness** and personal identifiability of the phrase increased, the number of clicks likewise increased. "You" identifies the reader directly, "should" implies an obligation, and "follow me on twitter" is a direct command. Moving the link to a literal callout "here" provides a clear location for clicking. I tried other permutations that dulled the command, used the word "please" in place of "should" and made the whole sentence a link. None of them performed as well as the final sentence.

At the very least, the data show that users seem to have less control over their actions than they might think, and that web designers and developers have a long way for using language to nudge users through an experience. *

@bokardo

Small changes in copy can have large effects.

Goodbye, Google

20 mar 2009

tagged: [design](#), [google](#)

Today is my last day at Google.

I started working in-house at Google [almost three years ago](#). I built a team from scratch. I was fortunate to hire a team of a very talented designers. We introduced Visual Design as a discipline to Google. And we produced amazing work together. I'm very proud of my team, and I wish them well. They have a lot of challenging work ahead. But for me, it's time to move on.

Do I have something else lined up? Yes. That will be covered in Part 2. So I'm not leaving just to leave. But I'm not going to sugarcoat the reasons for my departure either. The scale at which Google operates was an early attractor for me. Potential to impact millions of people? Where do I sign? Unfortunately for me, there was one small problem I didn't see back then.

previous item

⚡ [Bring Down IE 6](#)

16 mar 2009

next item

≡ [Hello, Twitter](#)

31 mar 2009

[latest tweets](#)

No public Twitter messages.

"Unfortunately for me, there was one small problem I didn't see back then."

Doug Bowman describes the reasons why he left Google after 3 years.

Doug Bowman on Design at Google

“

Without a person at (or near) the helm who thoroughly understands the principles and elements of Design, a company (Google) eventually runs out of reasons for design decisions. With every new design decision, critics cry foul. Without **conviction**, doubt creeps in. **Instincts** fail. “Is this the right move?” When a company is filled with engineers, it turns to engineering to solve problems. Reduce each **decision** to a simple logic problem. Remove all **subjectivity** and just look at the data. Data in your favor? Ok, launch it. Data shows negative effects? Back to the drawing board. And that data eventually becomes a crutch for every decision, **paralyzing the company and preventing it from making any daring design decisions.**

Doug Bowman on Design at Google

“

Yes, it's true that a team at Google couldn't decide between two blues, so they're testing 41 shades between each blue to see which one performs better. I had a recent debate over whether a border should be 3, 4 or 5 pixels wide, and was asked to prove my case. **I can't operate in an environment like that.** I've grown tired of debating such minuscule design decisions. There are more exciting design problems in this world to tackle.

41 Shades of Blue Test

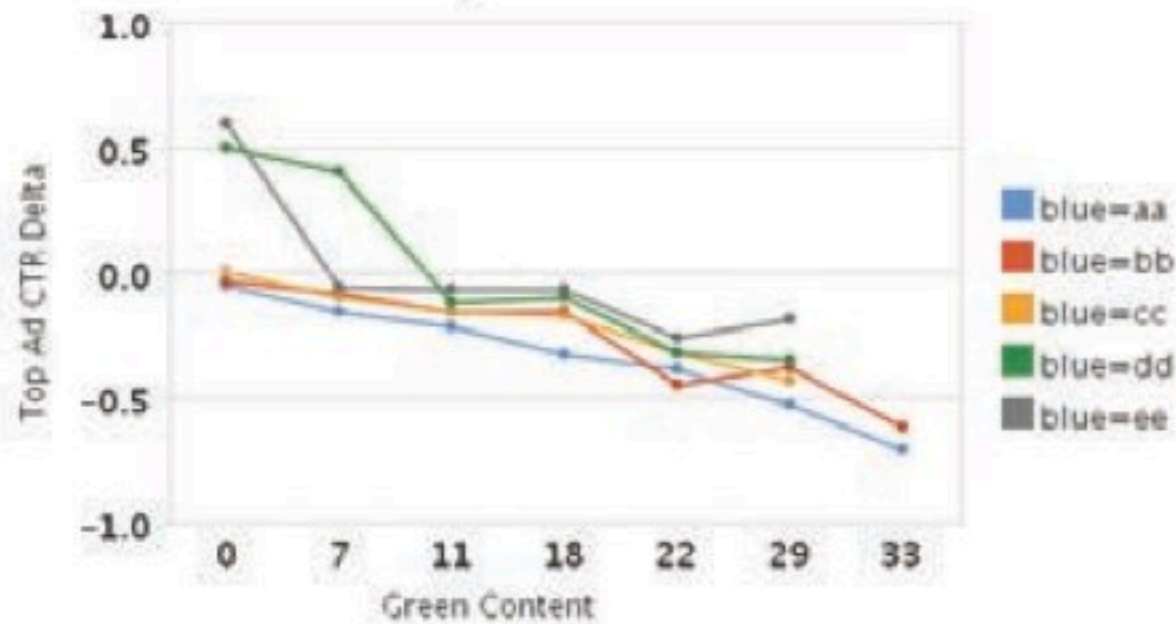


41 Bucket Split Test: ~2.5% of users each got a shade for 2 weeks.

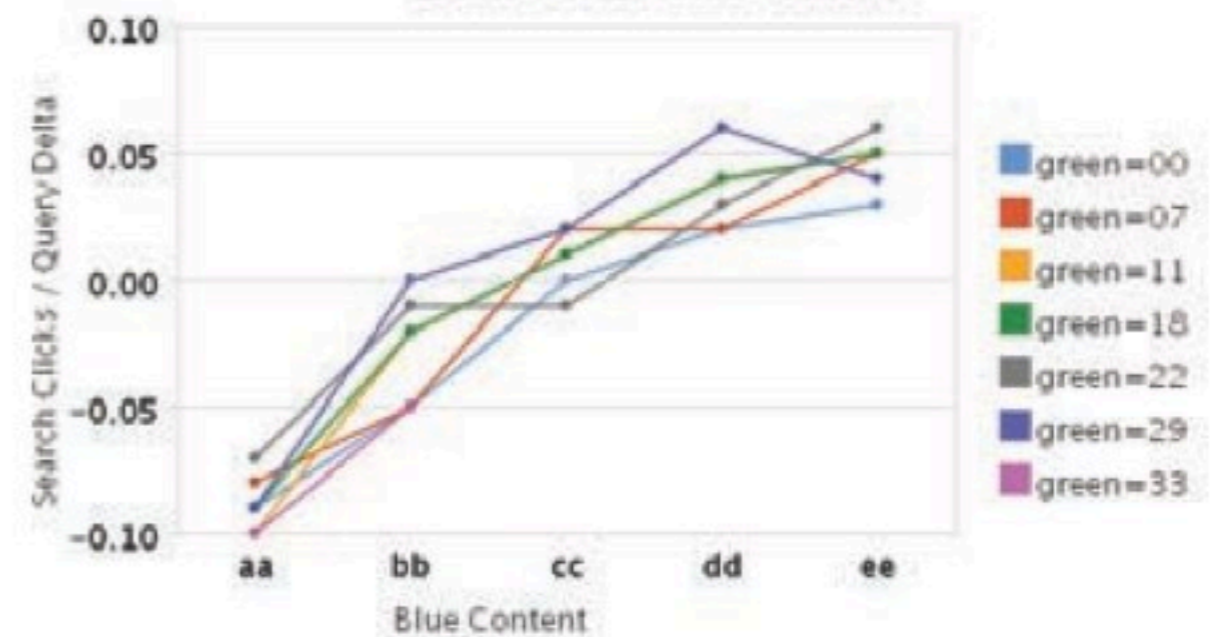
A perfect example of extreme optimization...testing tiny changes in shades of blue.

The Green & Blue Effects

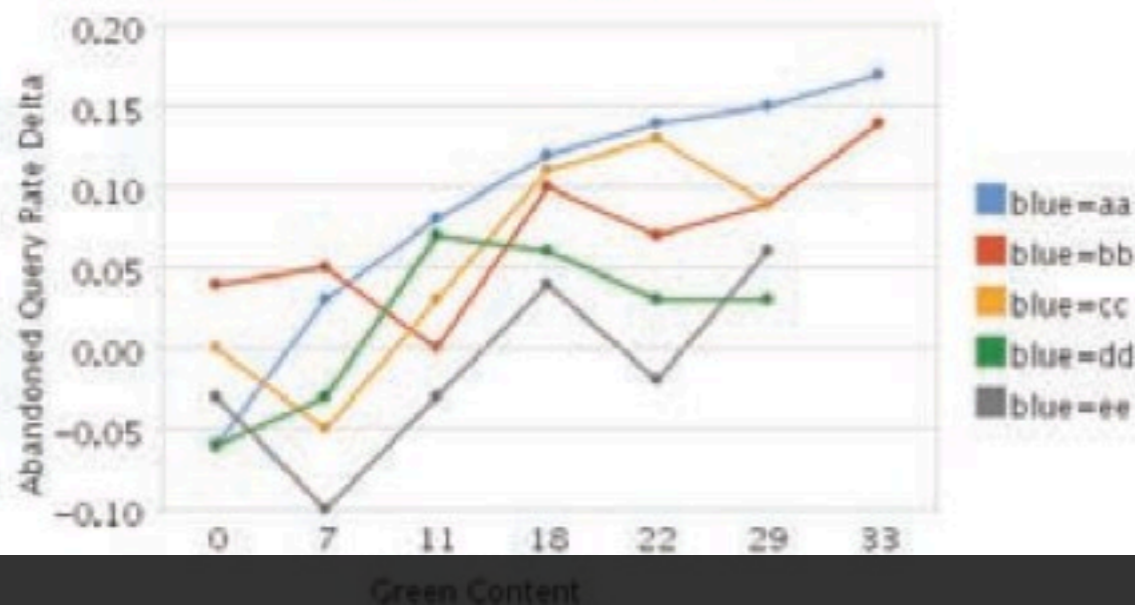
Top CTR vs. Green Content



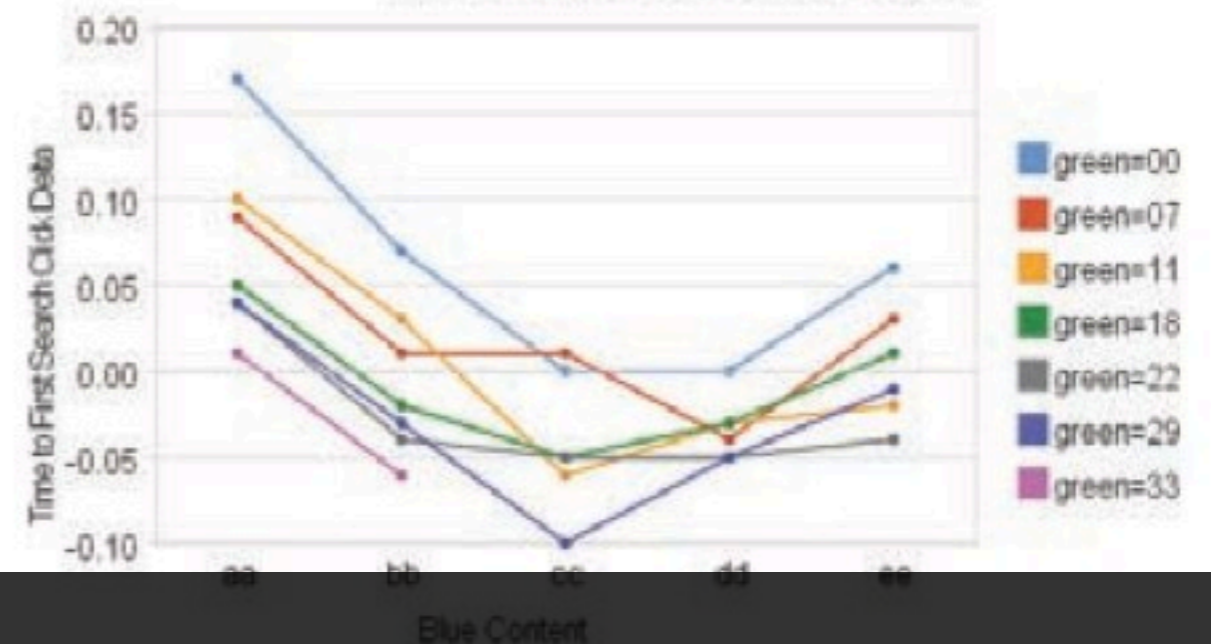
Search CTR vs. Blue Content



Abandonment Rate vs. Green Content



Time to Search Click vs. Blue Content



The more green the link, the worse the click-through. More blue = higher CTR.

Design Spectrum

Intuition-Driven

Data-Driven

Make best-guesses
Rely on previous experience
Study what others are doing
Use best practices, principles & patterns
Might use data for trend-watching
Don't have time to test details
Aesthetics are integral
Rely on our gut
Creative, visionary

Doug's words:
instinctive, subjective, daring

Every design choice is tested
Takes others experience with a grain of salt
Design is a logic problem
Rely on data for decision-making
Aesthetics are secondary
No detail is too small to test
Never trust your gut
Cold, calculating

Implied:
deliberate, objective, safe



Politics, not a measurable user experience, often determines the design choices of many teams. Politics



Prayer becomes the technique of choice on projects with no clear metrics.

Prayer

<http://www.flickr.com/photos/c0t0s0d0/2334183401/>

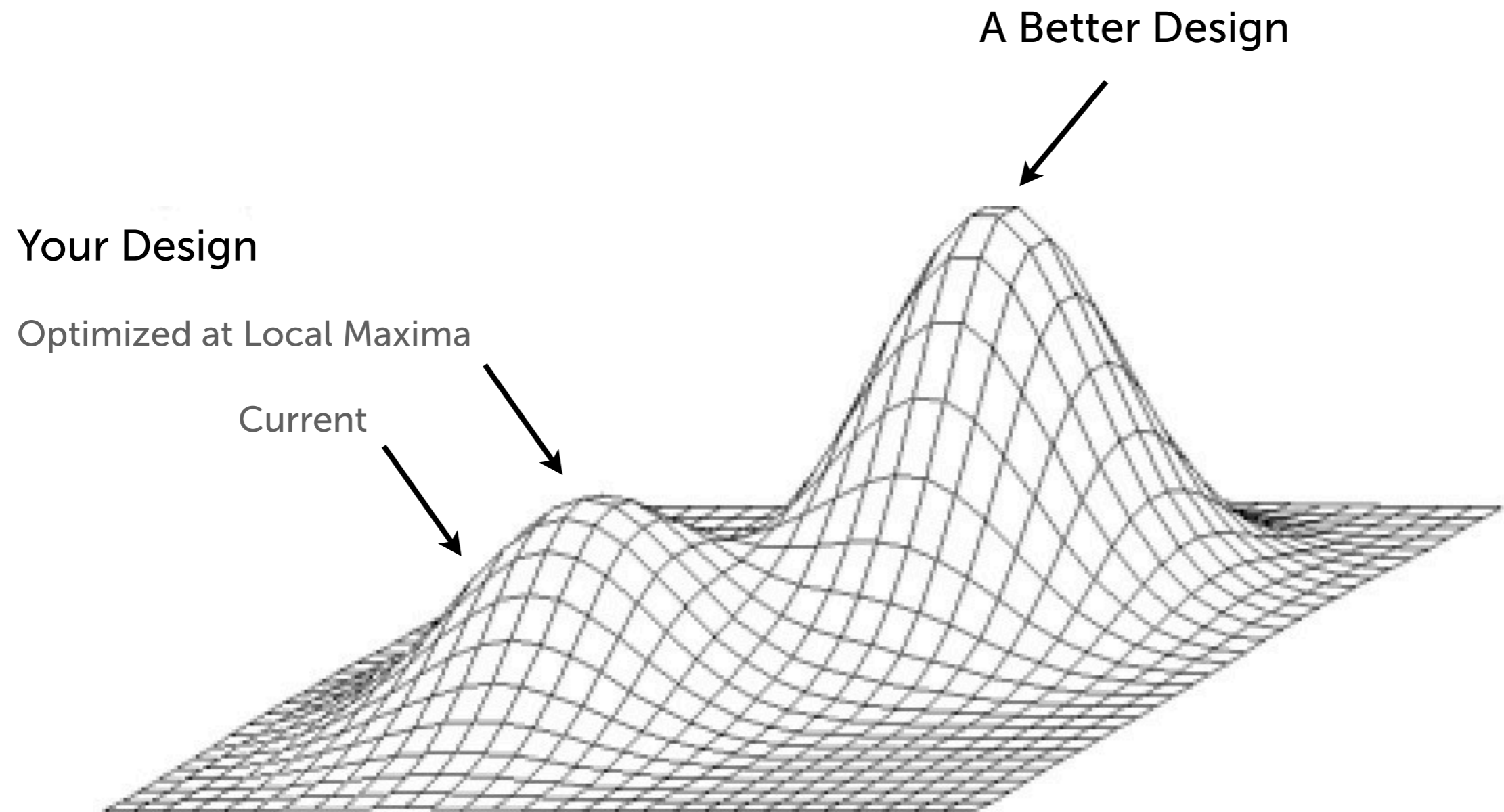


Paralysis is what happens when you don't have clear design direction.

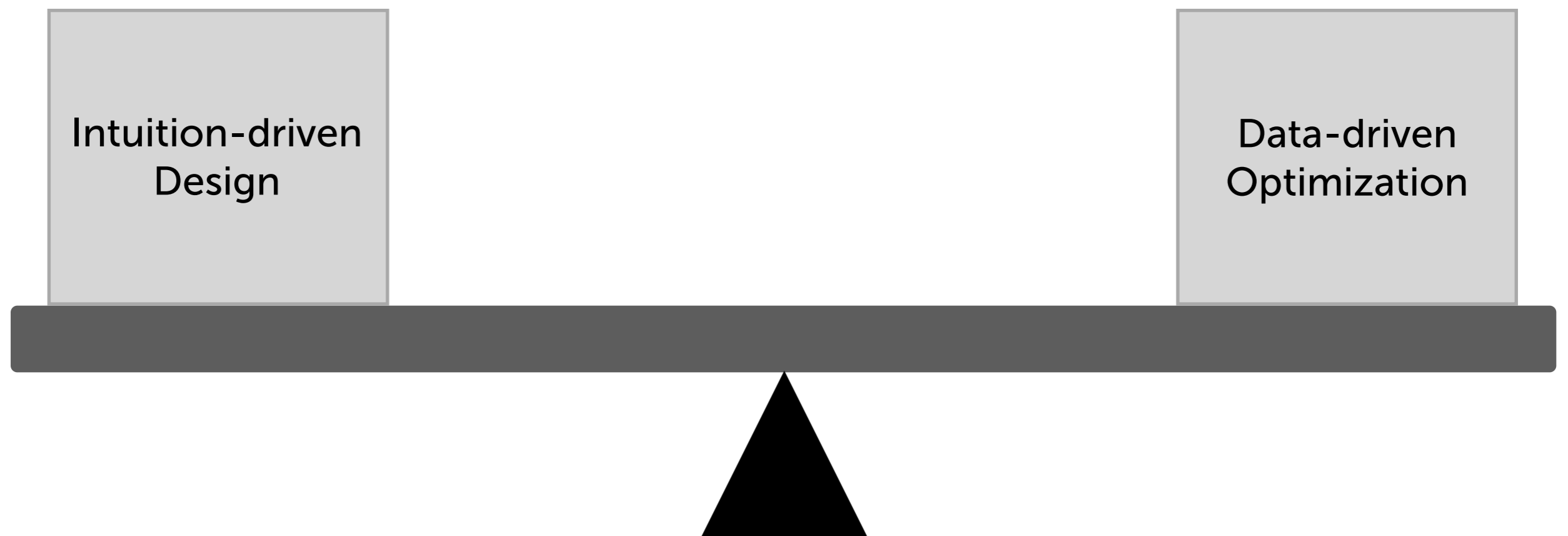
Paralysis

<http://www.flickr.com/photos/tmh9/245066417/>

The Local Maxima Problem



Optimization only goes so far. UX Designers need to make bold leaps to find the next mountain.



Therefore, we need a balance between optimization and intuition. Both are necessary.

Evidence & Intuition

“

Radical innovation requires both evidence and intuition: evidence to become informed, and intuition to inspire us in imagining and creating new and better possibilities.

Jane Fulton Suri, IDEO

Metrics-Driven Design Framework

1. Identify Business Objectives

Make sure the design team is aligned with the executive team

2. Map out your UX Lifecycle

What specific actions do people need to do in order for you to meet your business objectives?

3. Identify your Core Metrics

Metrics fall out of the UX lifecycle. Focus on the biggest and emergent hurdles over time.

4. Continuous Improvement Lifestyle

Changing the way we think about metrics and design will become crucial going forward.

1

Identify Business Objectives

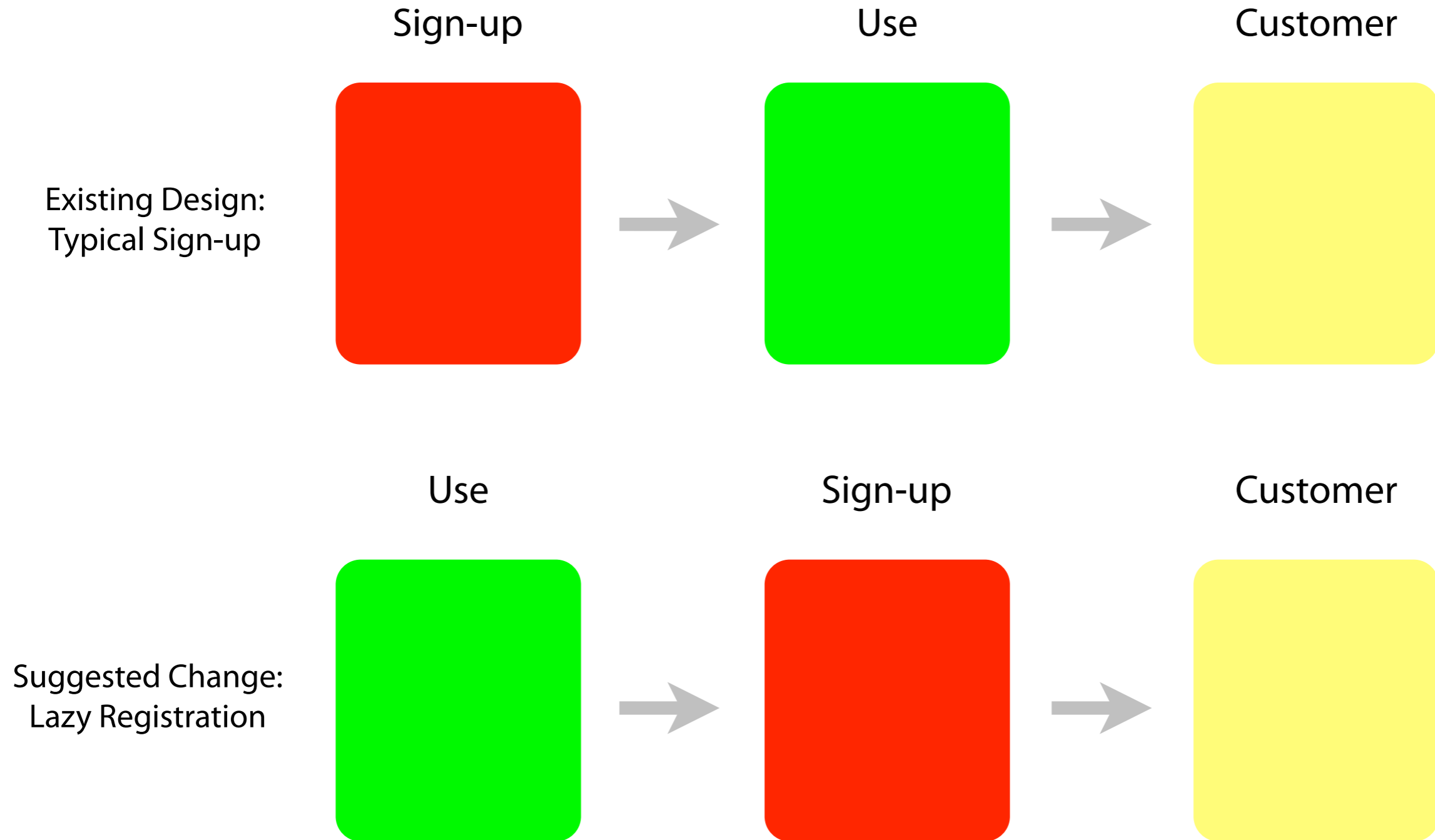
Make sure the design team is aligned with the executive team

Step 1: Identify Business Objectives/Goals

Answers the questions:

- What is our product/service for?
- Why does our web site exist?
- Do designers and executives agree?
- What activity do people need to do in order for our business to be successful?

Client Disconnect on Business Goals



Client's business objectives were not aligned with designer's goal of positive user experience.

2

Map out the UX Lifecycle

What specific actions do people need to do in order for you to meet your business objectives?

The UX Lifecycle



Interested



Trial/beta User



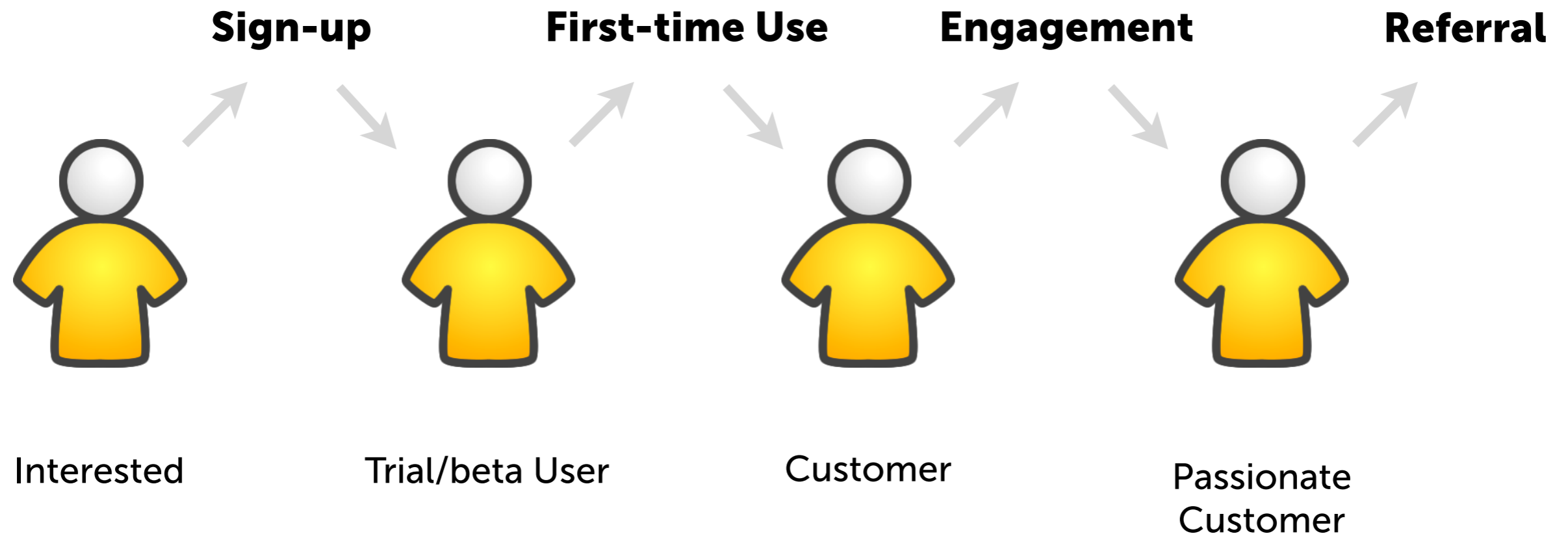
Customer



Passionate
Customer

As people use your web application, they go through four major stages.

The UX Lifecycle



Between each stage is a hurdle, primary hurdles in the user experience.

The UX Lifecycle

Designing for the Social Web (my book)

Awareness → Sign-up → First-time Use → Engagement → Referral

Dave McClure's Metrics for Pirates

Attention → Acquisition → Retention → Referral → Revenue

Example of fleshing out steps in lifecycle

Awareness → Sign-up → Sign-in → Create Landing Page → Edit Page
→ Create test variation → Publish page → Set up Custom Domain
→ Drive Traffic → Return to view Conversion data → Wait for test result
→ Take action on test result → Refer someone else → Create 2nd page
→ Rinse & Repeat

3

Identify Core Metrics

Metrics fall out of the UX lifecycle. Focus on the biggest and emergent hurdles over time.

Dashboard

Intelligence Beta

Visitors

Overview
Benchmarking
Map Overlay
New vs. Returning
Languages
▼ Visitor Trending

Visits

Absolute Unique Visitors
Pageviews
Average Pageviews
Time on Site
Bounce Rate

► Visitor Loyalty
► Browser Capabilities
► Network Properties
► Mobile
User Defined
Custom Variables

Traffic Sources

Content

Goals

Custom Reporting

My Customizations

Custom Reports
Advanced Segments
Intelligence Beta
Email

Help Resources

About this Report
Common Questions

Export Email Add to Dashboard

Advanced Segments: All Visits

Overview »

Visits for all visitors

Mar 28, 2010 - Apr 27, 2010



20,341 Visits

656.16 Visits / Day

Sunday, March 28, 2010	2.51% (510)
Monday, March 29, 2010	3.51% (714)
Tuesday, March 30, 2010	3.62% (736)
Wednesday, March 31, 2010	3.49% (710)
Thursday, April 1, 2010	2.84% (578)
Friday, April 2, 2010	2.39% (487)
Saturday, April 3, 2010	1.88% (383)
Sunday, April 4, 2010	1.90% (387)
Monday, April 5, 2010	4.88% (993)
Tuesday, April 6, 2010	4.48% (912)
Wednesday, April 7, 2010	3.03% (616)
Thursday, April 8, 2010	2.92% (594)
Friday, April 9, 2010	2.35% (478)
Saturday, April 10, 2010	1.83% (373)
Sunday, April 11, 2010	2.16% (440)
Monday, April 12, 2010	3.45% (701)
Tuesday, April 13, 2010	3.51% (720)
Wednesday, April 14, 2010	3.81% (775)

Most analytics packages display way too much non-actionable data.

Vanity Metrics

○ 0623456789

○ 092345678

○ 0193459

○ 003235976

○ 0123456

○ 0 0 3 2 4
🤪 🤪 🤪 🤪 🤪

○ 0 1 2 3 4
🏈 🏈 🏈 🏈 🏈

○ 345678

○ 01234567

○ 012345678

○ 0123456789

○ 0123456

○ 016345678

○ 019385678

○ 092345678

○ 01234567

○ 0123456

○ 012645

○ 0123456789

○ 0123456789

○ 01234567

○ 0123456789

○ 0153478

○ 01234567

○ 0123456789

○ 092345678

○ 00352354

○ 01234567

○ 0123456789

○ 0 2 5 4 3
🦊 🦊 🦊 🦊 🦊

○ 01234567

○ 009051

○ 0123456789

○ 01234567

○ 0190822

○ 0123456789

Vanity metrics: You can't take action on them, but they make you feel good.

Actionable Metrics

1. A/B split tests
Refute or confirm a specific hypothesis
2. Funnel metrics & cohort analysis
Measure lifecycle events over time
3. Customer satisfaction over time
Get a general sense of user experience

<http://bthuener.posterous.com/vanity-metrics-vs-actionable-metrics-guest-po-2>

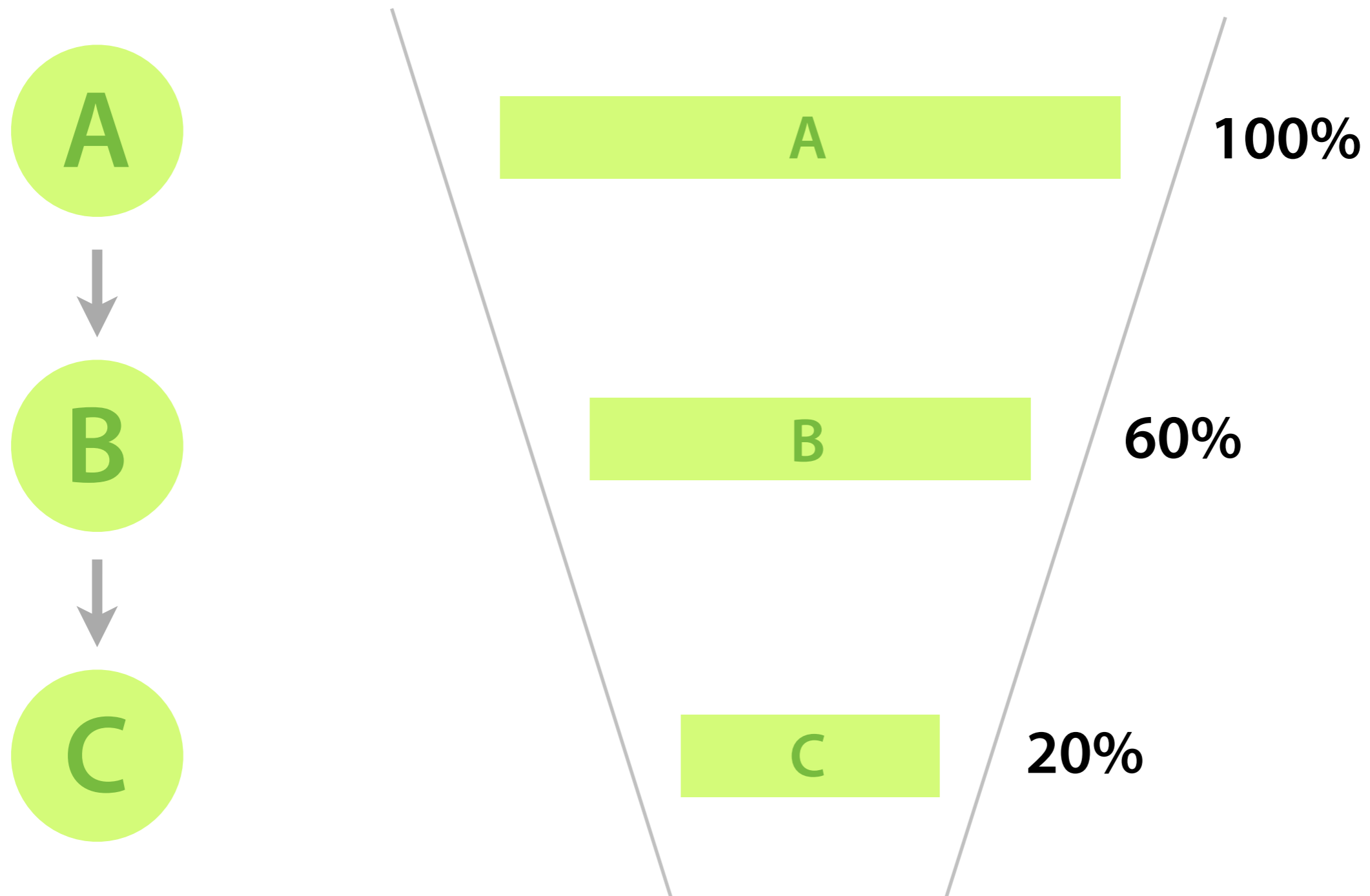
Actionable metrics are those that give you enough information to make decisions from.

Metrics-Driven Design

Pretty graphs do not actionable metrics make.



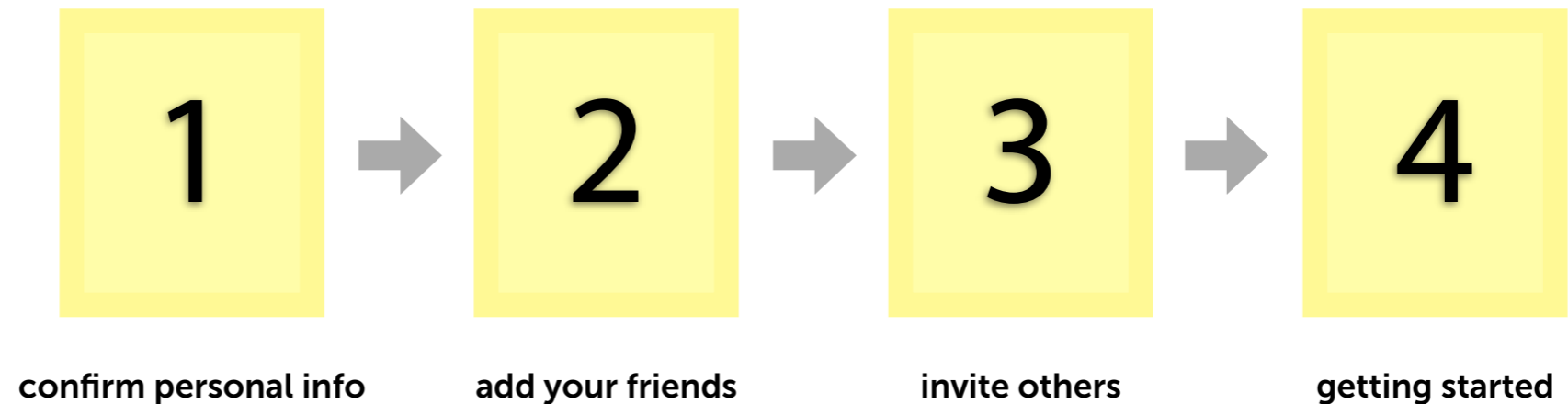
Conversion Funnel Analysis



Funnel analysis is great for optimizing flows through several screens (over major hurdles)

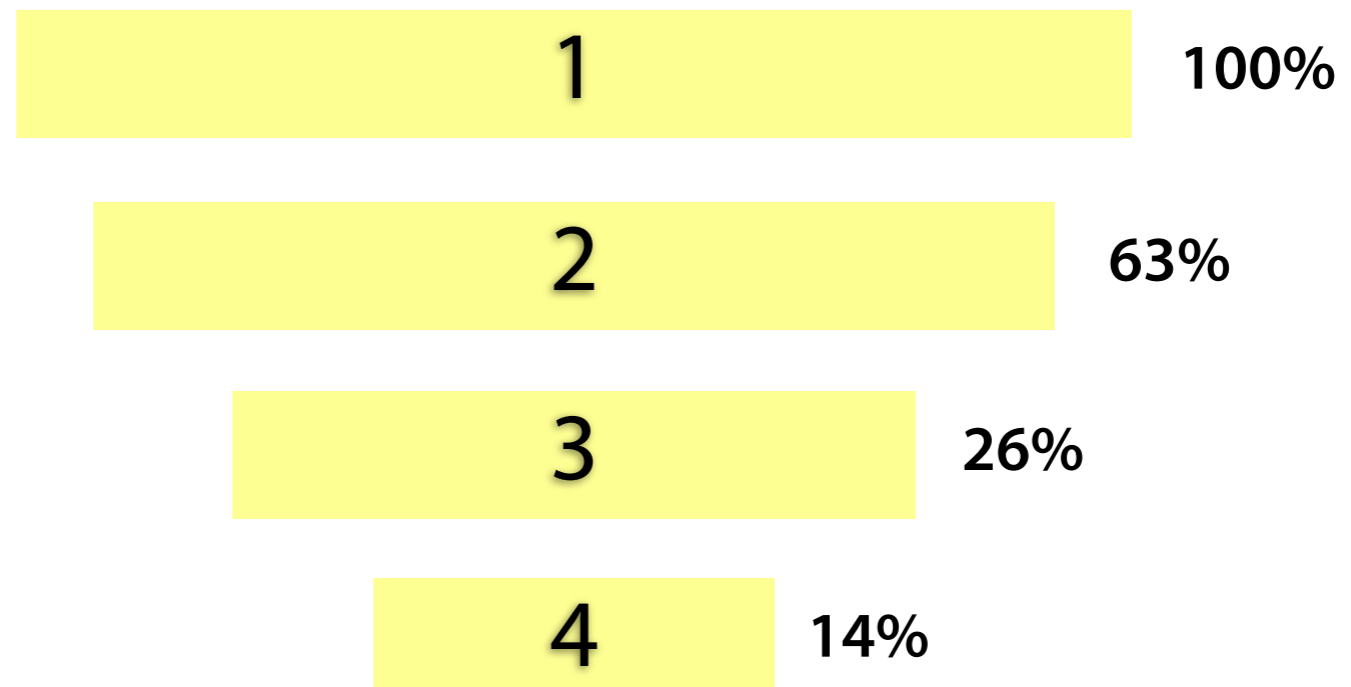
Sign-up Conversion Funnel

Original Flow



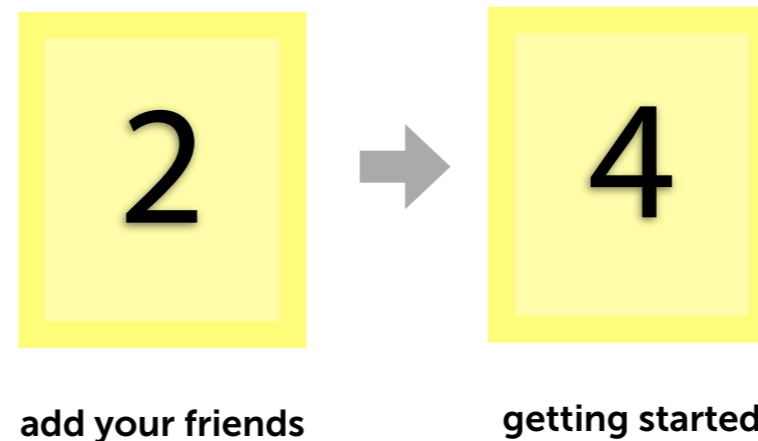
Original Conversion Funnel

of the 100% of people who started the sign-up process, only 14% made it to the getting started screen.



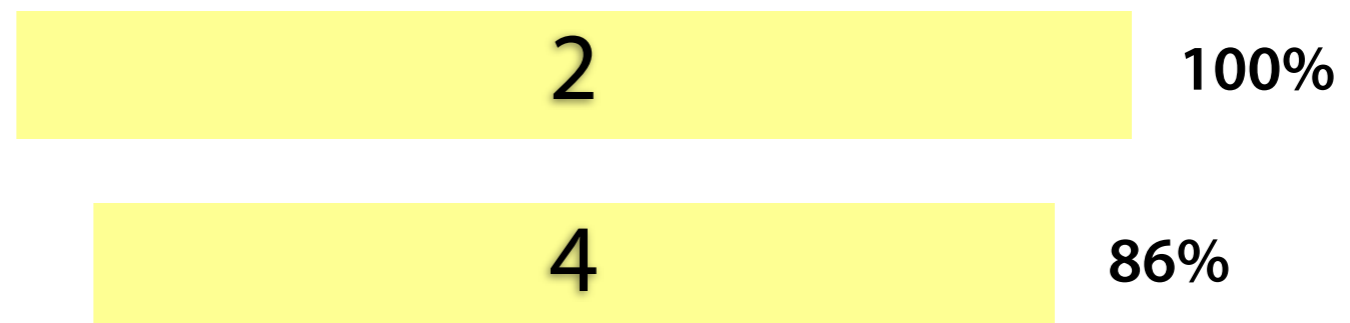
Sign-up Conversion Funnel

New Flow



New Conversion Funnel

of the 100% of people who started the sign-up process, 86% made it to the getting started screen.



New design: two fewer screens and improved copywriting. Big improvement.

Stage	UX Lifecycle Actions	Conversion %	Value
Acquisition	Visits web site, browses blogs	100%	\$0.05
Activation	Creates new blog and attaches custom domain	2.6%	\$2.00
Engagement	Writes 1 blog post per week for 1 month	1.3%	\$30.00
Referral	Refers 2 people/month to service	1.1%	\$5.00
Revenue	Upgrades to paying plan	0.65%	\$60.00

You can use a funnel view for the entire UX lifecycle...and attach value at each step.

Cohort Analysis

	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12
January	100%	20%	19%	13%	13%	10%	12%	11%	7%	7%	7%	?
February	100%	21%	16%	13%	11%	9%	9%	7%	7%	7%	?	
March	100%	24%	20%	17%	15%	13%	11%	10%	10%	?		
April	100%	31%	27%	24%	19%	15%	12%	12%	?			
May	100%	31%	27%	25%	21%	18%	16%	?				
June	100%	39%	28%	24%	20%	19%	?					
July	100%	40%	33%	27%	23%	?						
August	100%	47%	41%	32%	?							
September	100%	52%	43%	?								
October	100%	53%	?									
November	100%	?										
December	?											

Cohort analysis: valuable for knowing how well your design is improving over time. <https://www.nytimes.com/2008/01/after-the-techc.html>

Emergent Metrics: 5 Friends

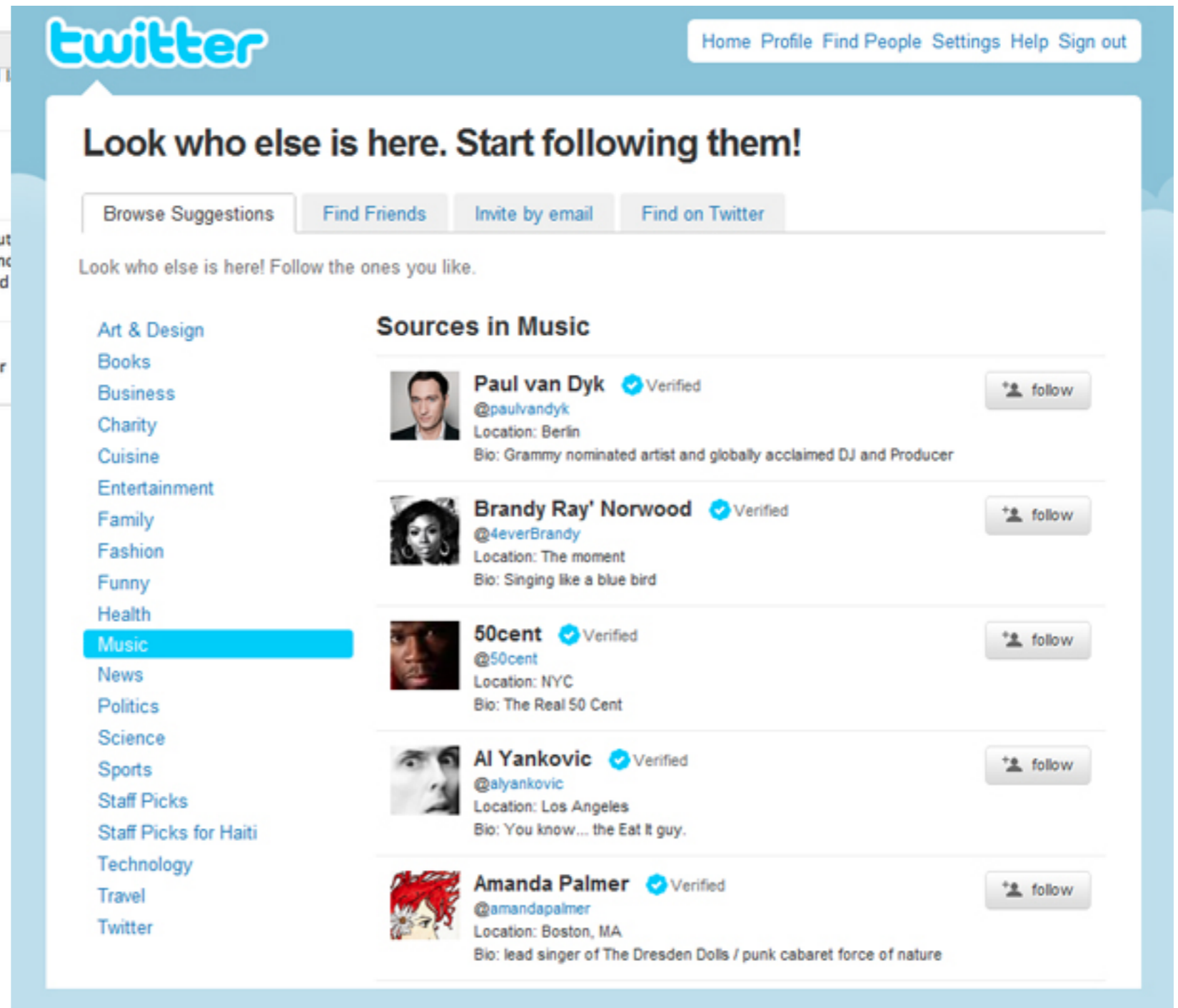
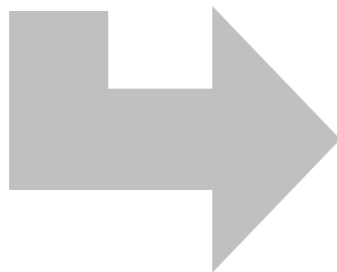
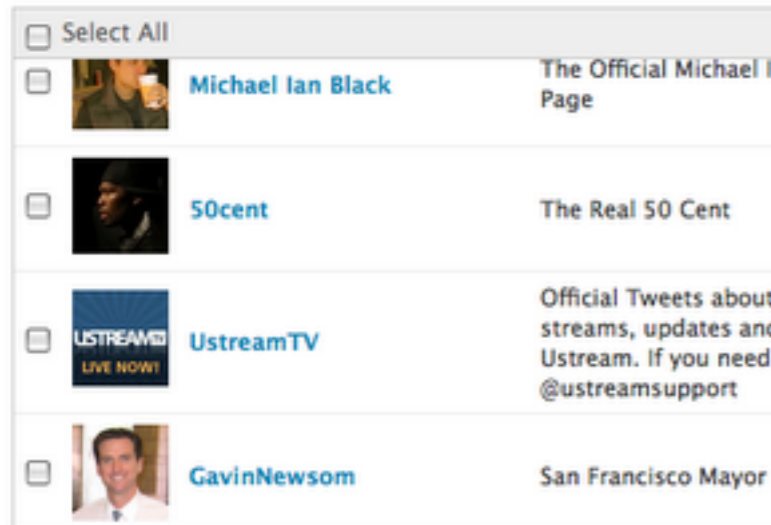


The magic number is **5**.
Once a FriendFeed user
found five friends, they
became active users.

Bret Taylor, Friendfeed

Friendfeed introduced a novel stream element b/c emergent metrics showed friending was crucial.

Engagement Matters: Twitter



<http://www.lukew.com/ff/entry.asp?1039>

Twitter changed to categories in their sign-up flow b/c metrics showed popularity wasn't working.

Metrics-Driven Design

Speed without context is wasted.



Acquisition vs. Referral: Dropbox



[Log in](#)

[Back to the homepage](#)



Dropbox Anywhere

Your files, everywhere you are.



Dropbox for iPhone



Dropbox for Android



Dropbox for iPad



Dropbox for BlackBerry
Coming Soon

Ran Google Adwords campaigns to drive traffic to dropbox.com

The traffic that completed the lifecycle:

- 1) Searched on a keyword
- 2) Visited their site
- 3) Signed-up for service
- 4) Became a customer

cost them \$233-\$388 *per person!*
(for a \$99 product)

Dropbox used Adwords to drive traffic early on. Cost per acquisition (CPA) was sky high.

Metrics-Driven Design

LTV = Lifetime value



Dropbox Lifecycle



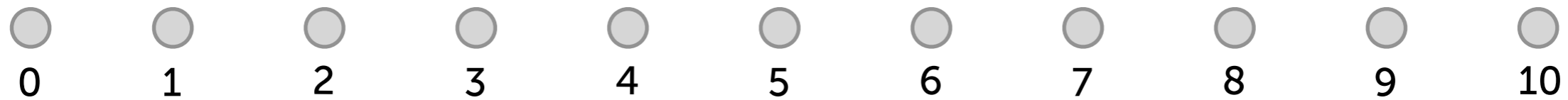
Referral program with 2-sided incentive increased sign-ups by 60% permanently.

30 days prior to April 2010, Dropbox users sent 2.8 million direct referral invites.

So Dropbox changed to a referral model...with amazing results.

Referral: Net Promoter Score

**How likely is it that you would recommend
our company to a friend or colleague?**



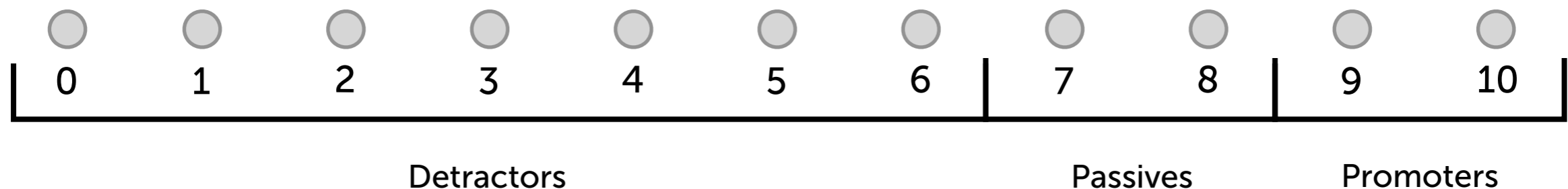
Net promoter score gives you a simple way of taking the temperature of your customers.

Metrics-Driven Design

Do you know what your net promoter score is?

Net Promoter Score

How likely is it that you would recommend our company to a friend or colleague?



$$\text{Score} = \% \text{ Promoters} - \% \text{ Detractors}$$

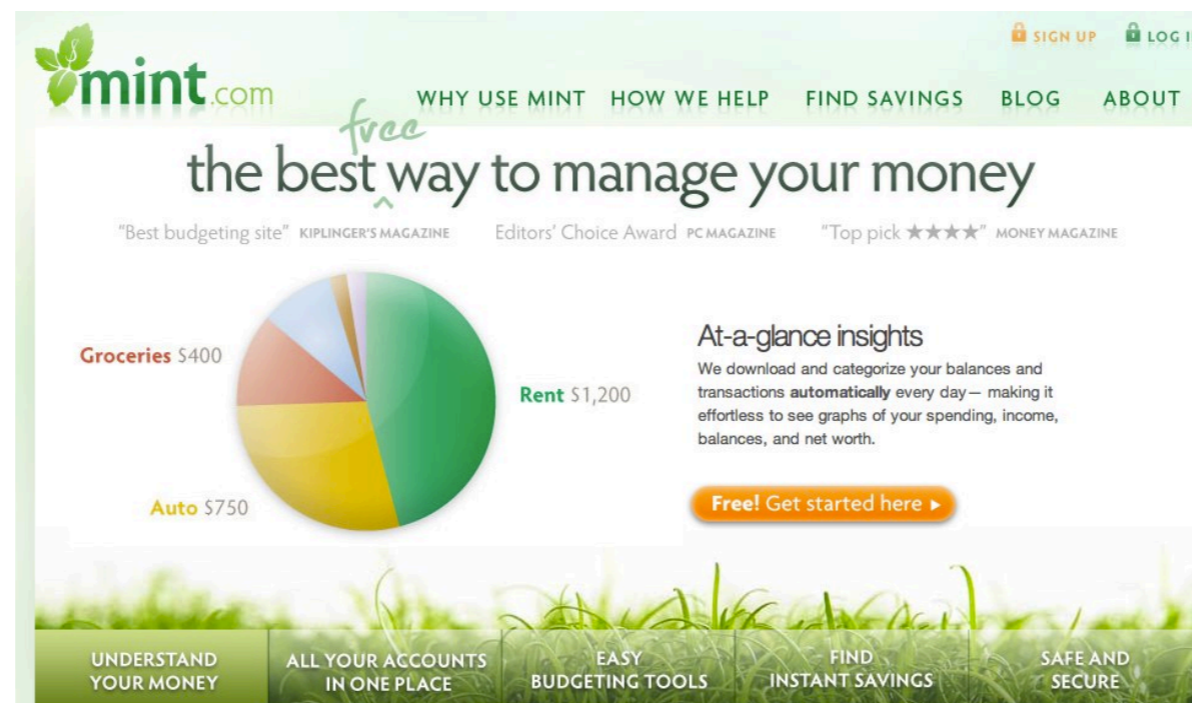
It is said that managers at Apple call back detractors within 24 hours.

Mint.com & Net Promoter Score

“

Maybe we didn't have a high viral coefficient but we had a great net promoter score.

Jason Putorti, Lead Designer, Mint.com



Mint.com realized that they won't have high metrics for all categories, but NPS was valuable.

Prevention: Facebook Deactivation

The screenshot shows the Facebook deactivation confirmation page. At the top, the Facebook logo and navigation bar are visible. Below the header, a confirmation message asks, "Are you sure you want to deactivate your account?" and states, "Your 972 friends will no longer be able to keep in touch with you." Below this, there are four sections, each featuring a photo of a friend and a message: "Coliene will miss you", "Frederic will miss you", "Louis will miss you", and "Jason will miss you". Each section includes a "Send [Name] a Message" link. At the bottom, there is a section titled "Why are you deactivating: (required)" with a list of radio button options: "I don't feel safe on Facebook.", "This is temporary. I'll be back.", "I have another Facebook account.", "I get too many emails, invitations, and requests from Facebook.", "I have a privacy concern.", "I spend too much time using Facebook.", "I don't understand how to use Facebook.", "I don't find Facebook useful.", and "Other". Below this list is a text box labeled "Please explain further:".

facebook

Search

Are you sure you want to deactivate your account?
Your 972 friends will no longer be able to keep in touch with you.

Coliene will miss you

Frederic will miss you

Louis will miss you

Jason will miss you

Send Coliene a Message

Send Frederic a Message

Send Louis a Message

Send Jason a Message

Why are you deactivating: (required)

- ☐ I don't feel safe on Facebook.
- ☐ This is temporary. I'll be back.
- ☐ I have another Facebook account.
- ☐ I get too many emails, invitations, and requests from Facebook.
- ☐ I have a privacy concern.
- ☐ I spend too much time using Facebook.
- ☐ I don't understand how to use Facebook.
- ☐ I don't find Facebook useful.
- ☐ Other

Please explain further:

Design changes to the deactivation page accounted for 1 million members not leaving the service.

Julie Zhou, Facebook

http://www.readwriteweb.com/archives/what_happens_when_you_deactivate_your_facebook_acc.php

A controversial, but extremely effective, design.

Metrics-Driven Design

I will miss you after my talk today.

UX
LONDON

Is there one metric that drives others?

“

At Blogger, we determined that our most critical metric was number of posts. An increase in posts meant that people were not just creating blogs, but updating them, and more posts would drive more readership, which would drive more users, which would drive more posts.

Ev Williams

founder of Blogger (& Twitter)

4

Continuous Improvement Lifestyle

Changing the way we think about metrics and design will become crucial going forward.

Cycle of Work (applied Kaizen Cycle)

1. Release your design to create a baseline.
2. Measure the design focusing on actionable metrics
3. Gauge measurements against biz requirements
4. Design/redesign to meet requirements
5. Standardize the new, improved design (or revert!)
6. Continue cycle ad infinitum

Kaizen was popularized by the Toyota manufacturing method. It applies to metrics as well.

Principles of Metrics-Driven Design

1. No design survives contact with the user.
2. Small improvements, taken together, yield huge results.
3. Optimize in small steps; innovate with daring leaps.
4. Testing is empowering, reversion is cleansing.
5. Metrics are not creative: human beings are.
6. All team members are responsible for the user experience.
7. If metrics aren't actionable, they aren't useful.
8. Design is never done.
9. No data is important but your own.

A few high-level principles that help get us into the mindset of metrics-driven design.

Metrics-Driven Design

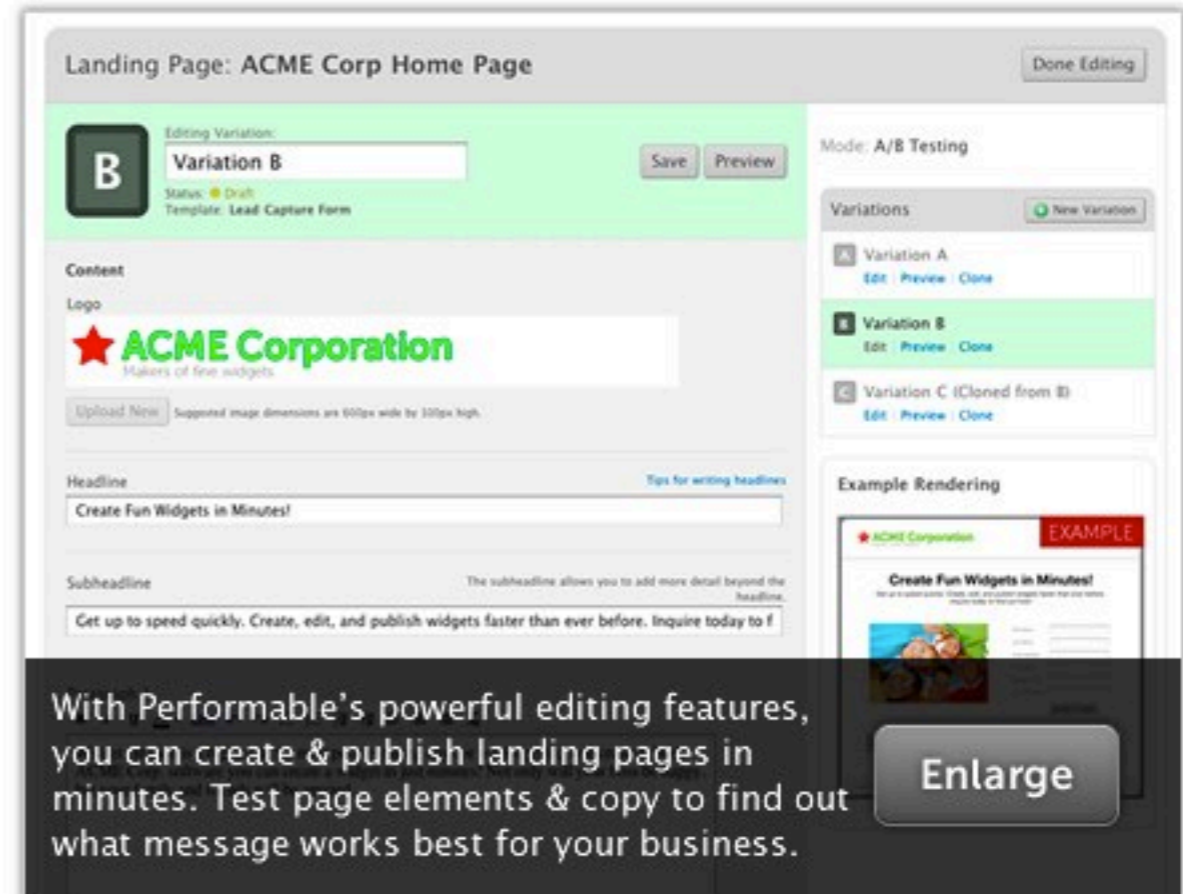
Reminder: Principal = Person & Principle = Thing



Stop closing the door on potential customers. Get your message right with Performable.

Create beautiful landing pages, measure your conversions, and continuously improve your message over time.

Get Started Now!




Landing Page: ACME Corp Home Page Done Editing

Editing Variation: **Variation B** Save Preview

Status: Draft
Template: Lead Capture Form

Content

Logo

 **ACME Corporation**
Makers of fine widgets

Upload New Suggested image dimensions are 600px wide by 100px high.

Headline [Tips for writing headlines](#)

Create Fun Widgets in Minutes!

Subheadline The subheadline allows you to add more detail beyond the headline.


Get up to speed quickly. Create, edit, and publish widgets faster than ever before. Inquire today to find out more.

Mode: A/B Testing

Variations [New Variation](#)

- A Variation A [Edit](#) [Preview](#) [Clone](#)
- B Variation B [Edit](#) [Preview](#) [Clone](#)
- C Variation C (Cloned from B) [Edit](#) [Preview](#) [Clone](#)

Example Rendering

 **EXAMPLE**

With Performable's powerful editing features, you can create & publish landing pages in minutes. Test page elements & copy to find out what message works best for your business.

Enlarge

What can you do with Performable?



Make more money from your ad traffic

Don't send your ad traffic to a watered-down home page. Send them to a targeted landing page instead.



Sell more product using targeted video pages

Adding a video to your landing page can increase engagement & sales. Simply drop them in with Performable.



Acquire more business leads

By testing and optimizing your lead acquisition forms, you'll gain more customers over time.



Optimize your Google Adwords campaigns

You're probably optimizing your ad copy...with Performable you can easily optimize your landing pages as well.

Performable homepage with green button.

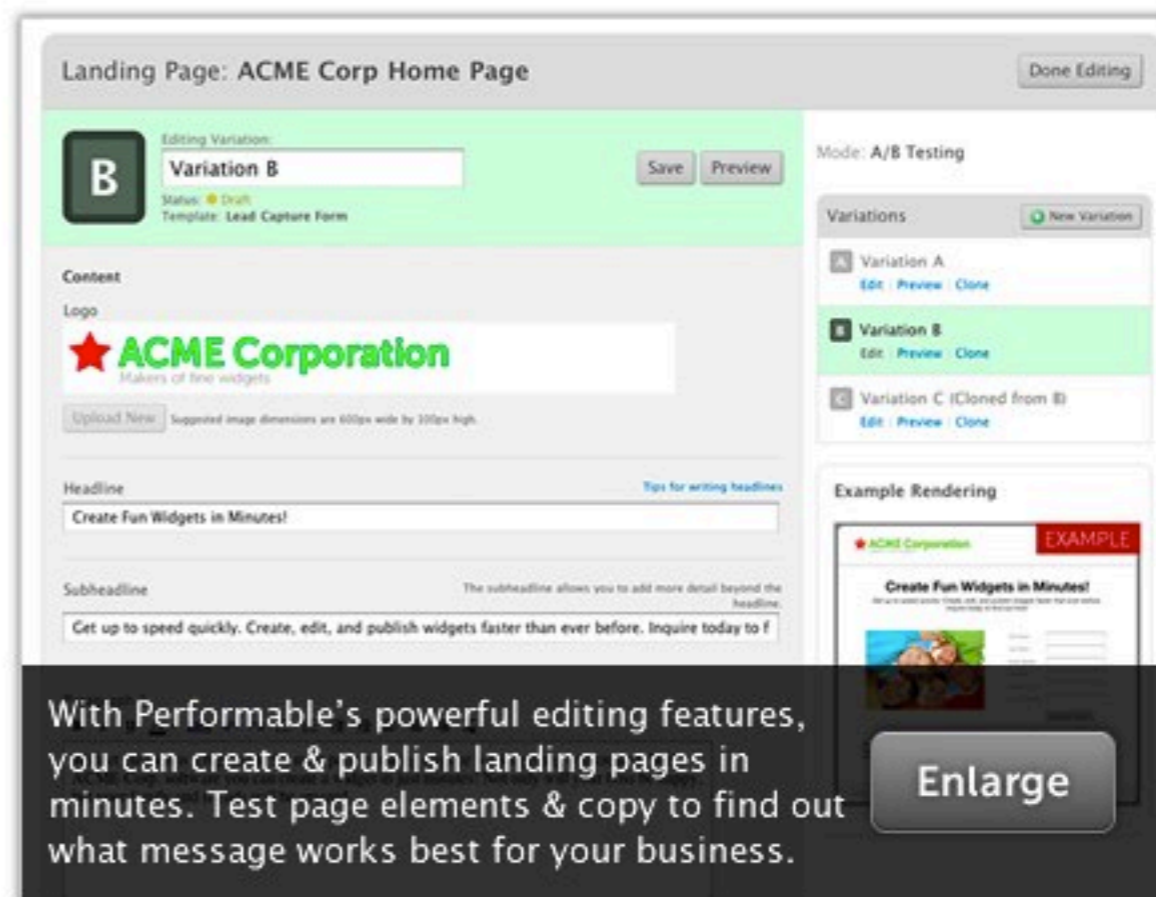
Get more subscribers to your newsletter

Improve your web site contact form

Stop closing the door on potential customers. Get your message right with Performable.

Create beautiful landing pages, measure your conversions, and continuously improve your message over time.

Get Started Now!



With Performable's powerful editing features, you can create & publish landing pages in minutes. Test page elements & copy to find out what message works best for your business.

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Adding a video to your landing page can increase engagement & sales. Simply drop them in with Performable.



Acquire more business leads

By testing and optimizing your lead acquisition forms, you'll



Optimize your Google Adwords campaigns

You're probably optimizing your ad copy...with Performable you can easily optimize your landing pages as well.

Performable homepage with red button.

Get more subscribers to your newsletter






Improve your web site contact form


Which performed better?









Get Started Now!

Get Started Now!

Red outperformed green by 21%.

 **Launch Homepage** 
 <http://www.performable.com/launch-homepage/>  Edit URL
[Use as Homepage](#)
Traffic Source: **Multiple Sources** 
Landing page is **Live** (Testing **2** page variation(s))

Visit & Conversion Data **Referrers**  New Variation

	Test Variation	Status	Visits	Conv.	Rate	
A Green Button 		Enabled	1134	212	18.7%	 Edit  Clone  Disable
Template: Performable Launch Homepage Last updated: 7 minutes ago						
B Red Button 		Enabled	1051	239	22.7%	 Edit  Clone  Disable
Template: Performable Launch Homepage Last updated: 17 minutes ago						

A/B Testing Summary
There are 2185 participants in this experiment. The best choice is Variation B: it converted at 22.7% (**21% better than Variation A**). With 99% probability this result is statistically significant. Variation A converted at 18.7%. Variation B selected as the best alternative.

Quite a difference: Red outperformed Green by 21%. for more on statistical significance, see <http://www.cennydd.co.uk/2009/statistical-significance-other-ab-test-pitfalls/>

Metrics-Driven Design Framework

1. Identify Business Objectives

Make sure the design team is aligned with the executive team

2. Map out your UX Lifecycle

What specific actions do people need to do in order for you to meet your business objectives?

3. Identify your Core Metrics

Metrics fall out of the UX lifecycle. Focus on the biggest and emergent hurdles over time.

4. Continuous Improvement Lifestyle

Changing the way we think about metrics and design will become crucial going forward.

Looking Forward

1. New Mindset: Continuous Improvement
2. Change in Agency Relationship
3. Death of single-project based usability/UX
4. Huge migration to testing within design process
5. Still using intuitive design to innovate
6. Testing as empowering & fun, not cold & calculating
7. UX Designers judged on actual effectiveness of design

More Info



Performable

<http://www.performable.com>

I'm currently product guy at Performable, where we're building a testing platform to help people optimize web sites. Find out what copywriting, design elements, and layouts work best for your audience.

Performable Blog <http://blog.performable.com>

A blog filled with A/B test results, articles on testing, copywriting, marketing, and user experience.



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Metrics-Driven Design



Thank you!