

# Metrics-Driven Design

by Joshua Porter

Twitter: bokardo

bokardo  
52weeksofUX  
performable  
microcopy  
designing for the social web  
make them care!



## 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.

previous item

⚡ [Bring Down IE 6](#)

16 mar 2009

next item

≡ [Hello, Twitter](#)

31 mar 2009

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

# 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.**

# 41 Shades of Blue Test

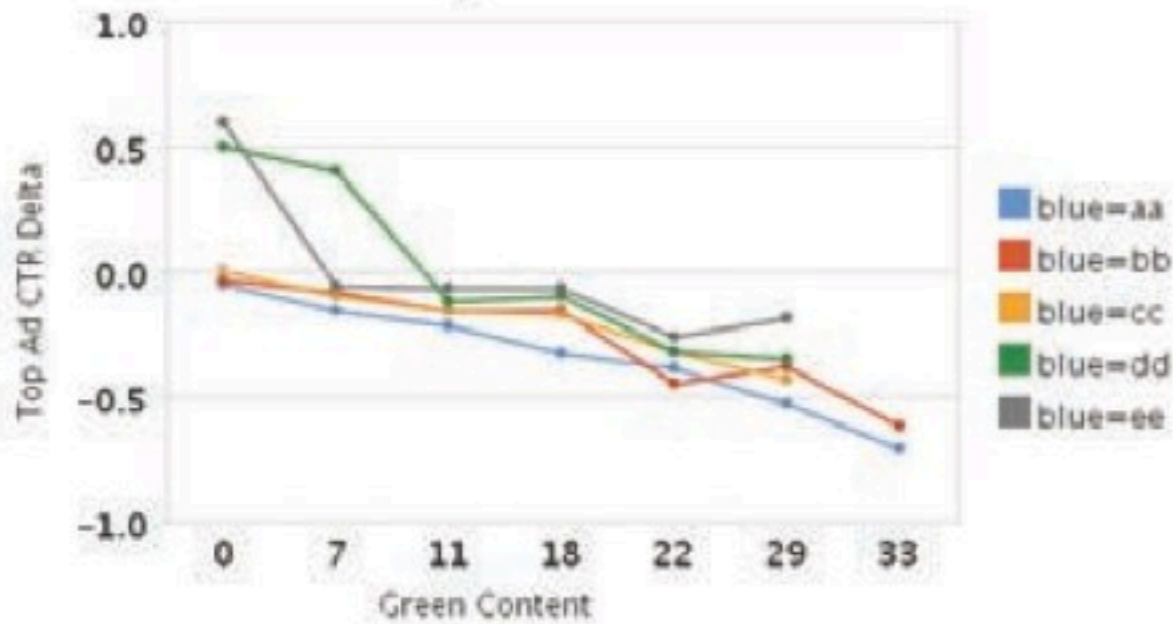


41 Bucket Split Test: ~2.5% of users each got a shade for 2 weeks.

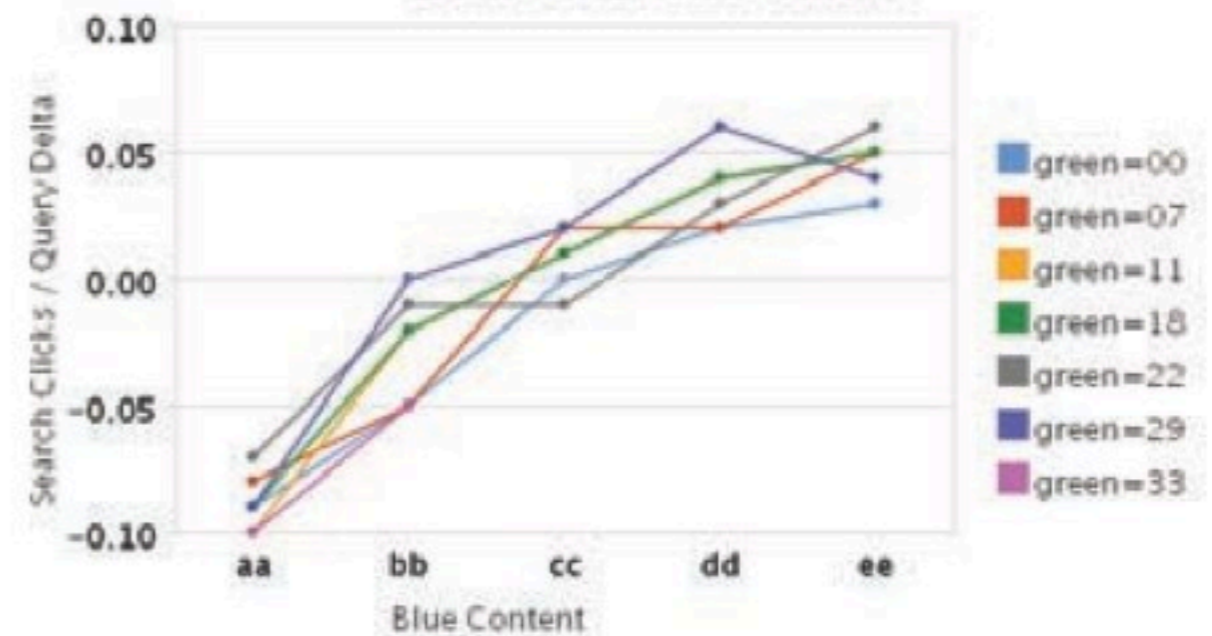


# The Green & Blue Effects

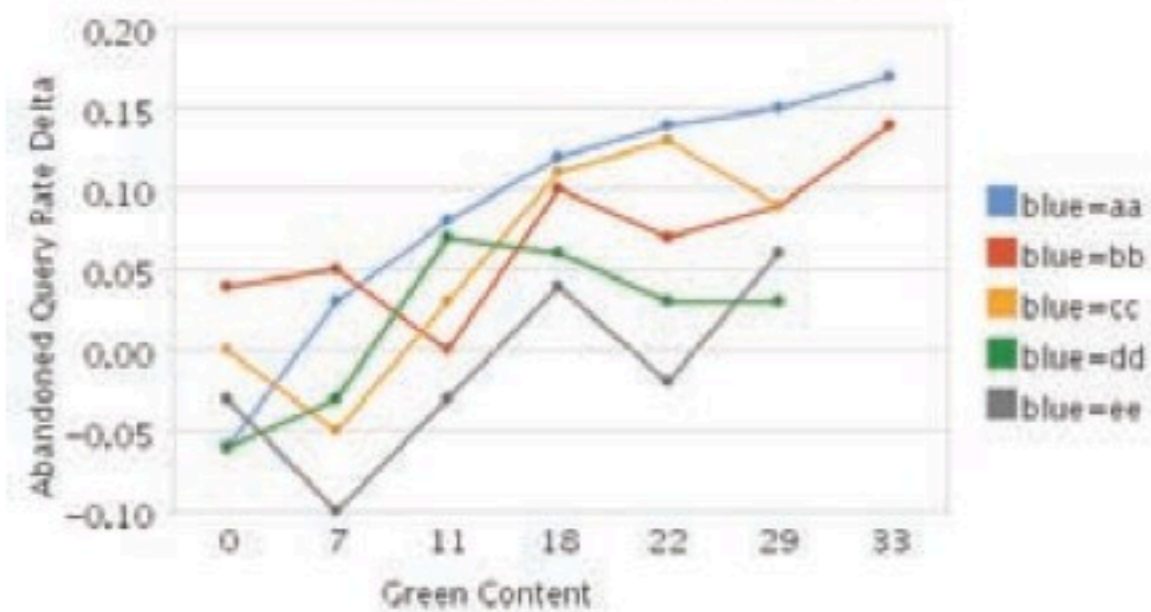
Top CTR vs. Green Content



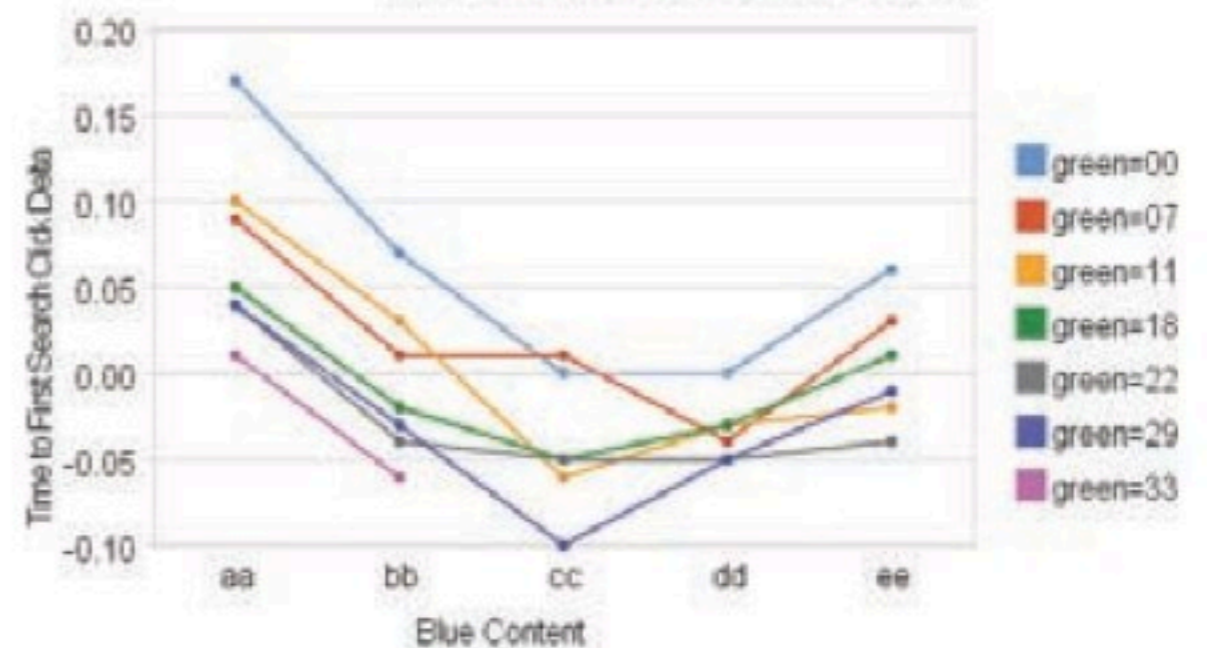
Search CTR vs. Blue Content

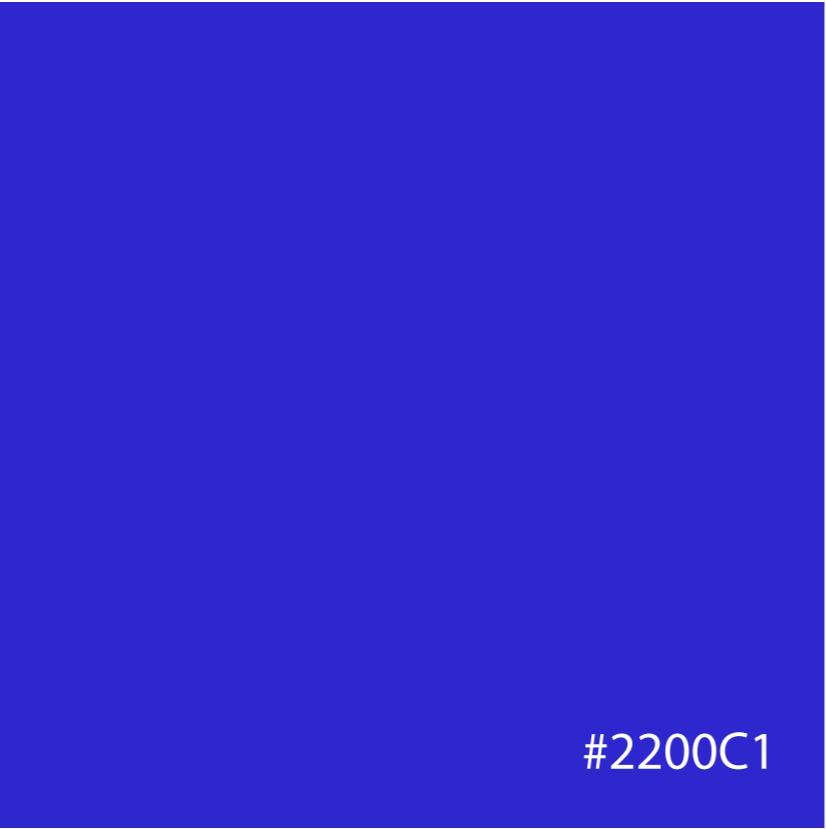


Abandonment Rate vs. Green Content

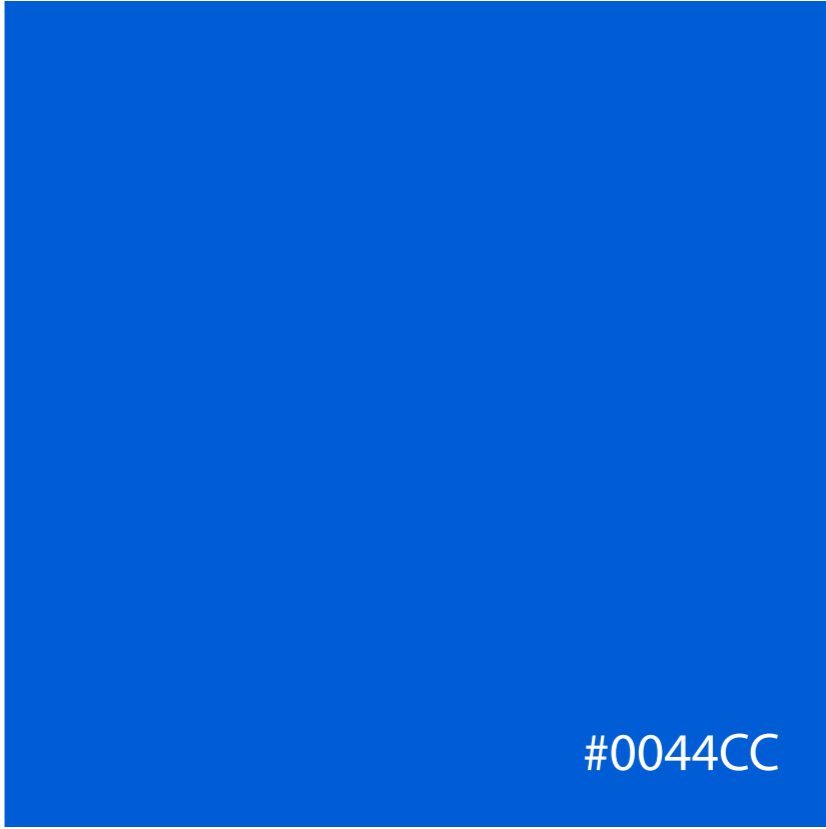


Time to Search Click vs. Blue Content





Google



Bing

“

That blue was worth at least \$80 million.

Paul Ray, UX Manager, Bing



# Doug Bowman on Design at Google



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.**

# Spectrum of Design

**Intuition-Driven**

**Data-Driven**

Make best-guesses  
Rely on previous experience  
Study what others are doing  
Use best practices, principles & patterns  
Aesthetics are integral  
Rely on our gut  
Creative, visionary  
Inherently risky

Doug's words:

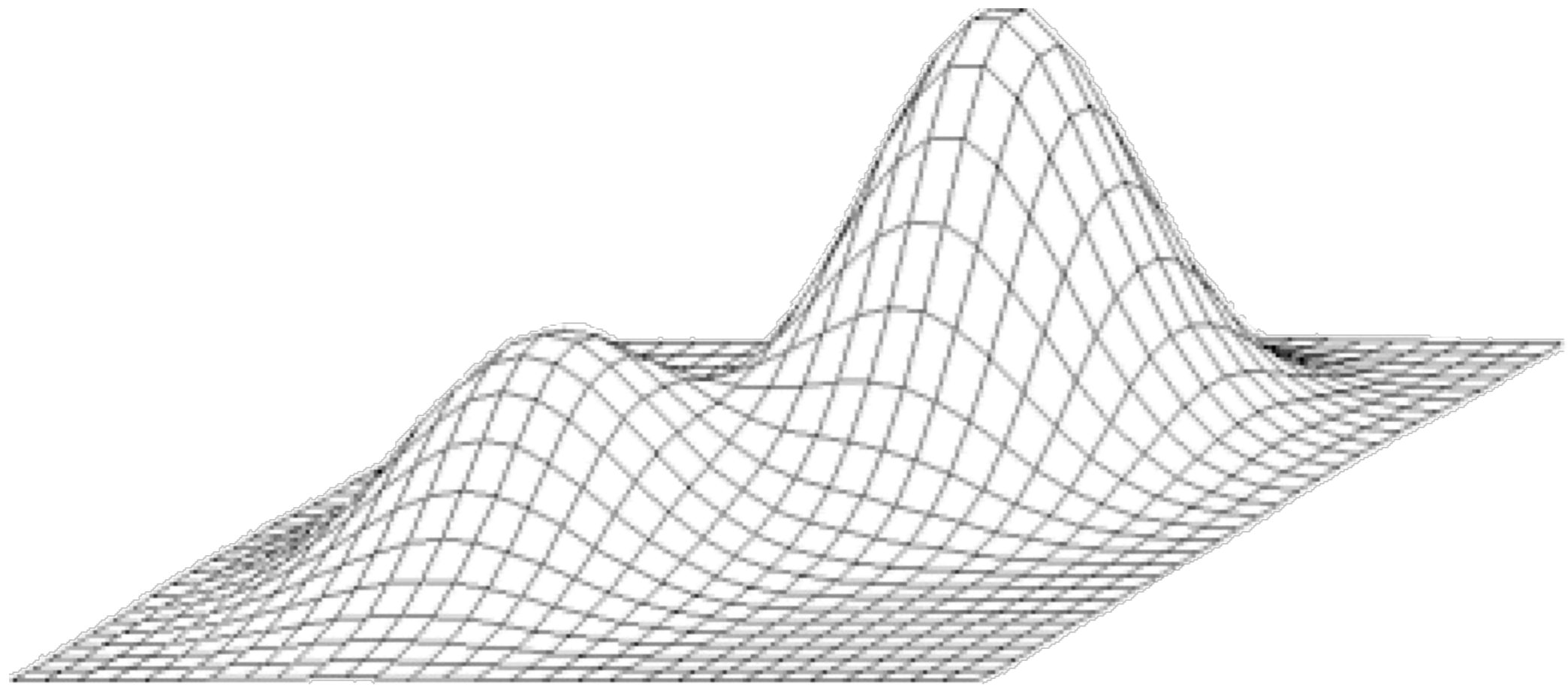
*instinctive, subjective, daring*

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  
Never trust your gut  
Cold, calculating  
Risk-averse

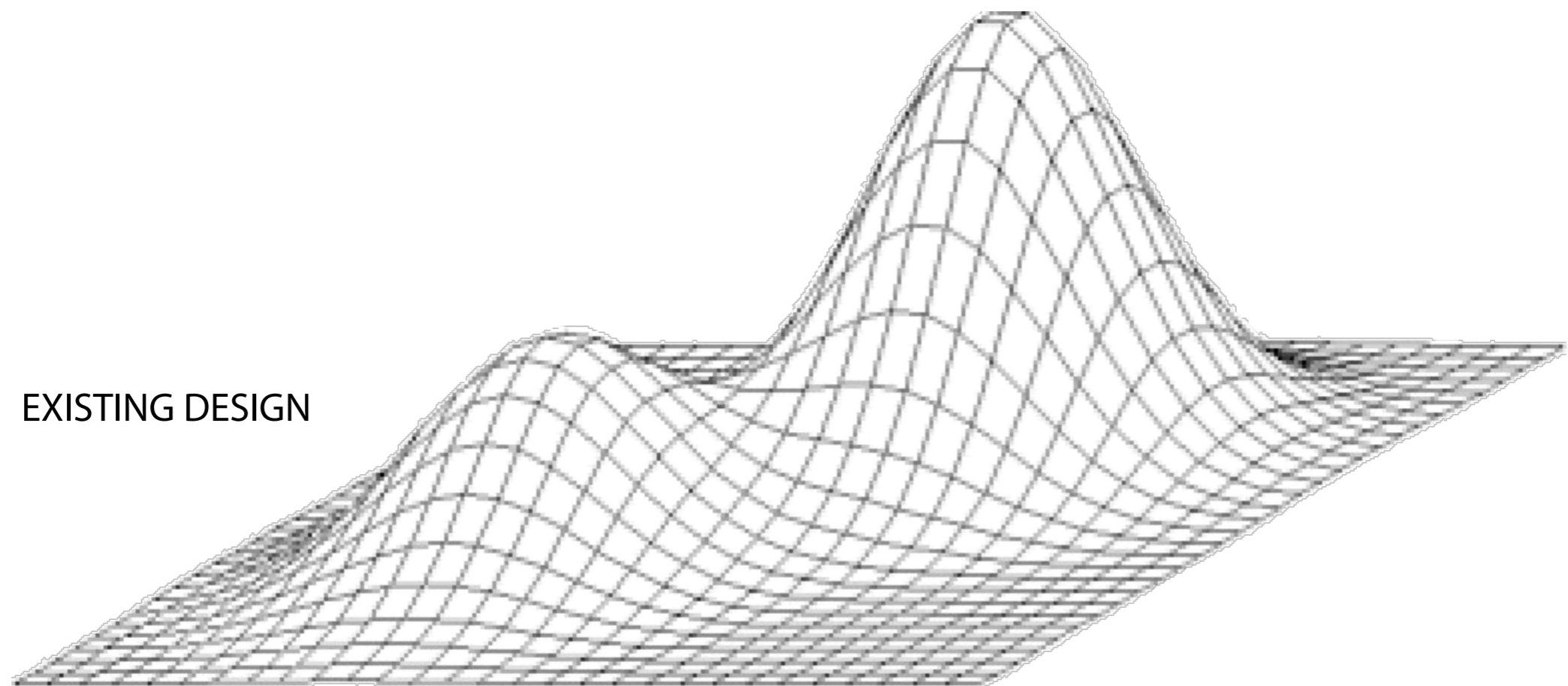
Assumed:

*deliberate, objective, safe*

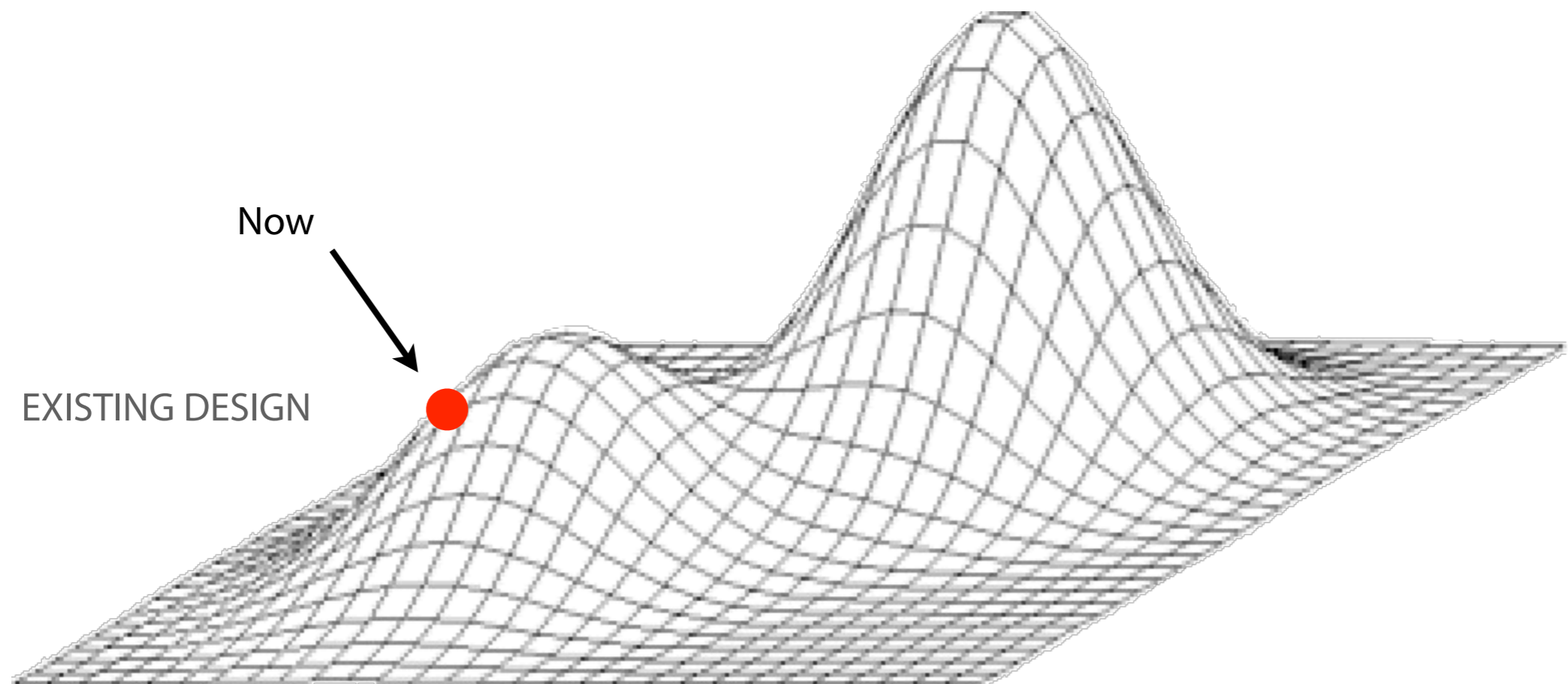
Imagine that your design is a mountain...



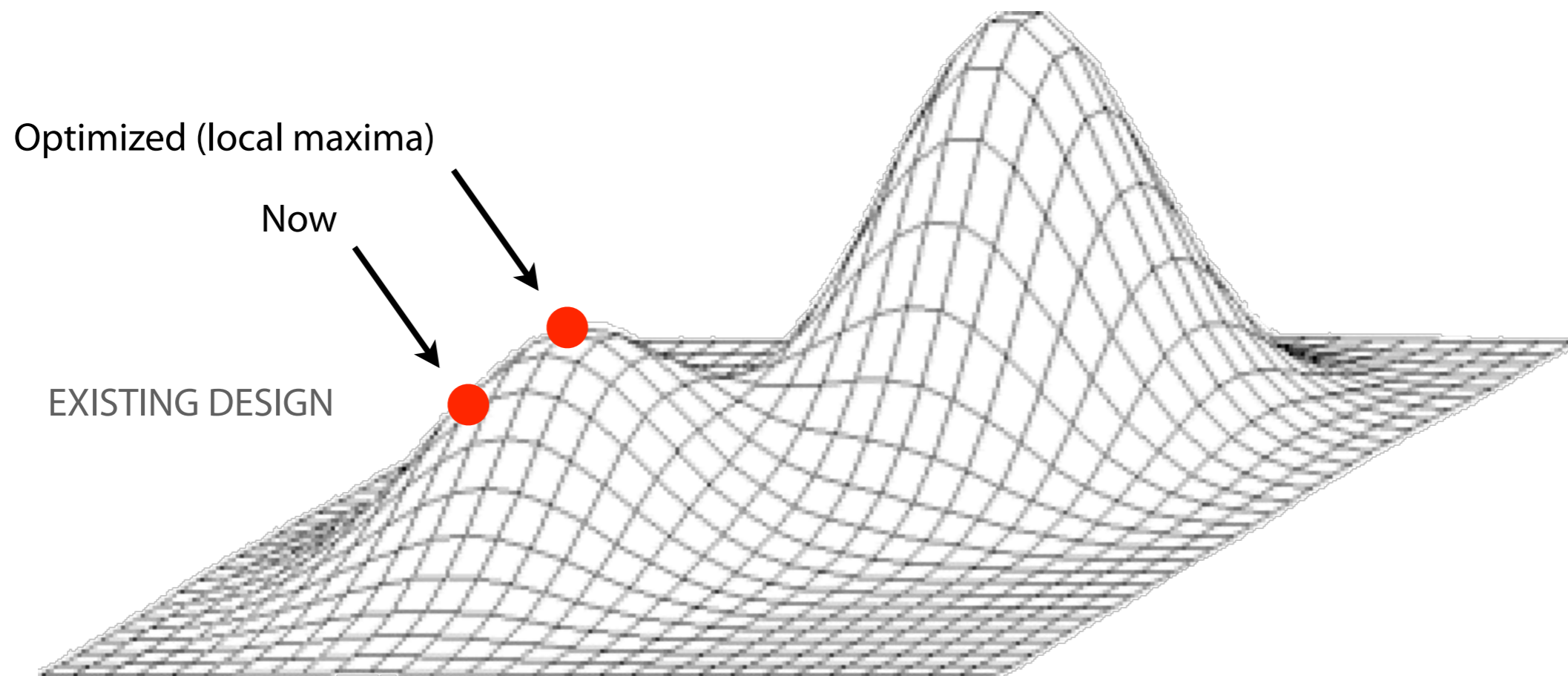
Imagine that your design is a mountain...



Imagine that your design is a mountain...

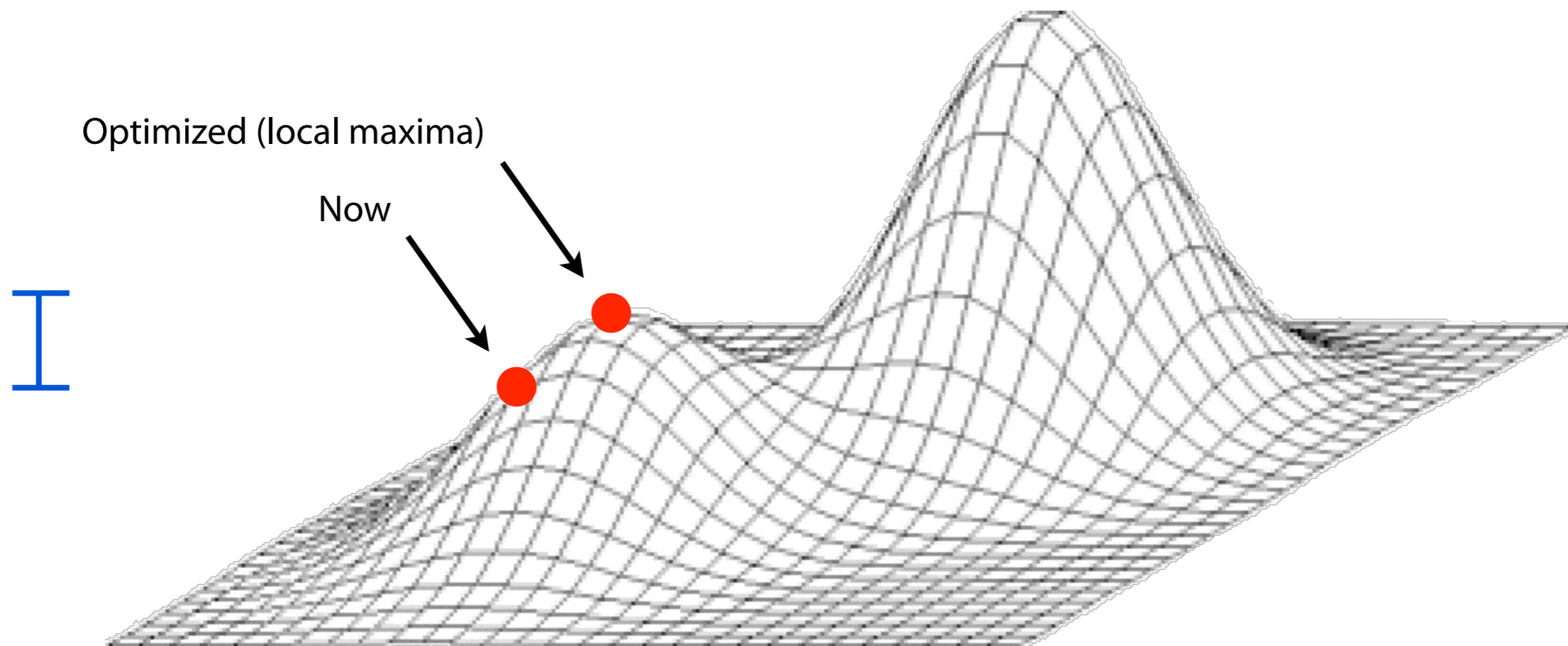


Imagine that your design is a mountain...



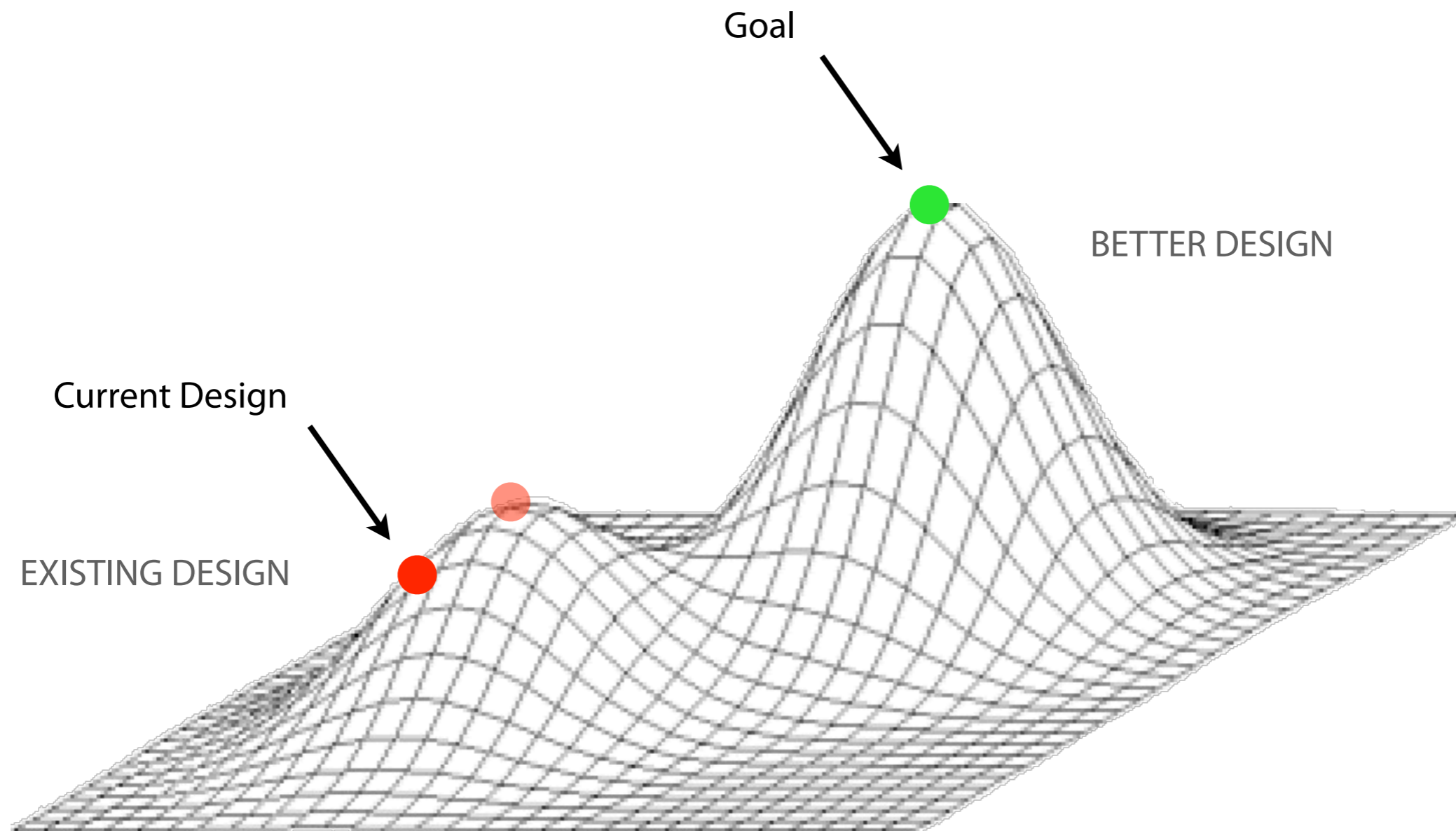
# Imagine that your design is a mountain...

Potential  
Improvement

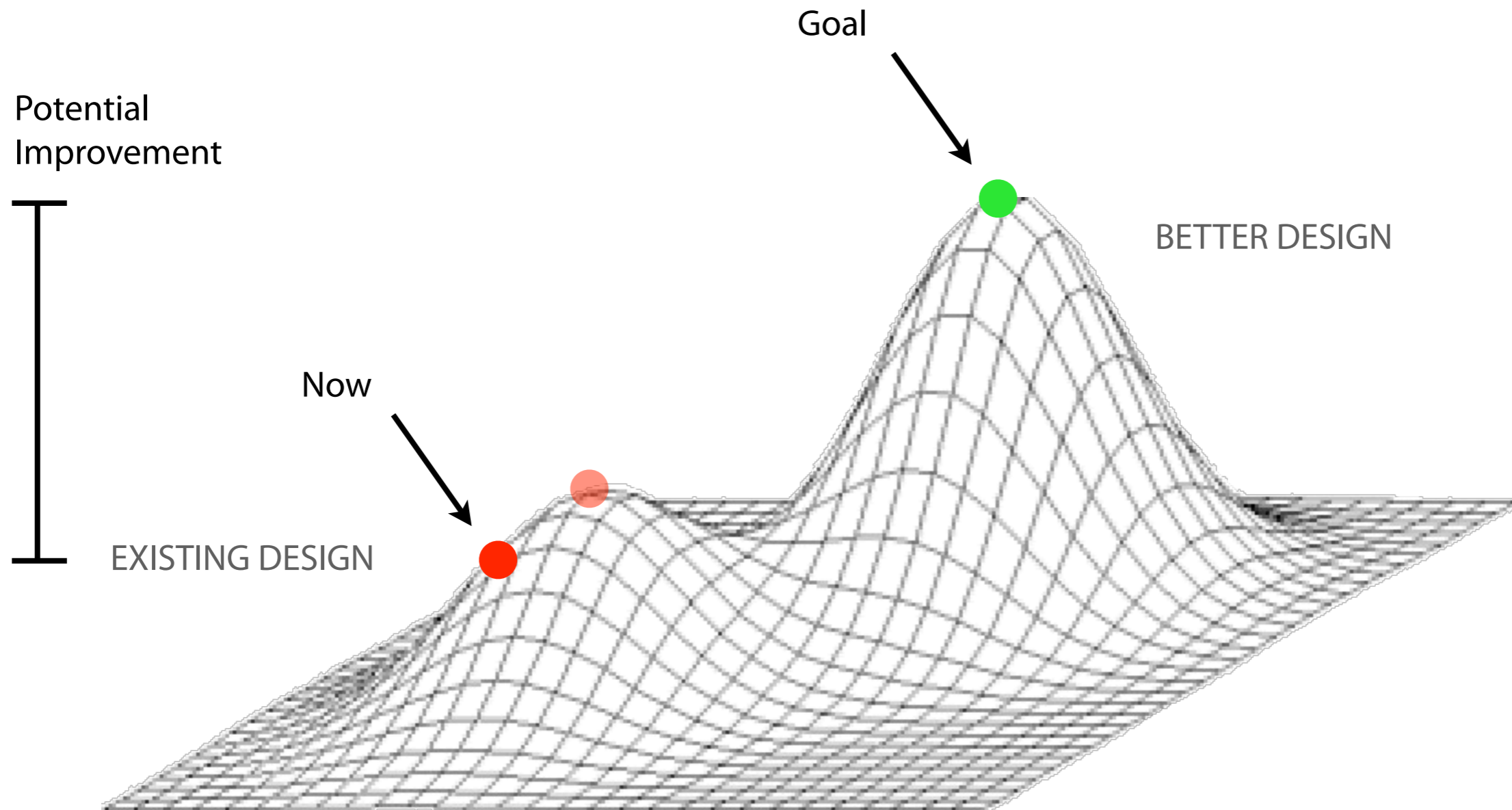




Imagine that your design is a mountain...



# Imagine that your design is a mountain...



Optimization asks:

**What works best in the current model?**

Design innovation asks:

**What is the best possible model?**

# What are Metrics?

## DEFINITION

**Metrics are simply numbers that measure the effectiveness of your business.**

# 5 Reasons why Metrics are a Designer's Best Friend

1. Metrics reduce arguments  
based on opinion.



2. Metrics give you answers about what really works.

3. Metrics show you where you're strong as a designer.

4. Metrics allow you to test anything you want.

**5. Clients love metrics.**

PRINCIPLE

**Your metrics will be as unique  
as your business.**

**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
- Conversion University
- 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**

Date	Percentage	Count
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	3.54%	(720)
Wednesday, April 14, 2010	3.81%	(775)

# Vanity Metrics

○ 0623456784

○ 092345678

○ 0193459

○ 003235976

○ 0123456

○ 0 0 3 2 4  
🤔 🤔 🤔 🤔 🤔

○ 0 1 2 3 4  
🏈 🏈 🏈 🏈 🏈

○ 345678

○ 01234567

○ 012345678

○ 0123456789

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○ 016345678

○ 019385678

○ 092345678

○ 01234567

○ 0123456

○ 012645

○ 0123456789

○ 0123456789

○ 01234567

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○ 092345678

○ 00352354

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○ 0 2 5 4 3  
🐻 🐻 🐻 🐻 🐻

○ 01234567

○ 009051

○ 0123456789

○ 01234567

○ 0190822

○ 0123456789



# The Usage Lifecycle



Interested



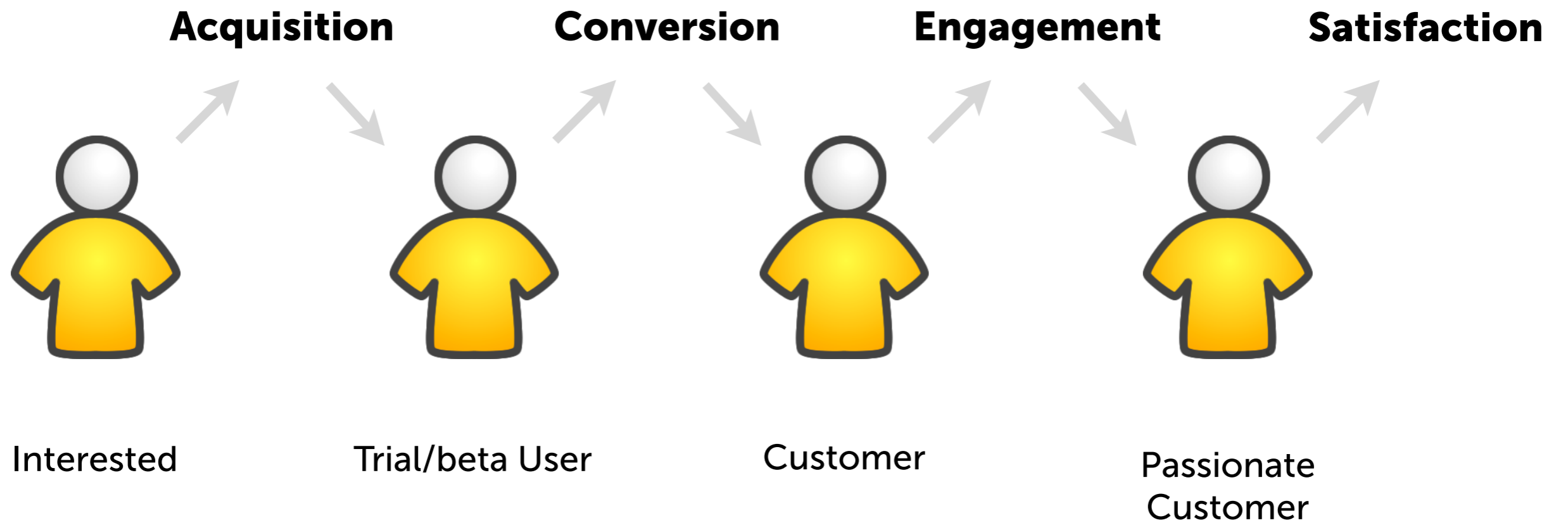
Trial/beta User



Customer



Passionate  
Customer



With metrics you are essentially just measuring how well you move people along the lifecycle!

# Acquisition Metrics

## CPA - Cost per Acquisition

If your CPA is higher than your LTV  
then you're in trouble.

# 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 Lifecycle



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

Dropbox's referral program with 2-sided incentive increased sign-ups by 60% permanently.



# Performable Acquisition Metrics

**Comparative Metrics**

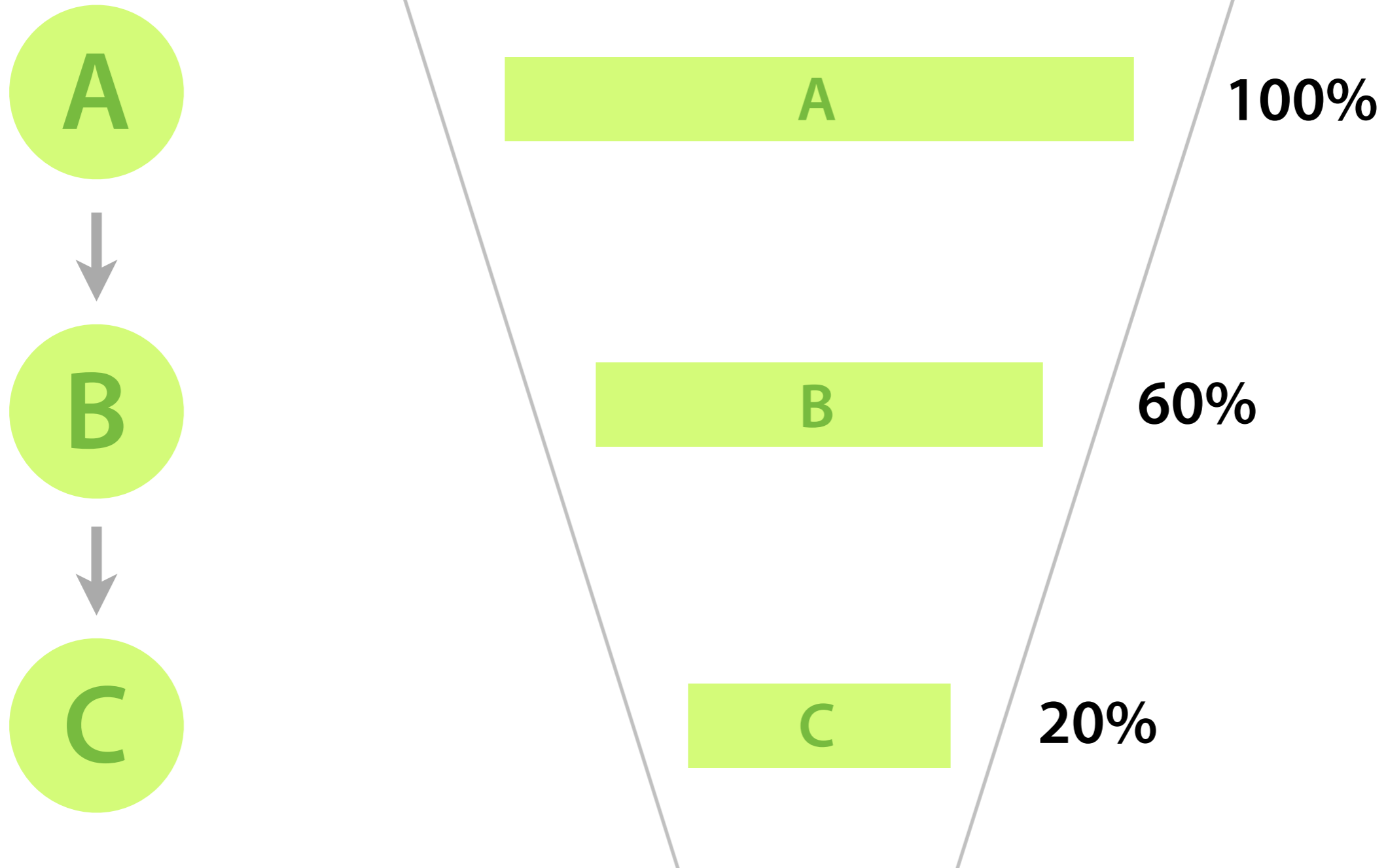
**Revenue by Channel**

**Revenue by Keyword**

# Conversion Metrics

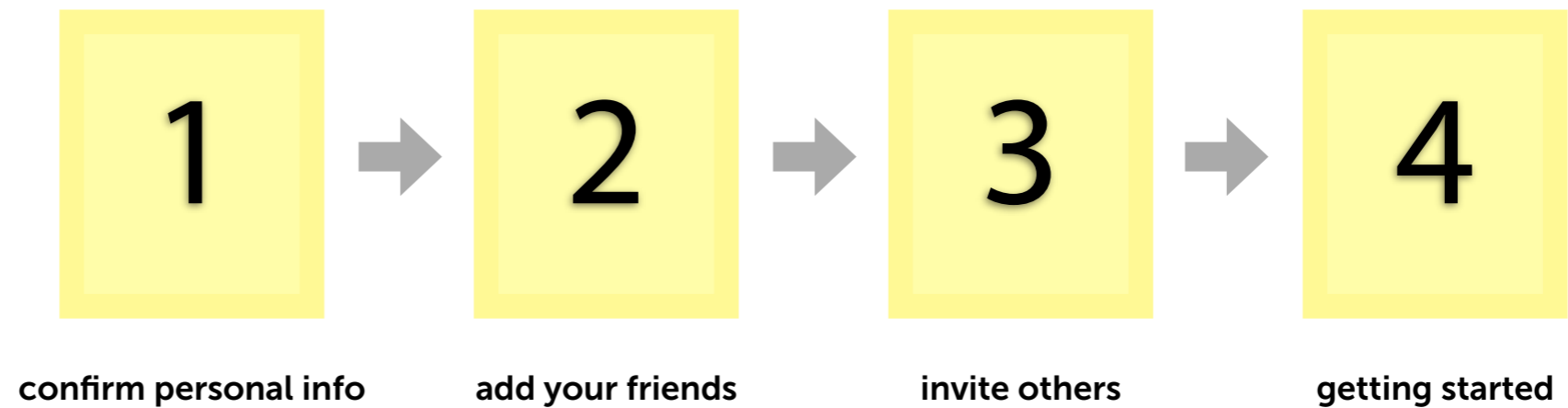
**Trials / Conversions = Conversion Rate**

# Conversion Funnel Analysis



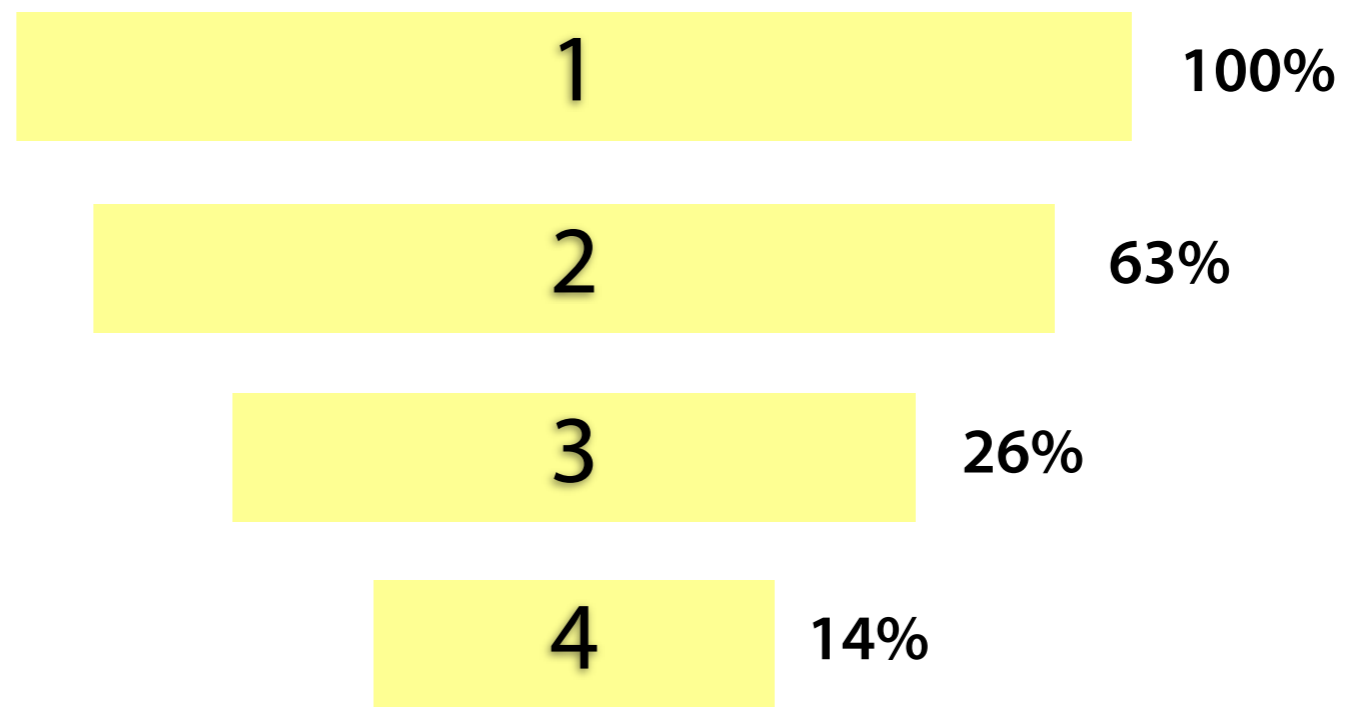
# Sign-up Conversion Funnel

## Original Flow



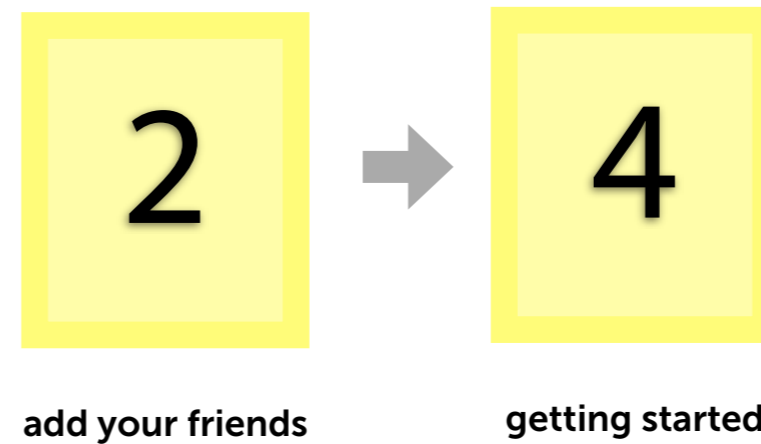
## Original Conversion Funnel

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







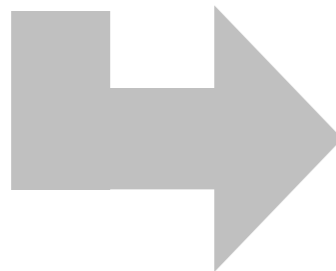
## New Conversion Funnel

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



# Engagement Matters: Twitter

Select All		
<input type="checkbox"/>	 <b>Michael Ian Black</b>	The Official Michael I Page
<input type="checkbox"/>	 <b>50cent</b>	The Real 50 Cent
<input type="checkbox"/>	 <b>UstreamTV</b>	Official Tweets about streams, updates and Ustream. If you need @ustreamsupport
<input type="checkbox"/>	 <b>GavinNewsom</b>	San Francisco Mayor



twitter

Home Profile Find People Settings Help Sign out






## Look who else is here. Start following them!

Browse Suggestions Find Friends Invite by email Find on Twitter

Look who else is here! Follow the ones you like.

- Art & Design
- Books
- Business
- Charity
- Cuisine
- Entertainment
- Family
- Fashion
- Funny
- Health
- Music**
- News
- Politics
- Science
- Sports
- Staff Picks
- Staff Picks for Haiti
- Technology
- Travel
- Twitter

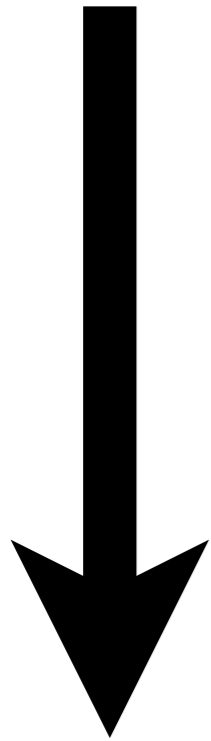
### Sources in Music

-  **Paul van Dyk** Verified  
@paulvandyk  
Location: Berlin  
Bio: Grammy nominated artist and globally acclaimed DJ and Producer
-  **Brandy Ray' Norwood** Verified  
@4everBrandy  
Location: The moment  
Bio: Singing like a blue bird
-  **50cent** Verified  
@50cent  
Location: NYC  
Bio: The Real 50 Cent
-  **Al Yankovic** Verified  
@alyankovic  
Location: Los Angeles  
Bio: You know... the Eat It guy.
-  **Amanda Palmer** Verified  
@amandapalmer  
Location: Boston, MA  
Bio: lead singer of The Dresden Dolls / punk cabaret force of nature

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

# Engagement Metrics





- Hits
- Page views
- Visits
- Unique Visitors
- Returning Visitors
- Registered Users
- Customers
- Frequency
- Time on Site
- Daily Active Users

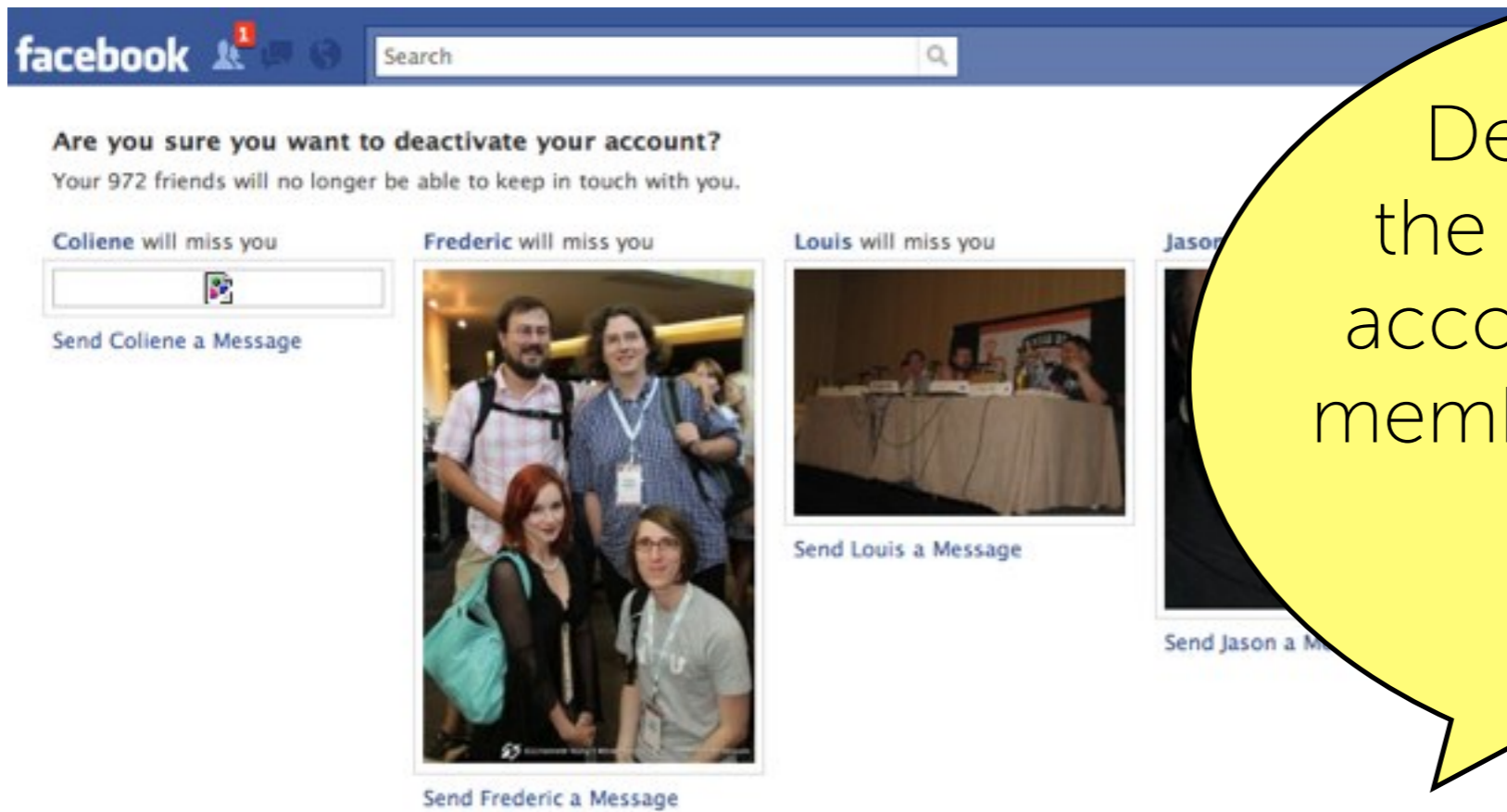
# Cohort Analysis

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

In this case engagement is improving nicely.  
Of the January cohort, only 20% were engaged in month 2.  
Of the October cohort, 53% were engaged in month 2.

<http://redeye.firstround.com/2008/01/after-the-techc.html>

# Prevention: Facebook Deactivation



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

Julie Zhou, Facebook

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:

[http://www.readwriteweb.com/archives/what\\_happens\\_when\\_you\\_deactivate\\_your\\_facebook\\_acc.php](http://www.readwriteweb.com/archives/what_happens_when_you_deactivate_your_facebook_acc.php)

# Satisfaction Metrics

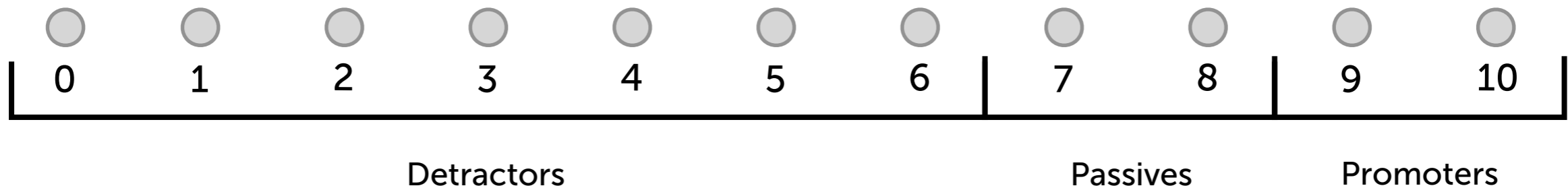
# Referral: Net Promoter Score

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

0 1 2 3 4 5 6 7 8 9 10

# Net Promoter Score

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



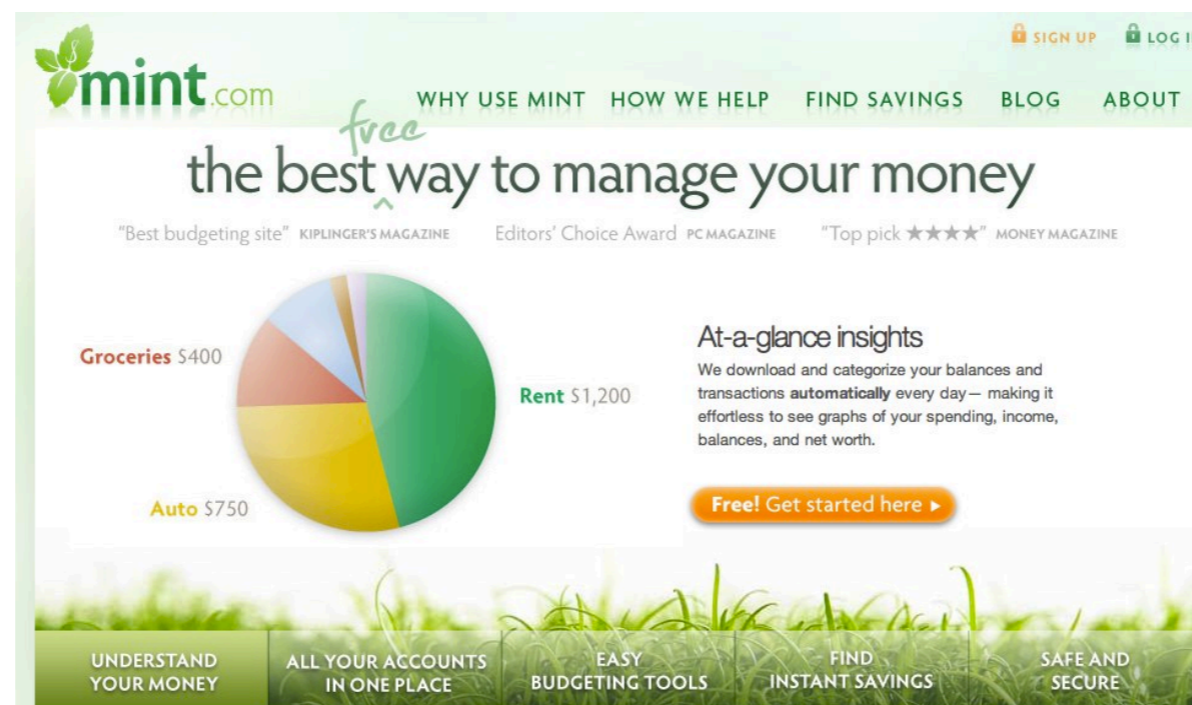
**Score = % Promoters - % Detractors**

# 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



# Emergent Metrics



# Emergent Metrics: 5 Friends

The screenshot shows the FriendFeed homepage. At the top, a blue bar says "Home". Below it, a notification says "You have 1 invitation from Zee." There is a search bar and a link to "Add: Photos". The main content area features a post by David Recordon with a profile picture, a title "Wedding - http://www.flickr.com/photos...", a photo of a wedding scene, and interaction links "Comment - Like - Share - Hide". Below the post is a promotional banner titled "Find the people you know on FriendFeed" with the subtext "Shameless self-promotion" and "Import your address book to see which of your friends are already using FriendFeed". The banner includes icons for Facebook, Twitter, Gmail, Yahoo!, and Hotmail, along with the text "0 seconds ago - Hide". At the bottom, a post by Tony is partially visible with the text "Pennsylvania has hit that time of the year where it redefines green. Lying in the field contemplating a life far removed from manhattan".

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

Bret Taylor, Friendfeed

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

# Principles of Metrics-Driven Design

1. Optimize in small steps; innovate with daring leaps.
2. No design survives contact with the user.
3. Small improvements, taken together, yield amazing results.
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.



# This Talk.

<http://bokardo.com/talks/metrics-driven-design/>

# My Life.



<http://performable.com>



<http://oneflightbooks.com>