

Workshop on Design and Development of Web-Based Products and Services

January 2016
Wharton San Francisco

(OIDD 652 – Spring 2016)

Professor Karl Ulrich
Jin-Ah Lee (TA)

Slides for Monday Topics:

- Product development processes
- Innovation tournaments
- Opportunity Identification
- Mission statements
- Identifying customer needs
- Developing product concepts



Entrepreneurship & Innovation Course Portfolio

MGMT 731 – Technology Strategy (652 reinforces: *what is innovation, needs-pull*)

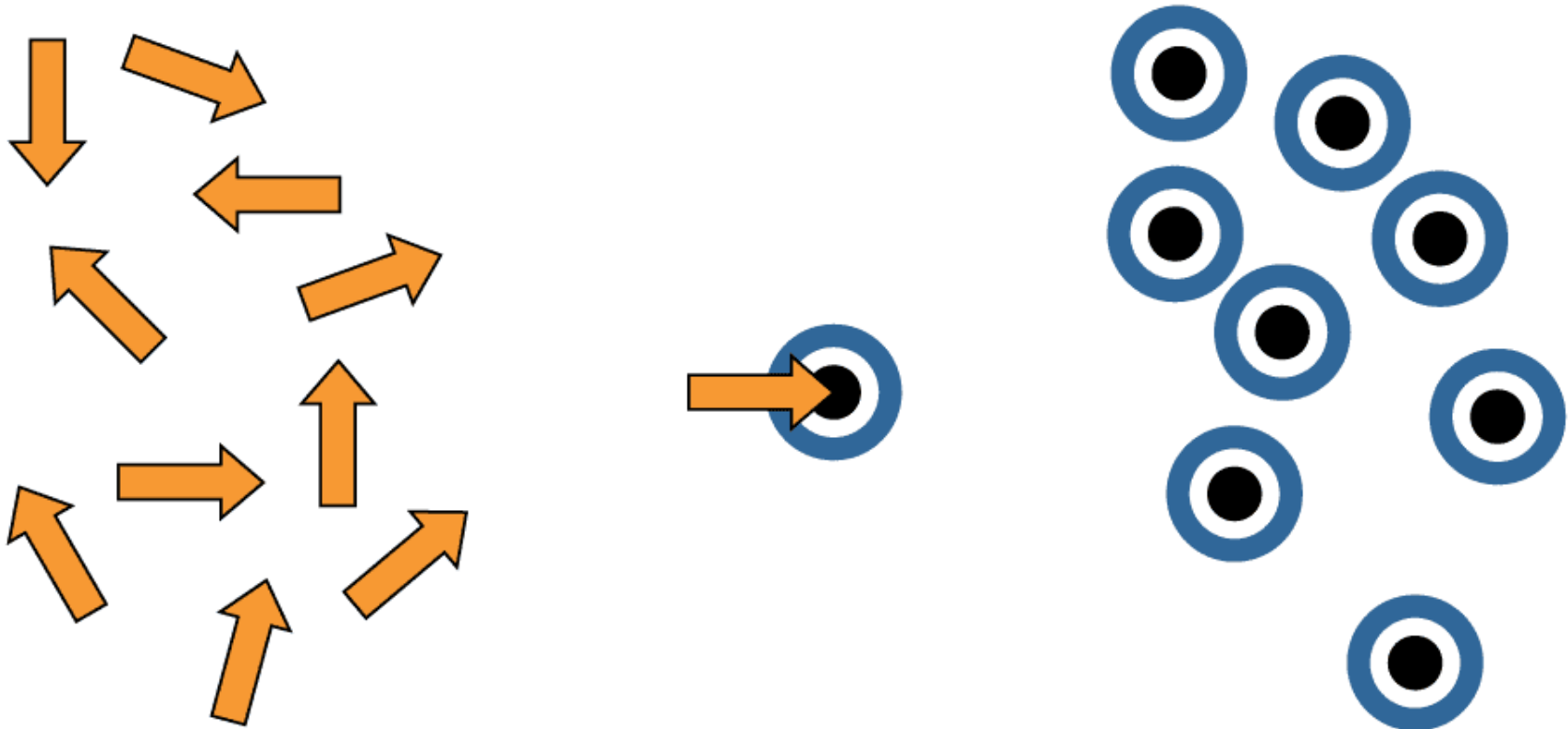
OIDD 614 – Innovation (652 reinforces *tournaments, prototypes*)

OIDD 654 – Product Design and Development (652 reinforces *VIDE, needs*)

OIDD 652 – Design of Web-Based Products and Services

innovation

A new match between a solution and a need.



Value Creation in Innovation

1. Is the need real?



2. Does the solution meet the need?



3. Is the “customer” willing to pay more for the solution than it costs to deliver it?



Price – Cost >> 0

candidate.com

- Match voters and candidates on multiple issues
 - Rank according to preferred solutions and level of importance
- 



Josh Woodford - Candidate.com

candidate.com

Problem: Voters struggle to determine which candidates most closely align with their positions and values without spending significant time in the process



Opportunity: Significantly decrease the amount of time required to learn about candidate's positions



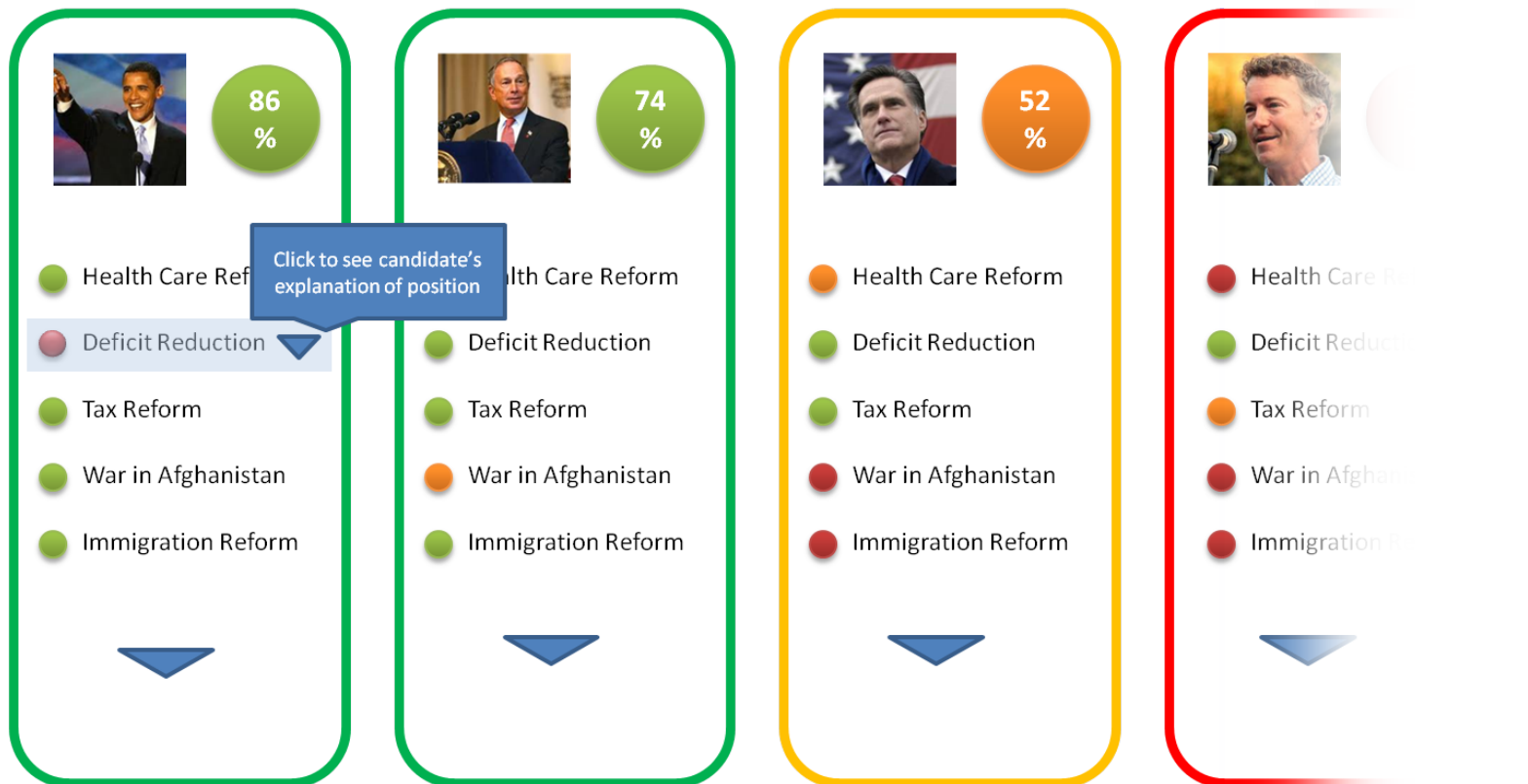
Customer Needs:

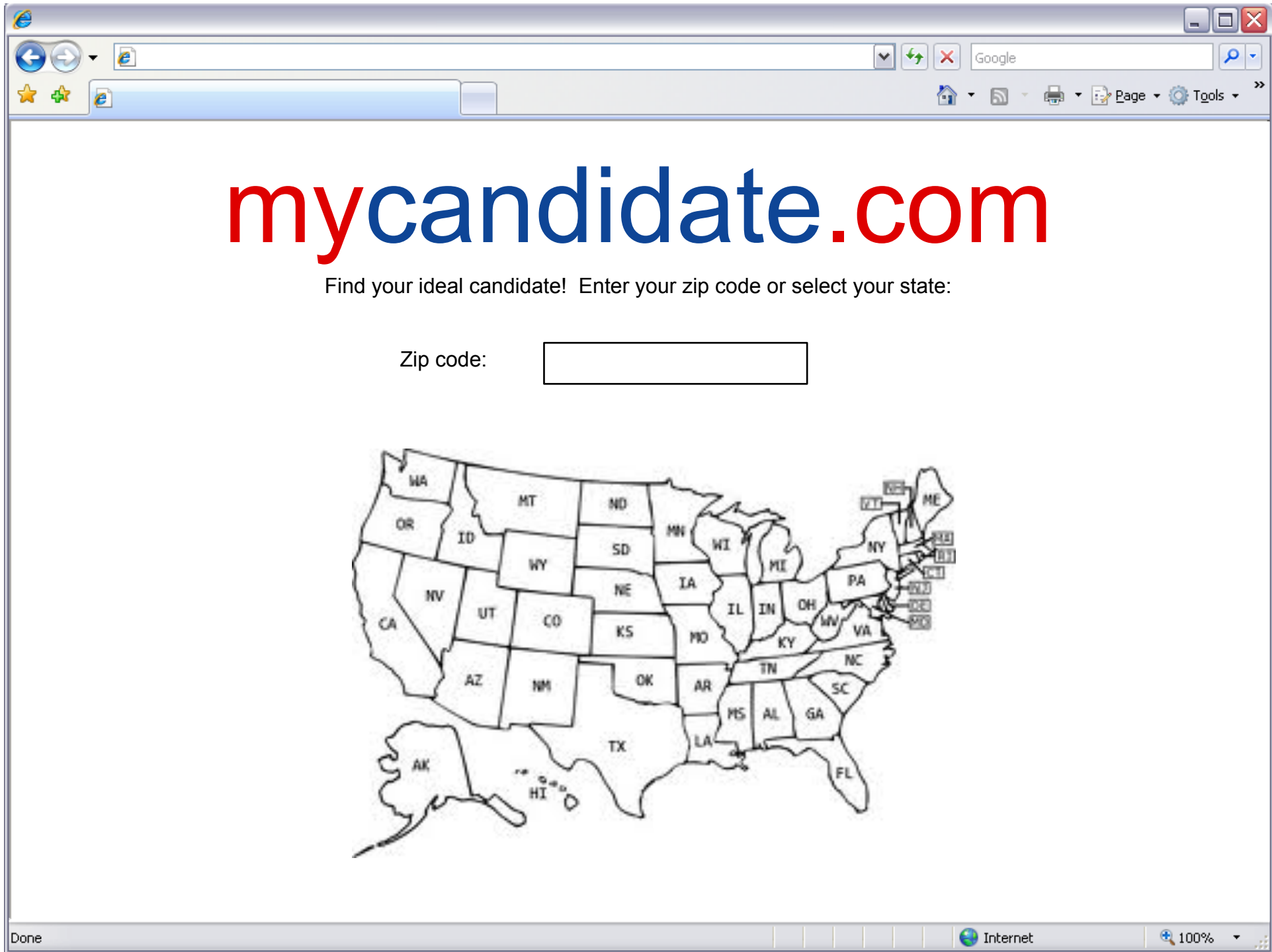
- Candidate positions on important issues
- Matching tool to streamline candidate selection
- Basic biographical data on each candidate
- Graphical presentation
- User friendly interface

candidate.com

Concept

- Match voters and candidates on multiple issues
- Rank according to preferred solutions and level of importance
- Display in interactive graphical format

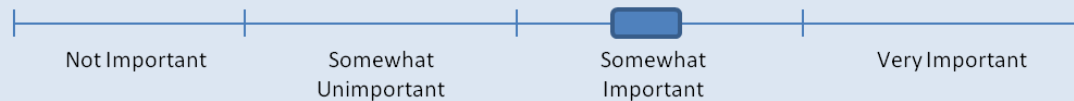




mycandidate.com

1 What is your preferred solution to immigration reform?

How important is this topic to you?



A. Maintain status quo



B. National ID card and 5 yr maximum guest residency



C. Increase border security and naturalize all illegal immigrants



D. Increase enforcement at employer level



E. Increase enforcement at employer level and transport illegal immigrants back to home country



Total Points
Allocated
(out of 100):

82

mycandidate.com

Before we return your results, please tell us a little about yourself:

Gender: ☐ Male ☐ Female

Age:

Address:

Party Affiliation:

Income:

Education level:

Done Internet 100%

mycandidate.com



86
%

● Health Care Reform

● Deficit Reduction

● Tax Reform

● War in Afghanistan

● Immigration Reform



74
%

● Health Care Reform

● Deficit Reduction

● Tax Reform

● War in Afghanistan

● Immigration Reform



52
%

● Health Care Reform

● Deficit Reduction

● Tax Reform

● War in Afghanistan

● Immigration Reform



● Health Care Reform

● Deficit Reduction

● Tax Reform

● War in Afghanistan

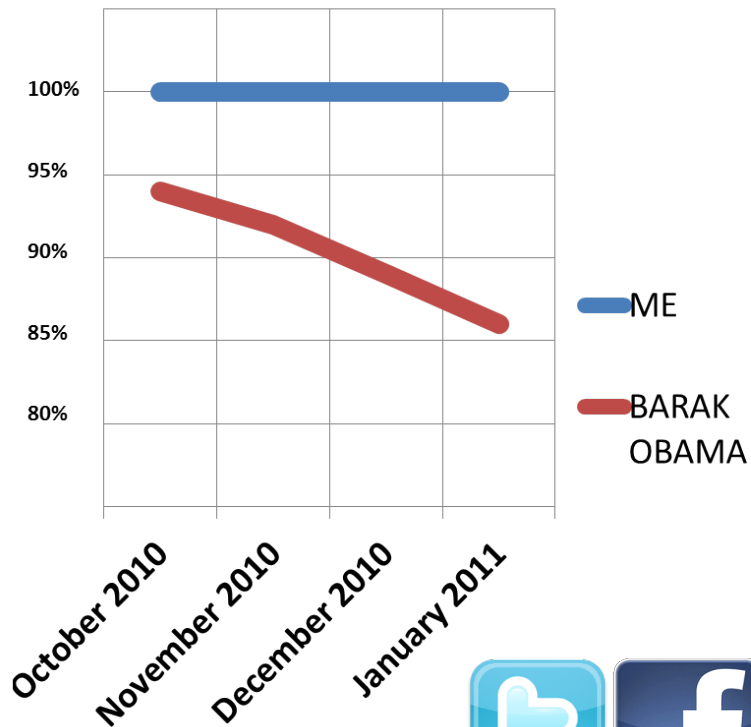
● Immigration Reform



Click to see candidate's
explanation of position

mycandidate.com

My Relationship with BARACK OBAMA



-3 %

Since last month, Barack Obama's alignment with your views has decreased 3%.

Since August 2010, Barack Obama's alignment with your views has decreased 7%.



mycandidate.com



86 %

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- Health Care Reform
- Deficit Reduction
- Tax Reform
- War in Afghanistan
- Immigration Reform

Sponsored Ad



Advertisement insertion points



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- Health Care Reform
- Deficit Reduction
- Tax Reform
- War in Afghanistan
- Immigration Reform



74 %

- Health Care Reform
- Deficit Reduction
- Tax Reform
- War in Afghanistan
- Immigration Reform



OPIM 654

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Bid 2	\$33,660
Bid 3	\$34,680
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Rob Weber
Philadelphia, PA

Romney



Huntsman



Obama



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Versa

Overview

Timeline

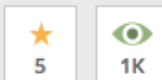
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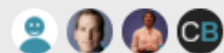
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STATISTICS



TOP CONTRIBUTORS



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Overview

UPDATE

Status

Acquired by [Change.org](#) on March 3, 2015

Total Equity Funding

\$2M in 3 Rounds from 9 Investors

Headquarters: [New York, NY](#)

Description: A thriving press and an informed, engaged public.

Founders: [John Mertens, Keya Dannenbaum](#)Categories: [Advertising, Digital Media](#)Website: <http://www.versahq.com>Social: [f](#) [t](#) [in](#)

Company Details

UPDATE

Founded: November 1, 2011

Aliases: [electnext](#)Contact: hello@versahq.com

Employees: 7 in CrunchBase

Business models for online news are developing in ways that threaten the civic value of journalism.

Trusted Business-to-Business Reviews

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1. Medbio

★★★★★ 21 Reviews

“ I've been working with Medbio, specifically around their assembly and injection molding process for many of our products. I'm very impressed by their dedication to high quality work and attention ...

BIOMEDevice San Jose Vendor List

Miss the December 2014 [BIOMEDevice San Jose trade show](#) or want to review the companies you met there? VendOp has a customizable list of the vendors that were there complete with ratings.

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Status

UPDATE ▾

CarHound has been closed

Most Recent Funding

\$150 Thousand Debt Financing on January 1, 2012Headquarters: **Pasadena, CA**

Description: CarHound is an online platform that allows car buyers to set the price for a car and have local dealers compete for their business.

Founders: **David Kopec, Andrew Liu**Categories: **Marketplaces, Auctions, Automotive**Website: **<http://www.carhound.com>**

CONTRIBUTORS TO THIS PROFILE

[SEE DETAILS](#)

Company Details

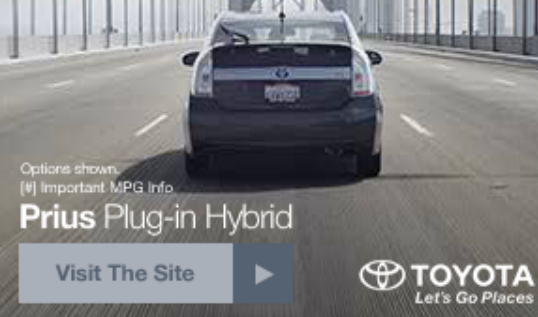
UPDATE ▾

Founded: April, 2011
Closed: Closed, Date Unknown
Contact: **andrew@carhound.com**
Employees: **2 in CrunchBase**

Share:



Let's have it all.

 Graph Insights

CarHound's Current Team worked at:

 **SecondConnection**

1

 SEE ALL

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(December 2014 valuation \$40B)

Model of Success in Innovation

(“VIDE” model)

Value = fn(Idea x Development x Exogeneous Factors)

Success can be thought of as the result of the conjunction of idea quality, the development process, and the exogenous environmental factors.

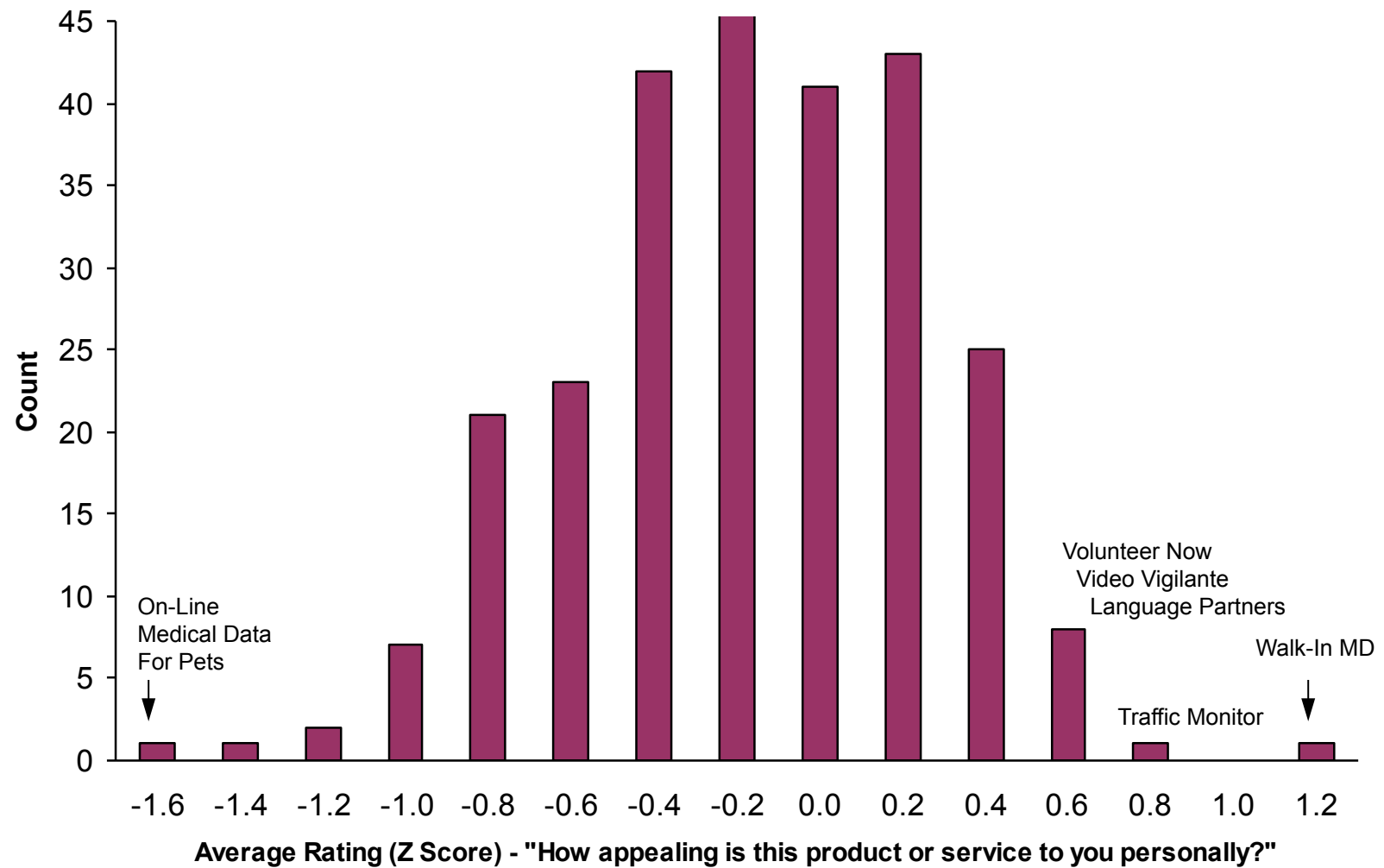
Sow’s Ear Hypothesis: you can’t turn a sow’s ear into a silk purse...the idea is critical.

Midas Hypothesis: the right team, process, and resources can turn any idea into gold.

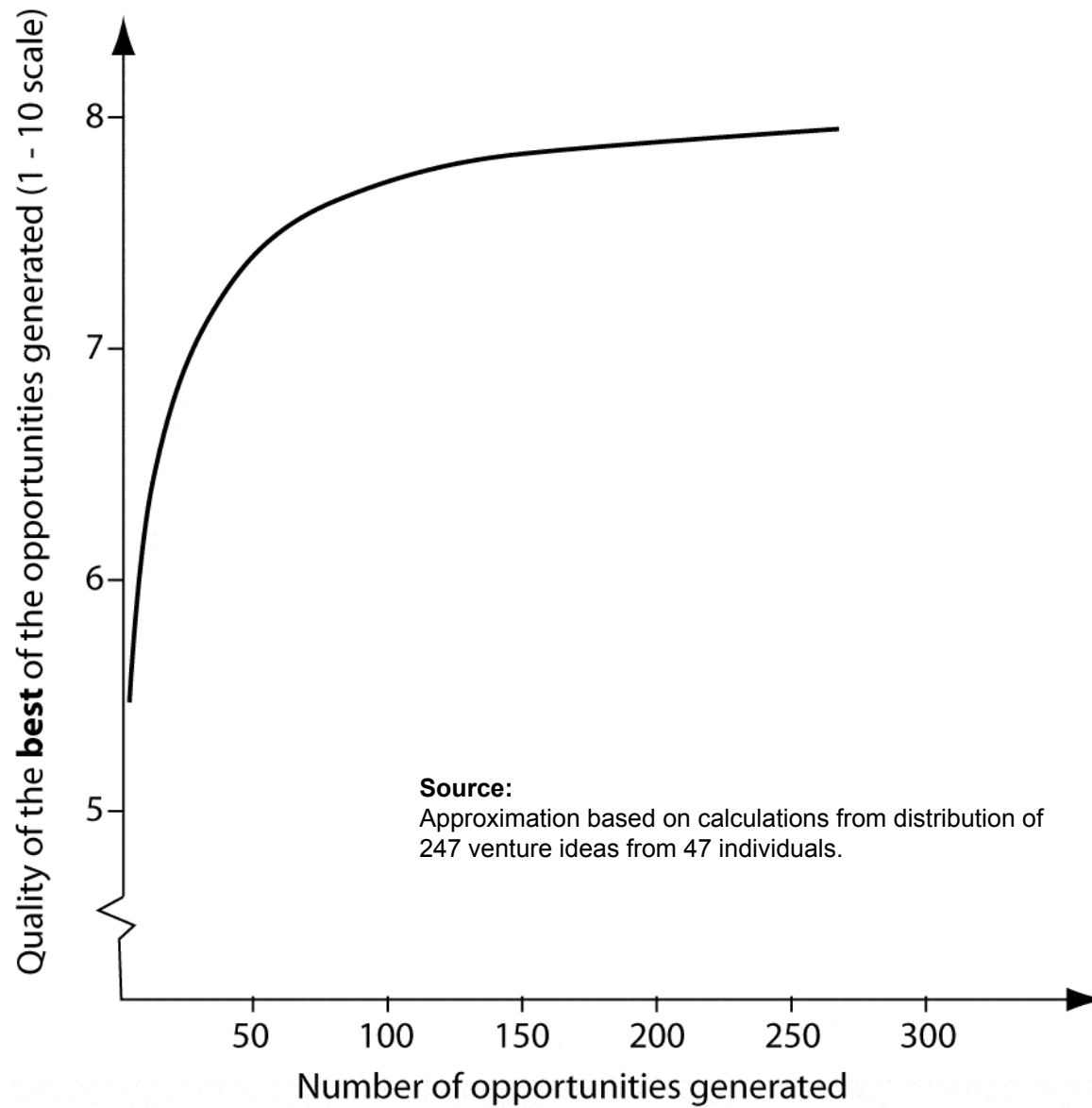
The Vegas hypothesis?

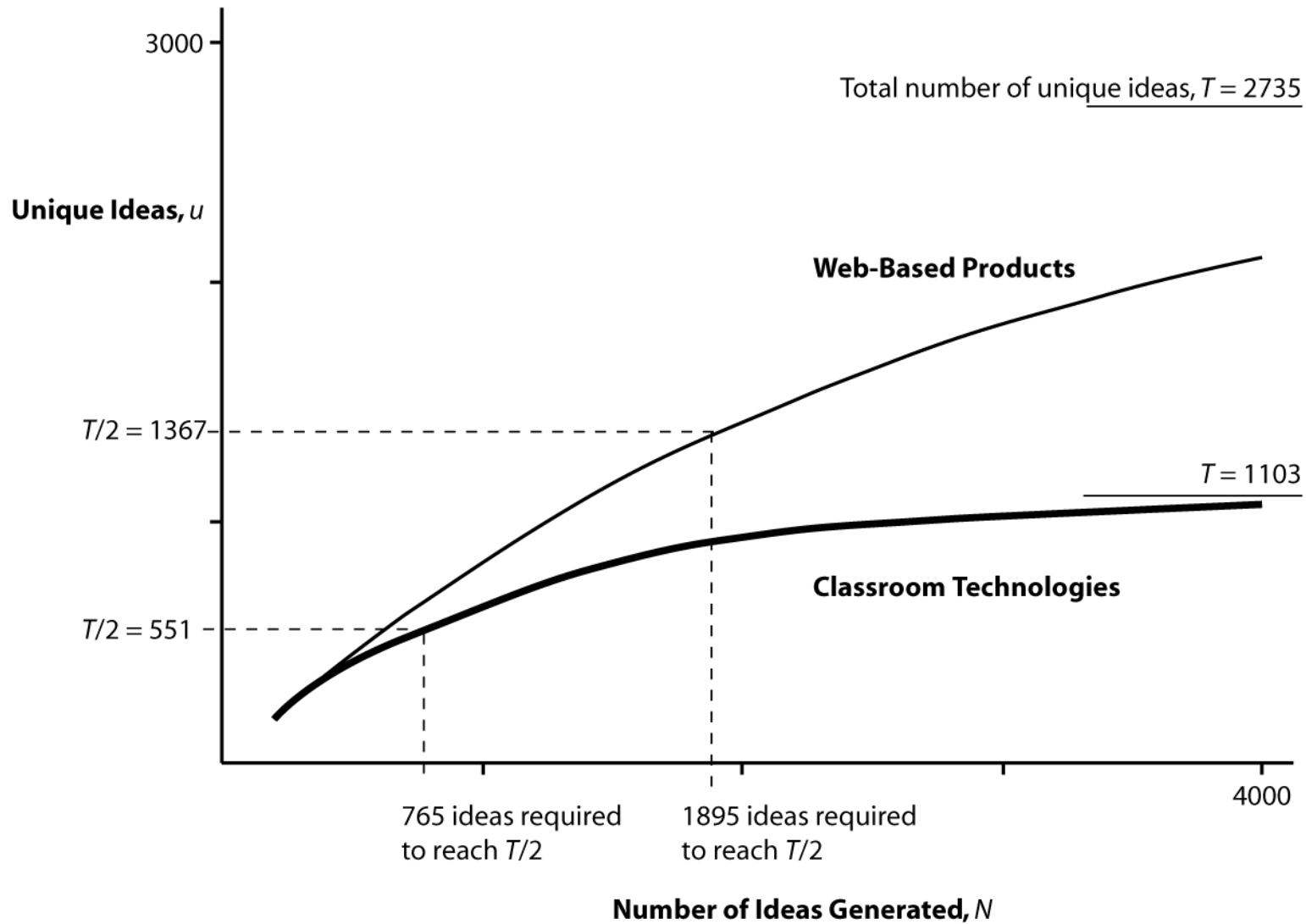
Source: Kornish, Laura J. and Ulrich, Karl T., The Importance of the Raw Idea in Innovation: Testing the Sow's Ear Hypothesis, to appear *Journal of Marketing Research*, Available at SSRN: <http://ssrn.com/abstract=2035643>

Data from Darwinator for 2009 Workshop
(using normalized/standardized scores, i.e. Z-score)

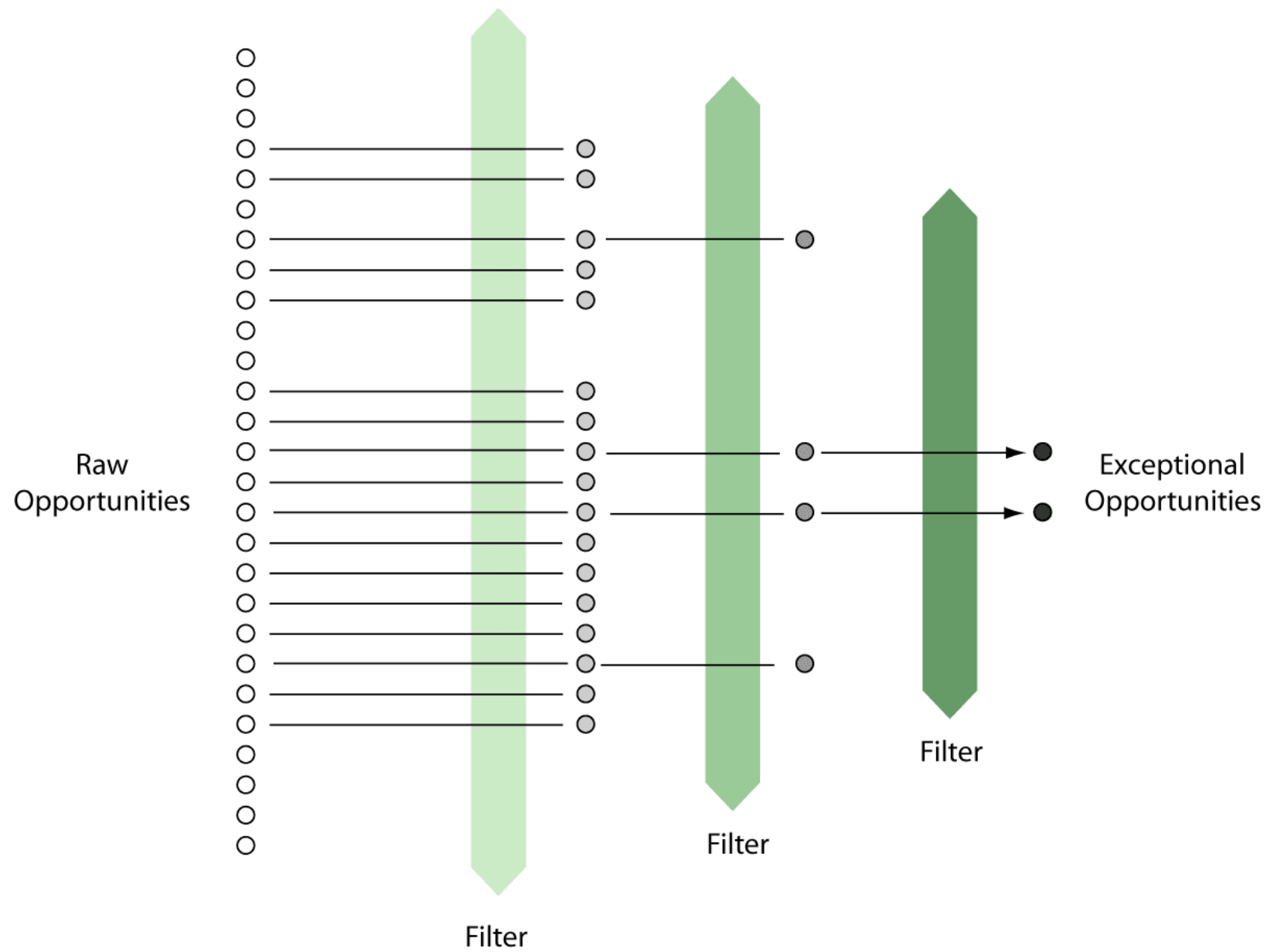


Expected Quality of *Best Idea* as Function of Number of Ideas

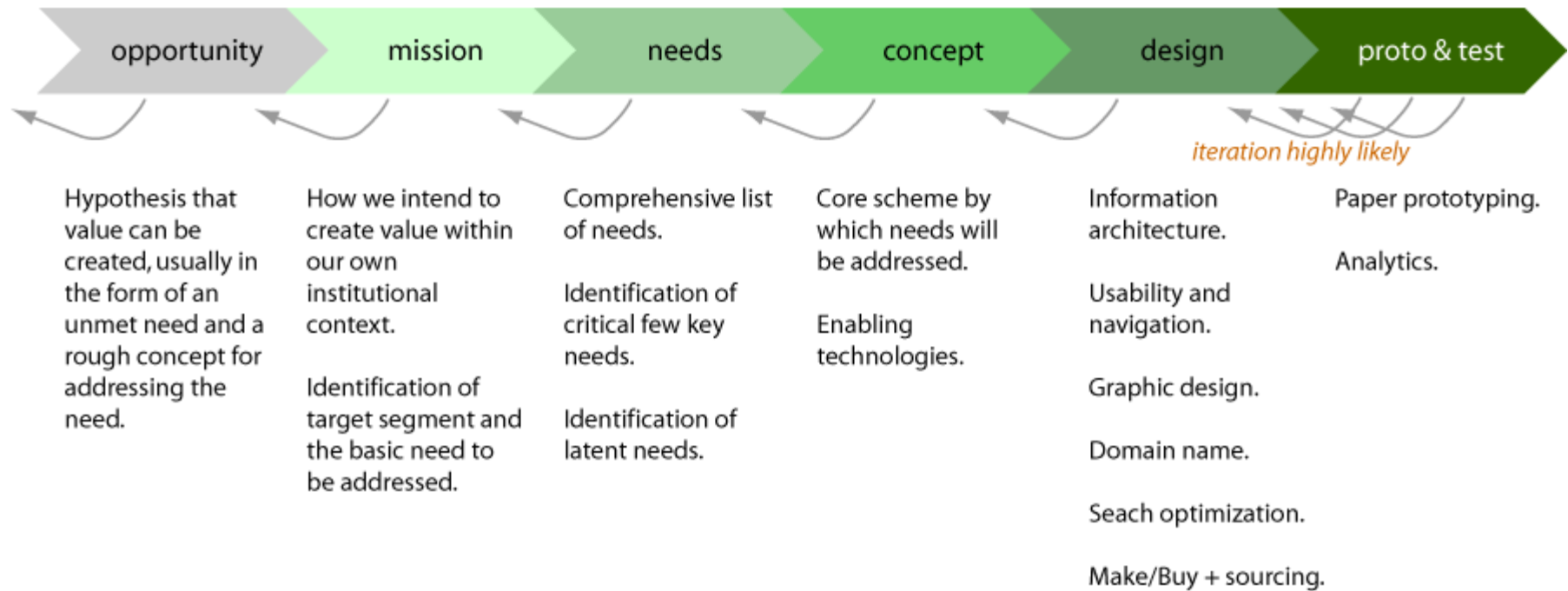




Source: Laura J. Kornish and Karl T. Ulrich. 2011. Opportunity Spaces in Innovation: Empirical Analysis of Large Samples of Ideas. *Management Science*. Vol. 57, No. 1.



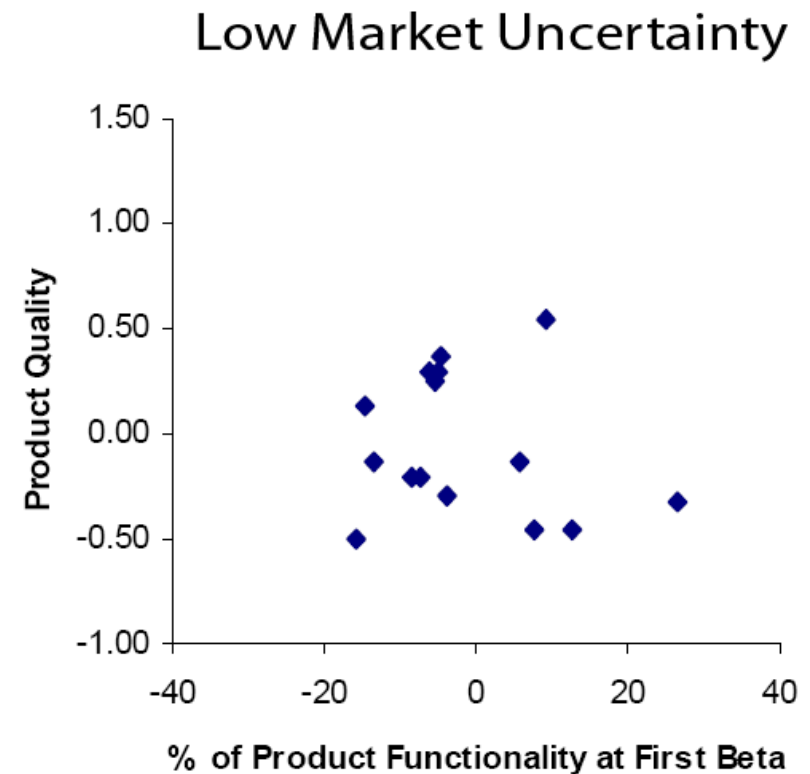
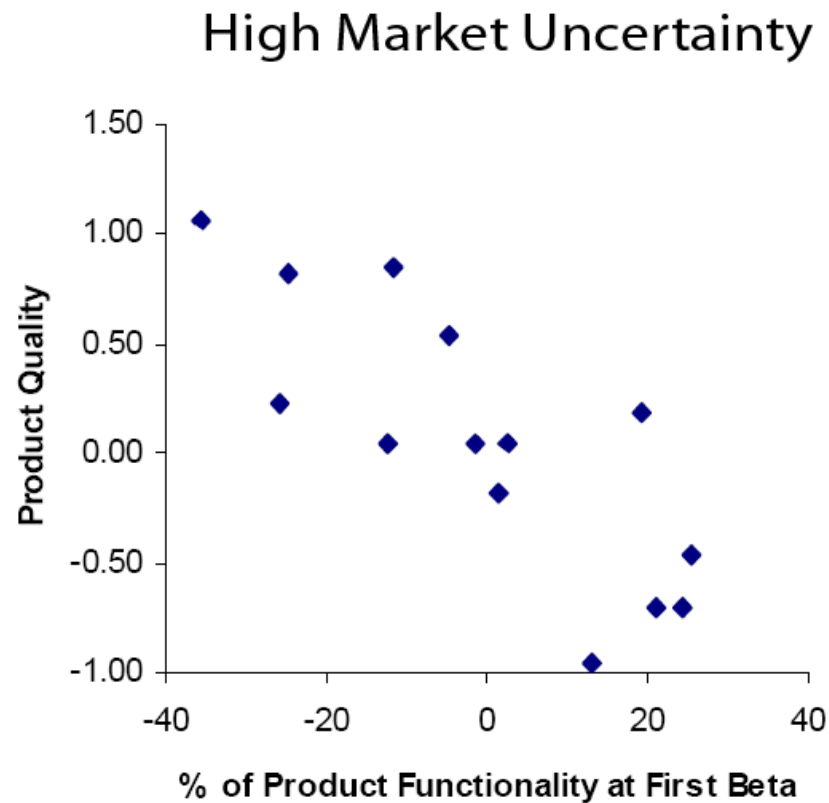
Development Process - Web-Based Products and Services



Deliverables

					www.site.com
opportunity pitch	mission statement	list of needs	concept pitch	proto pitch	prototype website
1 page	1 page	1 page	2 pages	2-4 pages	

Early Prototypes are Associated with High Product Quality (in High-Uncertainty Environments)



Plots created from data from research by Alan MacCormack.

Surowiecki's (*Wisdom of Crowds*) Principles applied to Multi-Voting (e.g., “sticker voting”)

- Large sample.
- Independent evaluations.
 - Use “shopping period” then simultaneous voting
- Mechanism for collecting and aggregating results.

More Principles

- Average # votes (e.g., stickers) per item should be 5 to 10.
- Top-level question/criterion clearly thought out and clearly articulated
- Best for narrowing dozens or hundreds of options down to a few options

Concept Development (Needs + Concept)

U B E R

LOG IN

MOVING PEOPLE

THE UBER APP CONNECTS YOU WITH A DRIVER AT THE TAP OF A BUTTON

SIGN UP FOR UBER





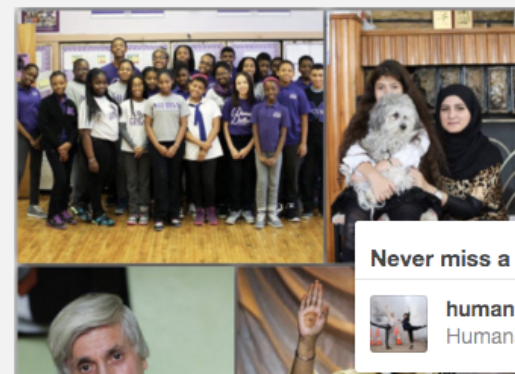
(2/4) "We didn't really have any struggles. We had all the newest things: color television, Atari, those big ass cellphones. My dad had a limousine service that drove us to school. And we always went to private Catholic schools. I'd come back wearing my uniform and all my friends would make fun of me. I even had a horse on Long Island named Apples. Each of my siblings had a horse. Mine liked apples so I named him fucking Apples. That was our life. But then one day my parents decided to go legit. I was seventeen or eighteen at the time. They sat us down one Saturday afternoon at the big glass table in the living room. You know how Caucasian people do Sunday dinner? No disrespect, but that was Saturday afternoon for us. They sat us down and told us they were stopping everything. And they did. No more drinking, no more drugging. They sold all the businesses. Both of them worked regular jobs for the next 25 years. My dad became a train driver and my mom became a drug counselor. They told us they didn't want us getting involved in drugs. But that was all we'd ever known."



(1/4) "My parents were big in the hustling game. It wasn't like it is now. Now it's a bunch of kids on the corner trying to get sneakers. In the early eighties it was a group of older dudes— just some local cats who got together and decided: 'This is how we're going to eat.' Nobody was coming to our house to buy a dime bag. Everyone who came over was buying weight. Those were the people who



"I identify as being queer. I also identify as being a social worker, a metal head, a goth, sort of a pagan, and maybe a witch. But I think that I most strongly identify as being a nerd. Nerds have the least amount of rules. For the most part, they don't care about any of that other stuff. They're just excited about the things that they're excited about and they're happy to share it with you."



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Kano Diagram – Four Types of Needs



Example Needs List

The music player...

plays music I like.

- * adapts to my preferences.
- * adapts to my mood.
- * learns from my actions.

keeps the music fresh.

- * introduces me to new music.
- * plays music in random sequence.

! let's me learn about the music.

- ! let's me know what other people think of the music.
- ! teaches me about the song, artist, label, and/or genre.

* lets me control the music.

- * allows me to specify a desired mood.
- * allows me to listen to specific songs.
- * allows me to listen to specific artists.
- * allows me to listen to specific genres.
- * lets me skip songs I don't want to listen to.
- * lets me designate music that should never be played.
- * lets me reduce frequency of play of a song.
- * lets me increase frequency of play of a song.
- * allows me to predetermine a sequence of songs.
- * lets me easily find and play music I have enjoyed previously.

! plays video content associated with music.

“latent” needs
(N ~ 1-3)

“critical few” needs (N ~ 5)

is available anywhere.

- provides audio via conventional speakers.
- provides audio via headphones.
- provides audio in car.
- can be used while exercising.
- integrates with my existing hardware and software.
- goes mobile without a tether.

accesses my entire music collection.

provides access to specific music forever.

maintains my privacy.

* is affordable.

- * is inexpensive to acquire.
- * is inexpensive to use.

* just works.

plays music at high fidelity.

lets me share music with others.

lets me learn about music from others.

plays voice/narrative.

- allows speed of play to be adjusted.
- lets me access voice content easily.

Notes:

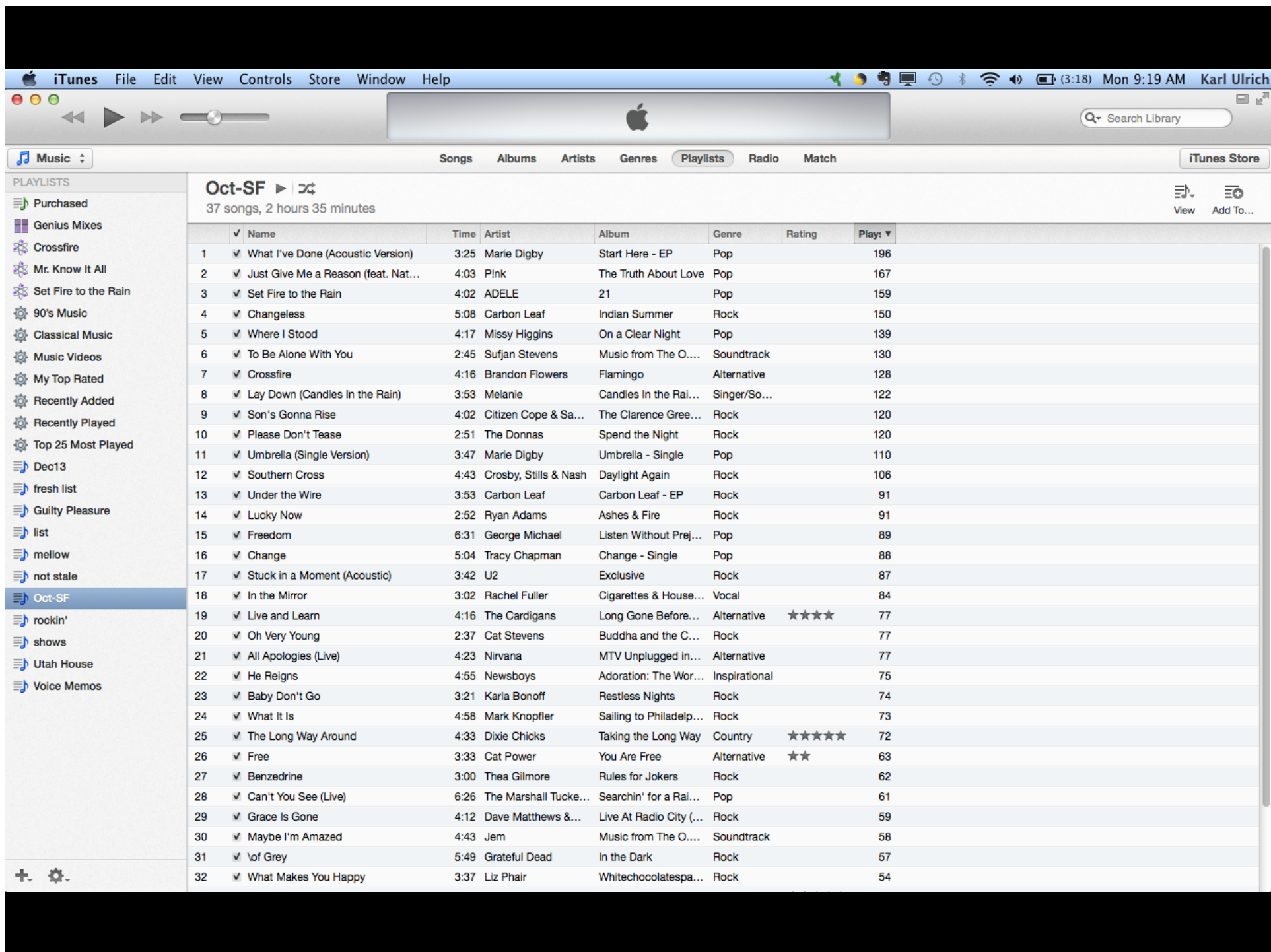
- usually 30-50 distinct needs.
- clustered according to similarity of need expressed.
- cluster headings called “primary needs”
- maintain original “voice of customer” as much as possible.

Detailed method:

K.T. Ulrich and S.D. Eppinger
Product Design and Development
6th Edition, Irwin/McGraw-Hill, 2016

Identifying Customer Needs

1. Gather raw data from customers.
 - Open-ended dialogue.
 - What issues do you consider when choosing/buying?
 - What products/services do you use now?
 - Show us how you use the product/service.
 - What do you like/dislike about existing product/service?
 - Observation of customer in the “use environment.”
2. Interpret the raw data in terms of customer needs.
 - Don't lose specificity; preserve voice where possible.
 - Think carefully about the underlying need being expressed.
3. Organize the needs into a hierarchy of primary, secondary, and (if necessary) tertiary needs.
4. Establish the relative importance of the needs.
 - The “critical few.”
 - “Latent” needs.





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Create and share playlists

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When Love Was
The Only Thing
by: Kim Fox
on: Return To Pl...



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Album

Song

Fans



Kim Fox



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Singer/songwriter/keyboardist Kim Fox updates the female singer/songwriter archetype of the early '70s (think Carole King and, especially, Laura Nyro) in much the same way as the indie-piano trio Suddenly, Tammy! -- whom she credits with inspiring her move from opera and classical music into pop -- and her former Bloomington, IN, neighbor, Lisa Germano. Her 1997 album

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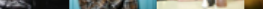
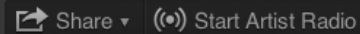
Adobe Illustrato...

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Getting Started



Top Hits

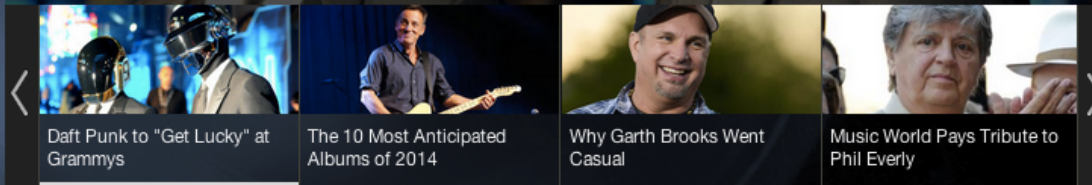
Babel (Deluxe Edition) (2012)



1235393025

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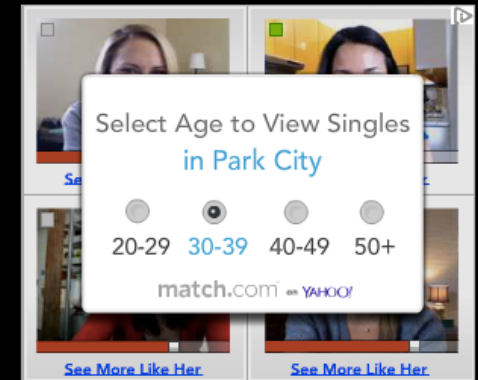


[All Music News](#) [Yahoo Originals](#) [Rolling Stone](#) [Video](#)

Georgian violinist Lisa Batiashvili, who performs Shostakovich's first violin concerto this week, has become a regular at the Philharmonic recently, having soloed with the orchestra each season since Alan Gilbert became music director

The Wall Street Journal

The former Smiths frontman will follow his successful "Autobiography" with a novel, saying he favors the written platform over the music industry.



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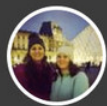
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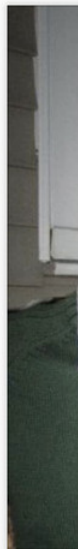
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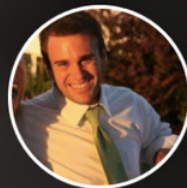
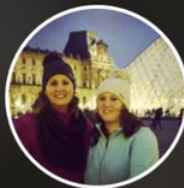
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It's a Match!

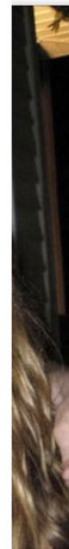
You and Brian have liked each other.



 Send Message

 Keep Playing

 Tell Your Friends



4

Edit

All Matches



 Search 1 Match



Brian

Matched on 03/17



Elements of the “Concept” for Web-Based Products and Services

- Core functionality (e.g., retail goods, provide credit scores, index information...)
- Platform (e.g., desktop, mobile, pure web vs. download)
- Delivery means (e.g., widget, rss feed, email, dedicated web page, app)
- Central use metaphor (e.g., search, radio station, desktop, newspaper, card deck)
- Key modes and features (e.g., “ratings mode” and “recommend mode”)
- Unique “hook” (e.g., “music genome” project)
- Key benefits (e.g., “no late fees”)
- Key features of business model (e.g., subscription, commission, advertising, referrals, fee for transaction)

Heuristics for Generating Concepts

- Decomposition based on functionality
 - What are the functional elements of the product/service (e.g., “create play list”)? How would you solve just this sub-problem?
- Decomposition based on user needs
 - Focus on just one need (one of critical few or one of latent needs). What would concept be that delivered just on that need? (e.g., “adapts to my tastes”)
- Decomposition based on process flow
 - What process does the user go through in experiencing the product or service? What are the different ways to deliver this experience. (e.g., find, learn more, buy).
- Analogous sites
 - “Pandora for cars”
 - “Kayak for recipes”
- Simplest possible solution
- Individual and team “brainstorming” sessions
- Numerical targets
- Mix and match elements
- Feedback on quick prototype/mock-up
- How would Google do it? How would Apple do it?