

Visualizing Your Customers

Separating Valuable Signal from a Sea of Noise

Hosts: Alex Brown
Christine Hegarty

scruminc. Who We Are

Scrum Inc. is the Agile leadership company of Dr. Jeff Sutherland, co-creator of Scrum. We are based in Cambridge, MA.

We maintain the Scrum framework by:

- Capturing and codifying evolving best practices,
- Conducting original research on organizational behavior
- Adapting the methodology to an ever-expanding set of industries, processes and business challenges



We also help companies achieve the full benefits of Scrum through our full suite of support services:

- Training (Scrum Master, Product Owner, Agile Leadership, online courses, etc.)
- Consulting (linking Scrum and business strategy, customizing Scrum)
- Coaching (hands-on support to Scrum teams)
- Publishing and new content development

We run our services company using Scrum as the primary management framework, making us a living laboratory on the cutting edge of “Enterprise Scrum”

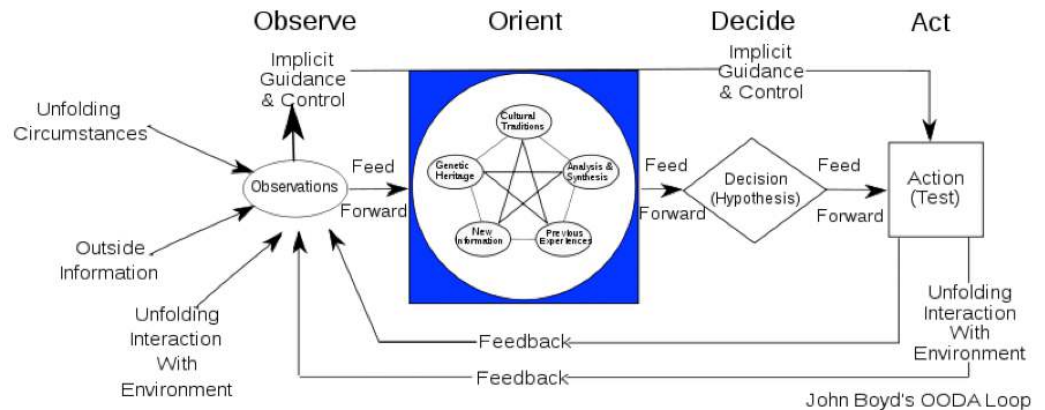
Find out more at www.scruminc.com.

Agenda

- Highlight both the problem and opportunity of working with enormous amounts of available customer data
- Introduce two visualization techniques that help frame customer preferences
 - Customer Clouds and Segmentation
 - Customer Personas
- Show how these techniques can help the Product Owner and teams make better backlog prioritization decisions

The Problem: Making Customer Behavior Visible

The Product Owner is supposed to execute the OODA Loop (Observe, Orient, Decide, and Act)



But how do you “orient” for mass market products?

- Each customer conversation represents hundreds to thousands of actual customers

What do you do if feedback from two customers doesn't agree?

- How important or leveraged is one piece of feedback vs. another?

The Opportunity: Lots of Great New Data

facebook®



Customers can easily:

- Self-identify with your product
- Tell you what features they want
- Indicate where they are located
- Reveal their usage paths and patterns

The cost of acquiring customer data has plummeted

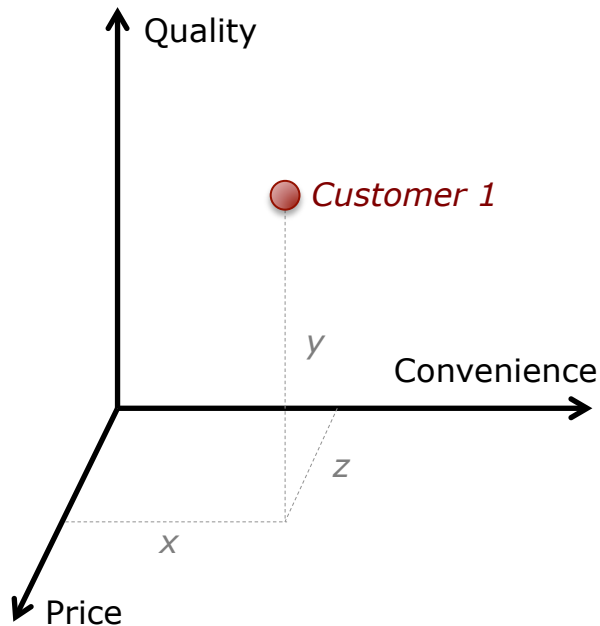
The proliferation of social media, mobile technology, and internet analytics are creating enormous amounts of data



BUT...to use it effectively you need to understand who is saying what and where they fit in the market

Introducing Behavioral Graphs

A Mental Model of Customer Product Preferences



Represents the theoretical “ideal” combination of product attributes for a particular customer

- Rough approximation can be determined from survey data, interviews, or “Conjoint” analysis

Customer defined by behaviors and preferences, not demographics

Many different potential product attribute dimensions. Iterative inspect and adapt cycles will determine which ones are important

Assumption that customers will buy the product that is closest to their ideal

Used to define, test, and refine hypotheses about what customers want

- Visualizes “Lean Startup” approach to validated learning

Conjoint Analysis: One Way to Identify a Customer's Preference Position

- Similar to A/B testing for a web site, a conjoint survey asks customers to decide between two products with different parameterized attributes
- Analyzing the results of several such tradeoffs shows how the customer weights different product attributes
 - Categorical regression
 - Linear Programming
 - MaxDiff
- In the agile world, subsequent iterations of a product create a natural conjoint analysis set

Please select your preferred product
(select only one each row)



20" screen
60 Hz, 400i picture
30lbs
\$200



40" screen
120Hz, 1080p picture
25lbs
\$2,000



40" screen
120Hz, 1080p picture
25lbs
\$2,000

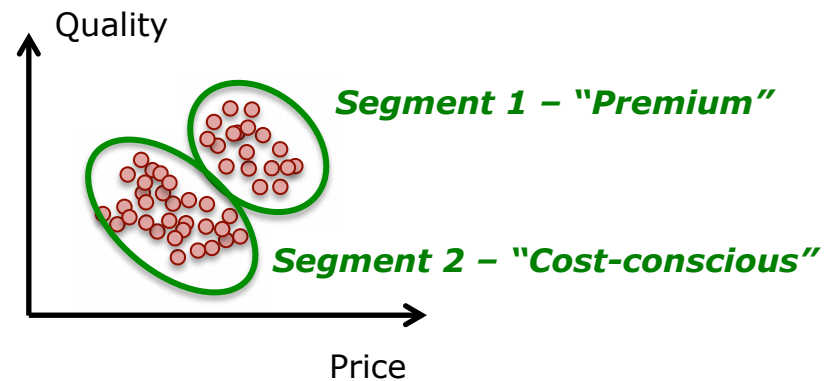
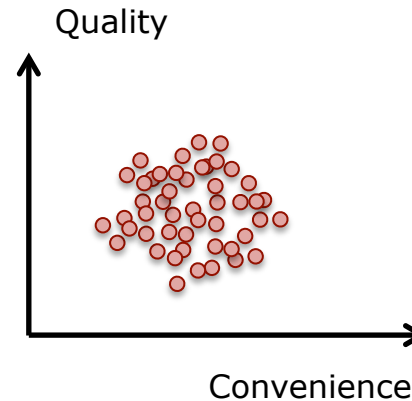
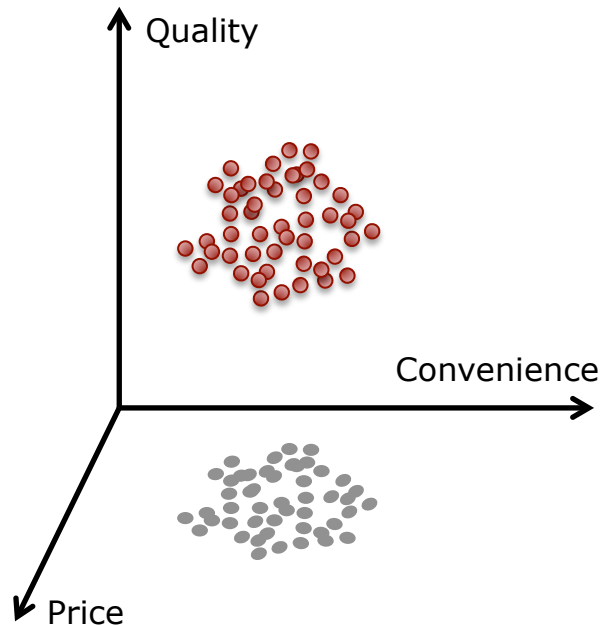


50" screen
60 Hz, 1080p picture
50lbs
\$1,500

Customer Clouds and Segmentation

Behavior graphs can represent thousands/millions of individual customers in a "customer cloud"

Looking carefully at pairs of dimensions, possible to identify meaningful customer segments



Distilling Segments to a Point Estimate



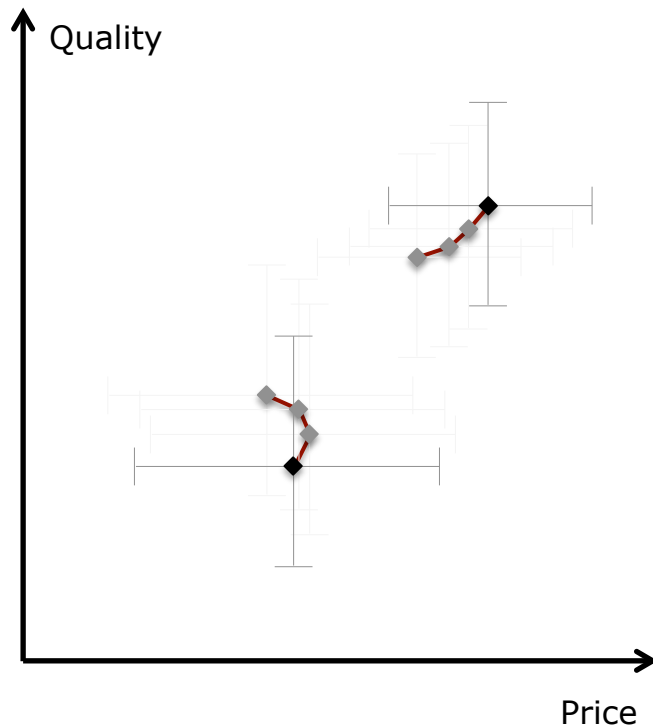
Thousands of individual customer data points are difficult to work with!!

Often much easier to distill clouds to a single point estimate located at the “centroid” of the segment

- Represents target at the center of the customer cloud that you are aiming for

Range or standard deviation data can help drive statistical analysis on customer behavior

Segment Evolution: Tracking Preference Shifts Over Time



Consumer behavior is organic...it evolves over time

Product designers ignore consumer preference shifts at their peril

Cloud centroids trace out "tracks" over time

- Refresh market data in regular iterations to follow tracks

Customer Personas Make the Data “Real”

It is hard to design product for a dot on a chart

Personas are archetypes...
not real people

- Describes the “centroid” of a customer segment

Provides context for a user and what he/she wishes to accomplish

- Team can design for just one person
- Personas often end feature debates

Need a persona for each targeted customer segment and/or product

Scrum Inc. Customer Personas Bill Newcomer



Bill Newcomer

Bill is the manager of an R&D group at a major packaged foods company. His team has been struggling with the development of a new granola bar, and the project has fallen behind schedule and started running over-budget. Pressure and scrutiny from upper management is increasing, making life very uncomfortable for Bill.

One of Bill’s friends in the IT department suggested that he look into Scrum as a potential solution for his problem. The friend said that it really helped them out of a pickle several years ago, but struggled to explain what Scrum is or why it helped. If anything, the results sounded too good to be true to Bill. When Bill asked his friend if Scrum could work outside of software, his friend replied “I guess so?”

Now Bill wants to find out more about Scrum and how it could be applied to HIS problem. He is curious, but also cautious of what he fears is just the latest management “fad.”

Key Issues

- Knows next to nothing about Scrum
- Is experiencing real pain in his current role, so willing to try something different
- Curious, but worried Scrum is just a “fad” – wants to understand the “science” behind it
- Also not sure that Scrum will work in his company, since it is a “software thing”
- Even if Scrum works, not sure how to even begin a transition to Scrum while his team is so under the gun

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Fleshing out Personas for Greater Context

Determine the information relevant to understanding customers. Think:

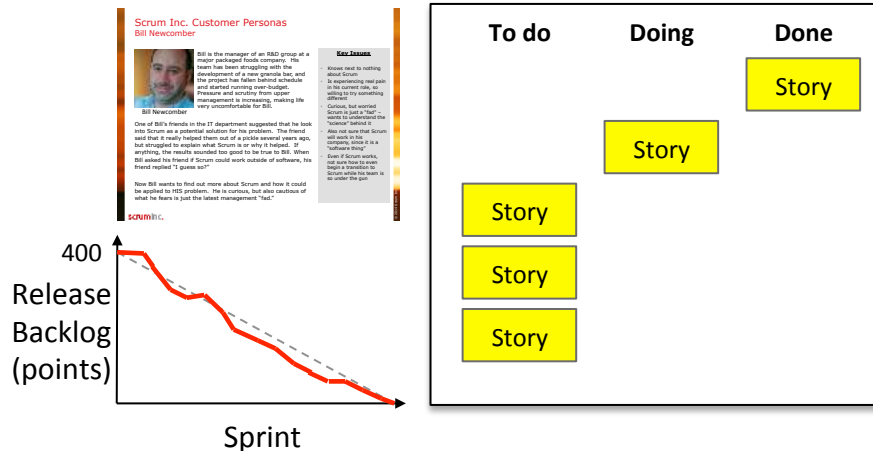
- Who are they?
- What is their typical role?
- How do they/might they use the product?
- How would you recognize them if you saw them on the street? (demographics)
- How do they make decisions about purchases?



Avoid persona pitfalls:

- Beware of extraneous detail!
- Base personas on data from customers don't just rely on "creative writing"
- Use the persona throughout the design process, not just at the beginning
- Continue to evolve personas based on what you learn

How to Use Persona's in the Team Room



Keep the persona visible

- Often posted next to information radiator in team space

Refer to personas in team discussions

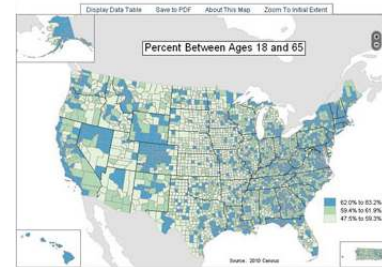
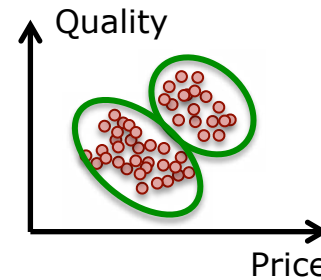
- "I think David would appreciate..."

Use them to settle disagreements about what to build or how to design the interface



Parting Thought: Quantitative Customer Modeling can Inform Business Value Estimation

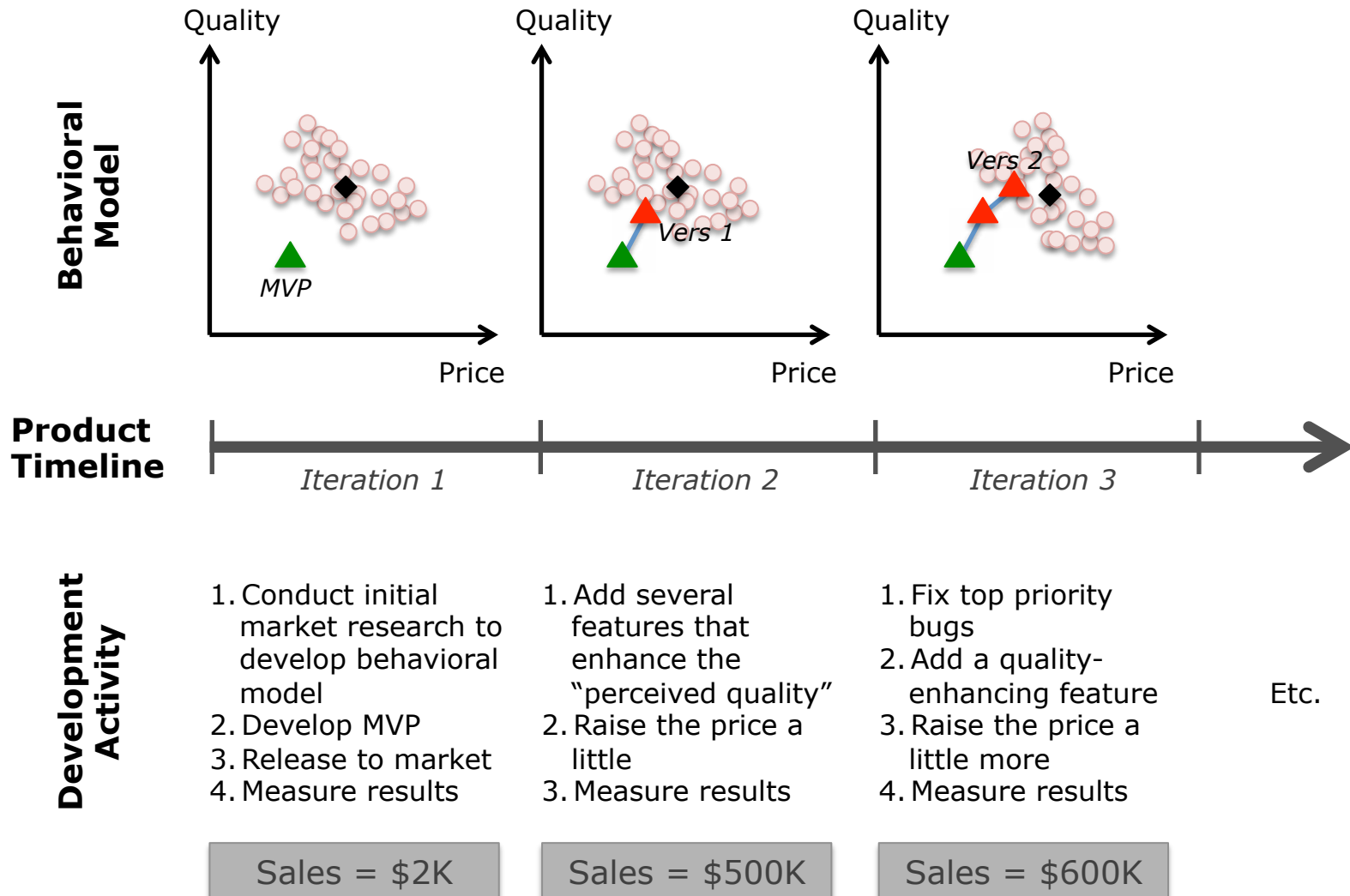
- 1 Identify the natural segmentation of your customers
- 2 Determine the common demographic profile of your target "Persona"
 - Age
 - Income
 - Gender
- 3 Leverage publicly-available demographic data to determine how big a segment is, and where it is located
- 4 Use assumptions to build value hypotheses
 - Segment size
 - Penetration rate
 - Average purchase
- 5 Refine these hypotheses based on early feedback and observations



$$\text{Revenue} = 30\text{M ppl} \times 10\% \text{ pen} \times \$2.50\text{pp}$$



Using These Techniques to Execute “Customer Driven Design” (AKA “Lean Startup”)



Illustrative Example: Opening a Restaurant

Let's say we are opening the most analytically over-supported restaurant in history...naturally somewhere in the greater Boston area

Please select your preferred option from each pair of choices

The co-founders can't agree on anything: location, format, cuisine...

But they remember the lessons of this class, and so start by setting up a Facebook page to gather customer data and engaging in a discussion with their potential customers.

Responding customers were asked to complete a conjoint analysis



"Antonio's"

Large portion sizes, good value for money, Table cloth and smartly dressed wait staff



"Reuben's"

High quality artisanal ingredients in a relaxed and friendly atmosphere



"Lou's Place"

Like your own kitchen, except you don't need to clean! If you don't leave full, we haven't done our job

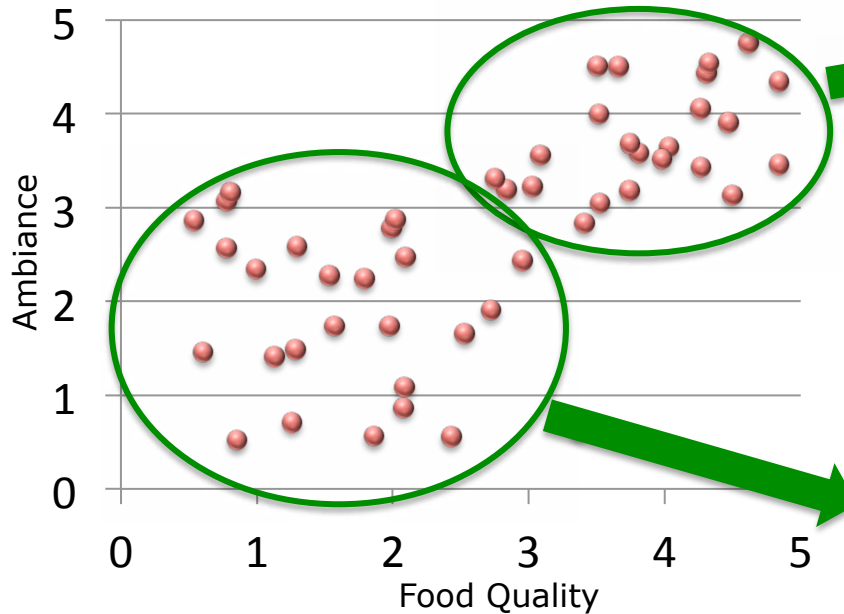


"Chez Scrum"

The finest French cuisine served in a historic townhouse by Cordon-Bleu educated chefs

Convert your Customer Data into Actionable Vision of your Customer

Customer Responses



"Kristen"

- 30-40 year old female
- Career-oriented
- Self-proclaimed "Foodie"
- Enjoys fine dining as a way to relax
- Concerned about using locally-sourced ingredients
- Not afraid to send food back that doesn't meet her expectations



"Patrick"

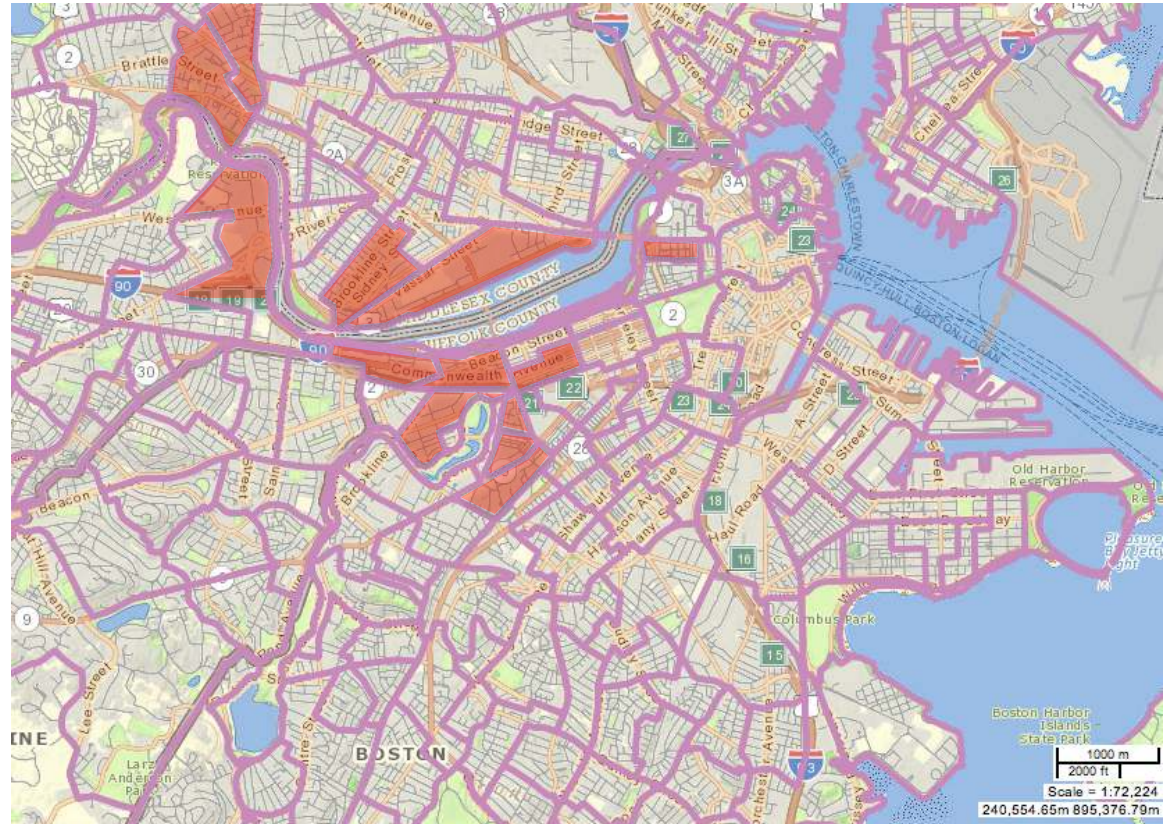
- 18-24 year old male
- Student at the local college
- Enjoys eating food with friends
- Worries more about feeling "full" than exactly what he is eating
- Avid fan of "dollar menus"

Find your Customers


With a clear picture of our potential segments, we turn to US census data...

There are 75,000 residents of Boston that match the "Kristen" profile, but 200,000 "Patricks"

Digging deeper into public geospatial data reveals where these customers live, and thus potential locations for our restaurant



Source: MassGIS and US Census 2010 Tiger data

 Census Tracts with >25% of residents in target demographic

Conclusion

- Traditional market visualization tools can bring the Product Owner greater analytical power
 - Put some analytical “muscle” behind designing for the end user
- These tools don’t have to be slow and cumbersome... they can be applied in an “agile” way
 - Lightweight applications that emphasize repeated trials over comprehensive one-time results
 - Help companies “inspect and adapt” more intelligently
- Particularly in tech-enabled businesses, they allow you to leverage the explosion in useful customer data

Questions?



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