

Methods for Scanning the Environment

Professor Davis

Analysis of the Environment

Identify the stakeholders

- Who uses what you are creating?
- Why do they use it?
- What about your creation is usable? What need(s) does it fulfill?
- What is the context surrounding the use, and users, of the creation?

Methods

- Prearranged, open-ended interview and observation
 - Meet with stakeholders
 - Watch what they do
 - Ask questions
 - *The key is to select typical and exceptional types of stakeholders (watch both!)*
- Noninvasive observation
 - i.e., People-watching
 - *Just make sure you are watching a good cross-section of stakeholders!*
- Intercept
 - Interrupt stakeholders at random while they are using the product

Pain points vs. tension points

- Many suggest that one should look for pain points to fix
 - This is actually a good idea
 - Cf., A. Slywotzky, *Demand*
- “Tension points” (Williams) may be even better
 - These are places where things work, but *could work better*
 - Are these really points of tension?

Indicators of where to innovate

- Workarounds
 - Places where people are jerry-rigging things
 - E.g., using safety pins on clothes
 - Using household objects for atypical uses
- Values
 - What do people really want?
 - Where is the market over-delivering (especially when it's overpriced!)?
 - Wikipedia vs. Britannica – do laypeople really care so much about accuracy that they will pay the differential?
 - Experts won't use either source!

Indicators of where to innovate

- Inertia
 - People tend to go with the flow, and won't change without an incredible incentive
 - What would make it easy to change?
 - E.g., internet browsers importing features from others
- Wants vs. Shoulds
 - Combine ways for people to do what they *should* do with ways for them to do what they want to do

Qualitative analysis

- Review ALL of the observations, ideas, findings, etc.
- Make a second pass and start looking for patterns
- Go through everything again and see what fits to patterns and what doesn't
 - Do the things that don't fit to any pattern make a pattern of their own?
- Then start analyzing based on patterns, and do further analyses based on exceptions to patterns
 - Start asking how/why if you see anything interesting, odd, unusual, etc.
 - Consider whether there are patterns to the patterns (get meta!)
- Pay attention to everything – words, phrasings, subtleties, as they can tell you a lot

Integrating disruptive hypotheses and observations

- Look for gaps that are indicated by hypotheses and then revealed by patterns
 - Hypothesis: What if people didn't have to X?
 - Observation: Instead of doing X, some people try to do Y, and fail at it
 - Synthesis: How can we enable people to do Y instead of X? Why do people fail at Y? How does Y serve the purpose originally accomplished by X? Is there another way to accomplish X without doing X or Y? What are the fundamental needs being met?

Maslow's Hierarchy of needs



More on Indicators

- Workarounds – what is the underlying problem that they are trying to solve?
- Values – what do people really want?
- Inertia – what are people's habits? How are they made/broken? Do people like/want those habits? How can people make what they want/need to do a habit?
- Should vs Wants – how can either be turned into the other?

Impedances to creative efforts and how to get around them

Direction/focus

- Often too many things to look at
 - Too many directions in which to focus
 - Choice paralysis
- So, just pick something and go with it
 - The perfect is the enemy of the good
 - Just give it 5 minutes
- Forced analogy
 - Synectics
 - Mashups

Isolation

- Things are seen in isolation and not in the greater context (e.g., with other products, in the daily lives of users, etc.)
 - Need to see things in the context of the ecosystem
 - E.g., the i-system from Apple
- Forced mashups help here, too
 - Try putting things together at random a few at a time
 - Combine features, uses, purposes, etc.
- Don't judge immediately
 - Save judgment for a different phase
 - Cf., Osborn

Ideas go nowhere

- Often, there is no way to capture or implement ideas
 - So why do companies hire consultants when they have idea machines working for them (a.k.a., employees)?
- When an idea comes, try building it into a pitch
 - Give it a name, and integrate it into the company's system
 - Show fit, but differentiate it (see below)
 - Show how stakeholders will interact with the creation
 - Describe how and why the creation is different from other things out there

Additional Techniques

- Analogies
 - How is Thing A like Thing B?
- TRIZ
 - Mix and match of lists containing relevant issues (mostly from engineering)
- Brainstorming
 - These are not necessarily the decision-makers – they are ideators
 - Operationalize outcomes – what do you *really* want to accomplish?
- Crazy Parameters
 - E.g., has to be usable without hands
- Nothing is irrelevant
 - “Lucky” people are open to more opportunities
 - Need to look around and observe – never be bored

CPS Techniques

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Benchmarking

- Comparing against the best in the business
- Aggregate the best in the business to create a “supercompetitor”
- What are the problems with benchmarking?

Problems with Benchmarking

- Defining “best”
- Finding similar companies to compare against
 - United’s Ted experiment
- Fails to consider context of company

Camelot

- The cute-little-ideal-world that may or may not exist
- How realistic should(n't) you be?
 - E.g., any tech, money, people, resource constraints?
 - Should you care?

Inverse Brainstorming

- Assume there is a problem with the situation
- What is it? What could it be?
- If it ain't broke, don't fix it??

What Do We Know?

- Great technique for when you are totally lost
- Just start listing details, stream-of-consciousness style
- Don't stop until you have gone for 5 minutes without adding something *three times*.
- Works well in combination with assumption-reversal (because it lists your assumptions – just reverse them!) and 5-Whys (find something on the list and go for 5 rounds of “Why?”)
- Can be time-consuming

Free Association

- Therapeutic technique, as well
- Go wild!
- Set a time limit, and then go through the list and look for patterns or other things that jump out
- Free-associate based on attributes of problems and/or relevant objects
- Regular association (constrained by theme) – don't bother

Fresh Eye

- Gives an outside perspective
- Valuable because they don't take as much for granted
- Cautions
 - Should we hire a consultant?
 - Is a fresh perspective too naïve?

Alternative Uses

- Actual creativity test
- Find pieces/attributes and find alternate uses for them
- Can combine with free association and forced analogies (to combine uses or other items mentioned)

Osborn Verbal Checklist

- Put to other uses
- Adapt
- Modify
- Magnify
- “Minify”
- Substitute
- Rearrange
- Reverse
- Combine

Bad Ideas

- Computer programs
 - Expensive
 - No more effective than cheap alternatives
- Many of the proprietary techniques
 - Cute, but they aren't scientists
 - No more effective than known, established alternatives
- Excursion Technique – too hard
- Overly-structured methods – sometimes OK

Find Your Own Style/Solution

- Different problems lend themselves to different solution techniques
- The ones here are more generic
- Find your own style
- Reverse-engineer techniques
- Your stakeholders didn't read the book!

Discussion

Group techniques: good
idea, or bad idea?