Non-Linear Innovation

- What is it?
- Why do we need it?
- How do we use it?
- Examples
- Some thoughts on implementation
What is it?

- Innovative ideas, products, applications, and services that give the customer what they didn’t know they wanted
  - People who are not buying today are as important, and in some cases more so, than those who are buyers in a given segment
    - What would it take to get them to pull out their wallet?

- Both structured and unstructured customer data are important
  - Structured – direct questions & numerically scored surveys
  - Unstructured – open ended questions like “How do you feel about…..?”

“The best way to predict the future is to invent it” – Alan Kay
Why do we need it?

“The customer is the rearview mirror – you can’t lead the way in the marketplace if you do exactly what the customer thinks they want next”

- Ford, circa 1993*

* - At the time, Ford had 7 of the top 12 best selling cars & trucks in the US, the bestselling two car lines in Europe, was the wealthiest car company in the world with ~$24B in cash reserves, and many pundits thought they would pass GM as the world’s largest car company by the end of the decade.
How do we use it?

- Most human beings are conditioned to think linearly
  - Pick up a USA Today and look for examples of straight line projections
  - Even non-linear thinkers have a hard time communicating what they want

- In automotive terms, if 6 speed transmissions were the benchmark last year, 7 speeds will be the benchmark next year, and so on...
How do we use it?

- Breakthrough product development is inherently non-linear
- Great products, the smash hits in the marketplace, give the customer what they didn’t know they wanted
- How do you figure out what it is that the customer wants that they don’t know they want…?
- Innovators and Early Adopters are a good place to start asking questions, they are usually non-linear thinkers.
Technology Innovation Lifecycle

Technology Innovation Lifecycle

- Linear thinking leads to evolutionary product development
  - At its best in the Early & Late Majority stages of the product life cycle
- Non-linear thinking can lead to dramatic commercial failures, like the Pontiac Aztek, the Segway, Lincoln Blackwood, Apple Newton, etc
  - This is why big companies don’t like it
- Non-linear thinking also yields the runaway smash hits, and sometimes it even finds its way into Big Company products (but they are usually either near death or just recently recovered from a near death experience)
Examples

The tyranny of ever increasing performance

- Go back to 1985
- What were the key performance metrics for PC’s?
  - Memory size & processor speed (Moore’s Law)
  - Hard disk space
  - Lower cost (following Moore’s Law)
- Who were the customers?
  - Businesses
  - Academia
  - Government
Examples

What product was about to change everything?
- The Apple/Macintosh series (i.e., a graphical user interface)
- Mac’s were generally slower and had less HD for a given price point

The Mac was different, and Apple embraced that!

http://www.youtube.com/watch?v=HhsWzJo2sN4
Examples

2006: The tyranny of ever increasing performance

- Since ~1980, what had been the key performance metric for home video game consoles?
  - Improved graphics performance
  - Better audio

- Who were the customers?
  - “Gamers” – males under age 30
  - Demographic had been progressively narrowing for 30 years

- What was Sony’s PS3 all about?
  - High definition pictures
  - Blu-ray (HD) DVD player
Video gaming consoles, *cont’d*

**Who blew the market wide open?**
- Nintendo graphics are “A piece of shit”
  - Electronic Arts game developer and hard core gamer Chris Hecker
- Nintendo Wii peaked at ~50% of the market

**Why?**
- The customer didn’t know how to say it – they just wanted to have fun with the game again
- Nintendo listened carefully, then figured out a way
  - for new technology (motion sensing remotes) to put the fun back in the games again, AND
  - to broaden the gaming potential market by making it simpler and more intuitive to play
- Nintendo’s Senior Marketing Director used his “wife-o-meter” to judge how well the game might fare in the broader market
What was the competitive response?

- Playstation Move
- Xbox Kinect
Examples

- The tyranny of ever increasing performance
  - Go back to 1900-1908
  - Describe the global automobile market
    - Cars were incredibly expensive
    - No automaker built more than a few thousand cars per year
    - There were hundreds of boutique brands
    - Cars all but required a dedicated mechanic
  - What were the key performance metrics?
    - Top speed (power)
    - Luxury
  - Who were the customers?
    - Cars were status symbols, only owned by the very rich
Examples

What was about to happen?

• Henry Ford was about to show the world that performance and luxury just didn’t matter when the mass market wanted simple, rugged and cheap

• Ford would be the world’s best selling brand for 20 years

• Virtually all of Ford’s original competitors were gone by the time GM passed Ford with “A car for every purse and purpose” – another example of listening to the Voice of the Customer
Examples

What about changing feature sets on existing products?

Take a look at the small SUV market in 1989
  • Jeep Cherokee, S-Blazer, Bronco II, Nissan Pathfinder
    are the major players

Key performance metrics
  • More towing capacity
  • More power
  • More cargo capacity
  • Off-road capability

Who are the customers?
  • Mostly young males with an affinity for the outdoors
Examples

What’s about to happen?

• Ford will set off the SUV craze as we know it with the 1991 Explorer
  – Less off-road capability
    (lowered, reduced approach/departure angles)
  – More cargo space than Bronco II,
    or anything else in segment for that matter
  – Practical, upscale-appearing interior feature set
    that appealed to both men and women
  – Styling that was rugged, but not as outwardly so as competitors

• People who didn’t buy Fords, especially Ford trucks, bought Ford Explorers

• Common garage mate was an expensive import car
Examples

• Designing the product that no one knows they want
  • Go back to 1994
    – SUV craze was still in the Early Majority stage
    – Minivan was a highly contested segment
    – Taurus was #1 selling car in the US
  • About this time, a US automaker initiated a program known by the catchy name of “Luxury Segment Demonstration Vehicle”, or LSDV
Examples

Underlying concepts (1994)

- Population is aging
  - Won’t like the climb up to SUV seats
  - Won’t like the drop down to conventional car seats
- Fuel economy might become an issue at some point in the future
- Minivan craze already showing signs of entering Late Majority stage
- How do customers REALLY use a SUV, and which of those traits will endure?

What did the LSDV become?
Examples

- Crossover SUVs
  - Easier to get into (aging population)
  - Smoother ride, more car-like
  - Better fuel economy
  - Limited offroad capability
Conclusions

What did Apple, Nintendo and Ford all do?

• Traded performance (as defined by the conventional wisdom of the time) for some other trait that the non-customer wanted
• Remember, one of the competitors for any customer is always that customer keeping their wallet shut
• Linear thinking would have just said “More performance as defined”
• Existing customers bought more units, and new customers bought for the first time

Mr. Jobs’s own research and intuition, not focus groups, were his guide. When asked what market research went into the iPad, Mr. Jobs replied:

“None. It’s not the consumers’ job to know what they want.”

NY Times, 10/06/2011