Innovation Lessons from Apple – Part 1

Finding Market Gaps

Apple has been hitting home runs since the 2001 release of the iPod, then iTunes Store, then iPhone, then the App Store. How do they do it? One place to look is in their level of investment in R&D… are they outspending others? As it turns out, Apple's R&D expense as a ratio of gross profit is only 10%, compared to 12% for HP, 15% for Oracle, 17% for Microsoft, and 21% for Google. So… HOW DO THEY DO IT?! This article is the 1st of 3 parts to discuss three key activities Apple does well to create innovative products.

Some Apple History

The iPod was introduced into an existing MP3-player market that was split between small, low capacity players (32MB for ~$200) and large, expensive high capacity players (6GB for >$500). In addition, most were complex and tedious to load and use, especially for a large library of songs. Apple was able to leverage timing in an improvement in disk technology to a smaller formfactor, allowing them to be first to market with the new size/capacity mixture of 5GB in a 32MB footprint for $399. They also reduced complexity of the UI and made it easier to load songs using the existing MAC iTunes application. Within about 2 years, they sold 1M iPods and became the dominant market player.

The iTunes Store provided almost no different functionality than already existed in the marketplace. Prior to launching the store, Apple even had a partnership with MusicMatch for Windows users to purchase songs online. The problem was not the technical solution, but rather the business model. The frustration of users was both the limited selection and the limited use rights on the music and pricing model that was being dictated by the record companies. For example, the existing Pressplay service allowed only 10 single track downloads a month to burn to CD, with only 2 allowed per artist, and cost $15/month. Steve Jobs personally negotiated with the multiple record companies and was successful at creating a new paradigm of offering a large music library with unlimited single track downloads for 99 cents each that had unlimited play rights on the iPod and iTunes. It took only 5 days to sell the first 1M songs.

The iPhone entered an existing smartphone market that was dominated by Nokia and Blackberry. Apple saw an opportunity to leverage its iPod music capability into the mobile phones, although its first attempt with Motorola, the ROKR, was a failure. Apple assessed that the overall user experience of the phones, including the browsing capabilities, made them frustrating to use. They again jumped an upcoming technology, the touchscreen, as the cornerstone of the device and leveraged their own OS and full HTML browser in the device. It took 74 days to sell the first 1M iPhones.

The App Store addressed the frustration of users for limited software expandability of both their smartphones and the iPod. It also addressed the frustration developers had in dealing with mobile operators who historically wanted to control the content. In addition, Apple gave the developers a fair profit with 70% revenue share. By opening up the store to 3rd party application developers who could offer their products for free or for pay (just as was already available for the PC from thousands of sites on the wired internet), Apple spurred an industry frenzy. With 500 available applications for both the iPhone and iPod Touch, there were 10M downloads the first weekend. Within 9 months, there were 35,000 apps and 1 BILLION downloads.

Innovation Activity #1 - Finding Market Gaps

Finding market gaps is the 1st activity we'll discuss that Apple has been doing exceedingly well. A market gap is an opportunity in a market where no supplier provides a product or service that buyers need (or want). This does not mean just the absence of any competition, but also the unavailability of adequate solutions. There may be solutions offered by competitors, but they are not cutting the mustard for buyers and users, leaving a gap open to a savvier offering.

Apple did not have to create any of its markets or even new technology. Rather, they just had to exploit existing market gaps. They did this by understanding the existing markets, the frustrations of customers and the causes of their pain and determined what would be required to address them. This seems pretty rational and exactly what everyone thinks they themselves are doing, yet Apple came to different conclusions.

What Apple has demonstrated is the ability to isolate the FEW true attributes of the solution that drive the core value proposition for the customer. For the iPod, it was the ability to carry around your entire music collection in a size factor proven to be acceptable for portable devices – namely, that it fit in your pocket (famously established 5 years earlier by the Palm Pilot) and at a reasonable price point. Thus, their launch slogan of "1,000 songs in your pocket" was perfect.

For the iTunes Store, the value prop was a large (and growing) selection plus the ability to download single track songs at a reasonable price and own them forever, just as had already been the norm by the highly popular (and free, though illegal) Napster file sharing service. For the iPhone, besides combining multiple devices into a single one, Apple provided a quantum leap in user experience, both for using the device and for browsing the web. And for the App Store, it was the simple ability for end users to expand the functionality of their device and for developers to have a platform and strong incentive to develop apps.

Note that in every case, what the customer really wanted was completely logical and predictable, YET NO OTHER COMPANY WAS DELIVERING THE DESIRED SOLUTION, and thus the market gaps were identified. In addition, no technology was required to be invented by Apple. They identified improvements in existing technology that enabled a good-enough, but significantly differentiated solutions.

So, does Apple have the market cornered on this prescient ability to predict key value drivers, or is this something you can do for your products? One little-used technique is to employ **Buyer Personas**. Whereas the more common User Persona provides a description of a user of a product, the Buyer Persona describe the person paying for the product, and thus the focus is on value, not on use. For consumer products, the Buyer and the User are often the same person, however from the standpoint of isolating the core reason for purchasing, it's useful to think of them as separate.

Buyer Personas originated to help marketing and sales teams figure out how to communicate the proper message to the different target buyers, but they can be much more powerful if used to figure out the core value proposition of the product from day 1. In this respect, this initial view of them can be more focused on the problems they experience and then expanded later to include messaging and channel criteria.

Like a User Persona, the Buyer Persona provides a composite of typical buyers of the product including the goals, concerns, preferences and decision process. The demographics and general activities of the buyer are not the primary objective. The most important insight about a Buyer Persona is the answer to this question -- what prevents the buyer from realizing their goals? Is an appropriate solution not available? Is competition too expensive, too complex, or inadequate in some way? Is there no technology solution at all? Ultimately, you want to close the gap they are experiencing.

Let's try an example to illustrate. Consider this hypothetical target Buyer Persona for a music player, circa 2000.

Buyer Persona:	Matt - Young Digital Music Enthusiast
Background:	Matt is 20 years old and a college student. He's a Mac user and spends a great deal of time using it for school work and internet browsing. He also uses it as his entertainment system. Matt is really into music, especially new alternative styles, and has hundreds of MP3 files that he's downloaded using online file sharing systems, like Napster. He always has music playing using QuickTime and external speakers. He's also able to burn CD's that he can take with him in his portable CD player to listen wherever he goes.
Goals/Frustrations:	One of Matt's biggest frustrations is the need to burn CD's every time he has new music or wants to try a different mix in his portable CD player. He now has about 100 CD's he's constantly juggling and carrying around in a holder and never seems to have the one he's in the mood for listening to. He's seen ads for MP3 music players and notes that the smaller, cheaper ones (~$200) only hold about 1 CD worth of music whereas the bigger, more expensive ones (>$500) can hold hundreds of MP3s. <u>He can't see the smaller units solving his problem though he likes the size and knows his parents will balk at the price of a more expensive unit.</u>

Additionally you need to understand how important it is that the gap is filled for the buyer. Is it mission critical or just a nice to have? Is there a concrete ROI metric for the buyer (for enterprise) or a high emotional or social need satisfied (for consumer)? Is there demonstrated demand in some form? If you're considering entering an existing market, demand for a product may have already been demonstrated. If you're considering creating a new or niche market, this may be one of the largest question marks you'll wrestle with for quite a while.

Note, that in order to acquire this level of information from potential buyers, one would have to be talking to and interviewing them to understand their activities, goals and frustrations. In some cases where you are already familiar with the target market, you might be able to "intuit" these, but you need to be careful to validate the persona with real buyers. As rumored, Apple did NO market research prior to releasing the iPod, but they had an expert consultant that had been in the player industry from the beginning as the idea originator, internal champion and project leader.

Once you have this level of information about your target market, and put it in a form to share with your organization, then many minds can innovate alternative solutions. If this was an enterprise buyer example, being able to quantify the financial impact of their frustration would be a key objective, such as "lost revenue", "increased cost", "opportunity cost", or "hours of lost productivity".

One last point. When you talk to potential buyers, they need to be both existing customers and non-customers, with the latter being the priority. Even if you have 70% market share in a product that has 70% penetration into the potential market (which is extremely rare), this is only 49% of the total market, and thus your current customer set is the minority of the opportunity.

Summary

The first key activity for creating innovation and value in the marketplace is to find a market gap created by buyer frustration to unsatisfactory solutions for accomplishing their goals. One technique for finding these gaps is by getting out of your office and talking to both customers and non-customers. The discussion should focus on what they would like to be able to do and why current solutions that are available are inadequate in addressing their needs. These can be documented in a Buyer Persona and shared within the organization to spur innovative solutions that truly meet customer needs. For continued reading, see Part 2 – Obsessing over Customer Experience.