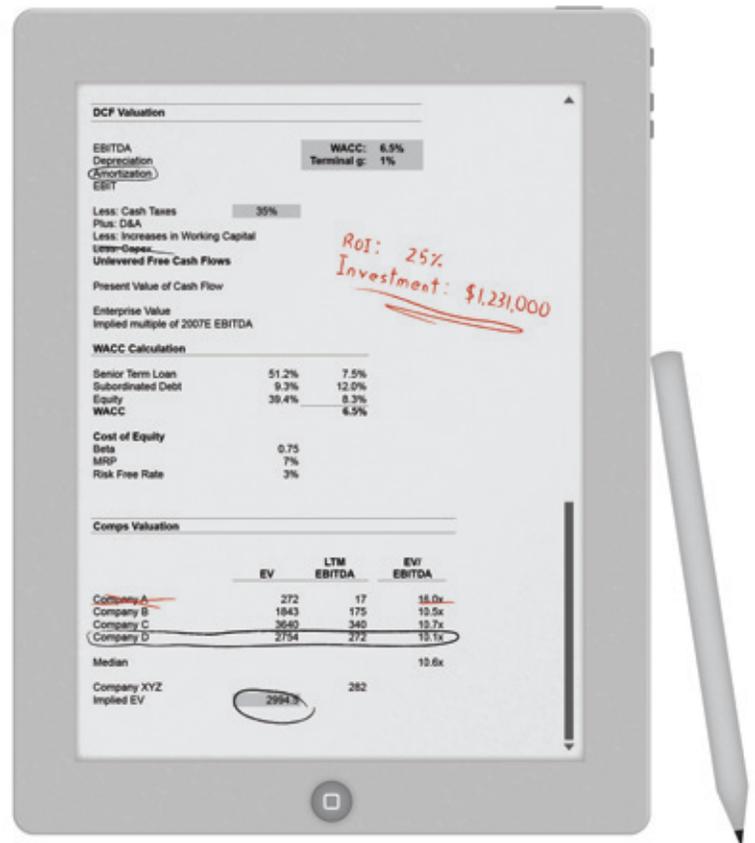# One Step at a Time

The Next Revolution from Apple

Written by Joseph Ghobrial and Will Meneray

What is there to say about Apple that hasn't been said already? For a company that was on life support just over a decade ago, the meteoric revival is legendary in corporate America. The turning point was the acquisition of NeXT in 1996, which brought back co-founder Steve Jobs and rewrote Apple's corporate DNA. Now, legions of fans eagerly await every announcement by the company they have come to expect revolutions from. The most recent release, the iPad 2, is poised to become one of the fastest selling consumer electronics devices of all time – having sold as many as 1 million units during its first weekend alone.

Yet in the midst of all the hype, the infamously long lines, and near universal Wall Street praise, something is noticeably absent. Ever since the iPod, the writing has always been on the wall for the next revolution. While consumers have always been amazed by the final incarnation of the product, Apple's next platform for content presentation has been predictable. In the case of the iPad, a tablet-like device was rumored as early as 2002 by Matthew Rothenberg, before finally catching steam in late 2009. The iPhone concept was predicted as early as 2005, 2 years before its initial release. Both of the final announcements were met with relief, rather than outright surprise.

This time, despite all the momentum surrounding Apple, there is no such speculation. There certainly is a great level of anticipation of refreshes for Apple's current product line – an iPhone 5, revamped Apple TV, the addition of video streaming to their iTunes offering – but nothing which would match the scale of those in the past. The company's innovative efforts have undoubtedly been distracted by the health of their prominent leader, but could Apple really be running out of revolutions to deliver?
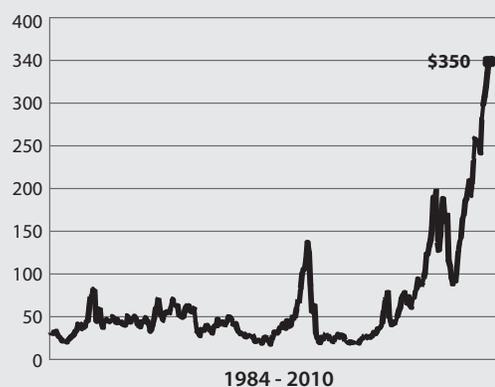
The Story So Far

Apple's incredible run has redefined "success" in the corporate world by turning traditional industry economics on its head. Revenues appear nearly recession proof and margins grow even

Apple's Performance Over Last Three Decades

Revenue (US$ thousands) and Gross Margin

65,225

1987 - 2010
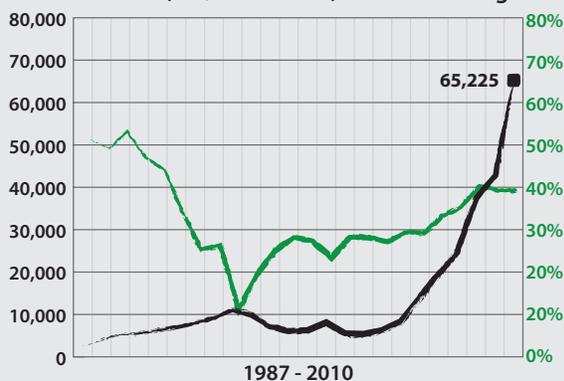
Stock Performance

$350

1984 - 2010

with new product introductions. Most impressively, the company is able to generate cash flow hand-over-fist – including $8 billion in the most recent quarter alone.

It is hard to imagine, given how profitable and revolutionary their products have been, that Apple spends relatively little on research and development. At 4% of sales, their R&D spending pales in comparison to almost all major competitors; with Google at 12%, Microsoft at 17% and RIM at a whopping 25%.

This startling disparity demonstrates something beyond just ruthless efficiency that is at the core of Apple's strategy. Unlike most major competitors, Apple embraces overlap between its products with little regard to potential cannibalization of sales. The iPhone, for example, replicates the iPod's capabilities, and the iPad poses a risk to both iPhones and MacBooks.

While the convergence between the uses and perceived benefits of Apple's product line may result in some cannibalization, the economies of scale are immense. Technologies can be rolled out across a variety of platforms cheaply and quickly given the consistency between them. Apple applies this strategy to both hardware and software. By offering their core operating system across such a multitude of devices, Apple has been able to ease consumer adoption and begun to crack Windows's traditionally hegemony.

This points to the most critical element of Apple's strategy: rather than focusing on cutting costs, the company focuses on extracting the most value from the customer. This strategy manifests itself most clearly in the relationships Apple has with their suppliers.

Instead of purchasing generic, off-the-shelf components for their products like their competitors, Apple takes the time to research and develop them. This process is costly but ensures that they deliver the latest technology to the consumer. These components are then seamlessly integrated to provide the consumer the full capabilities of the technology. Under such circumstances, Apple is consistently able to be first to market with new technology and maintain its reputation for the highest quality – helping justify their premium price point at the same time.

Apple is able to accomplish this without ever controlling the low margin and capital-intensive manufacturing portion of the value chain. Instead, they use their enormous volumes and prepayment practices to entice manufacturers into a lucrative relationship. The power they have over these manufacturers is extremely potent. For example, Samsung, who provides the A4 and A5 processors for different iPhone and iPad models, produces better quality chips for a competitor than for its own products. Until its own technology in those categories catches up, they are helping sustain Apple's competitive advantage.

Most importantly, this relationship gets better with not just scale but scope. Since technology can be rolled out across platforms, each new device comes at an increasingly reduced cost. For Apple, the question is not whether to move but rather where to move next.

> "An ink manager running at a computer system receives ink information entered at a pen-based input/display device and accumulates the ink information into ink strokes. The ink manager communicates with a handwriting recognition engine…"
>
> - Apple Inc. Patent

A Second Gap?

When Steve Jobs introduced the iPad in January 2010, he described it as filling a gap in the marketplace: the gap between smartphones and laptops. For this 'third category' to be successful, Steve explained, the device had to be better than both the laptop and the smartphone at some key tasks, namely, web browsing, photos, videos, and eBooks. With 2010 sales of 15 million units and expected 2011 sales of 40 million, the iPad clearly met those criteria.

The iPad filled the gap between the smartphone and the laptop for content consumption but, in doing so, created another. While Apple has a full line-up of devices at nearly every conceivable form factor and level of portability for content consumption, the same cannot be said for content creation. Tablets have been heralded as the beginning of the end for the laptop, but until they obtain the same capabilities for productivity applications – running Microsoft Office software effectively for example – they will do no such thing.

Ultimately, the functionality of the different devices are bound to continue to converge. In the near term, the need for a new device, one that bridges the gap between tablets and laptops, has emerged. No device is likely to improve on the laptop for formal document generation. Instead, filling this gap will require a device that does something neither a laptop nor media tablet does well: perfects note-taking, document annotation, and document organization.

This concept aligns perfectly with Apple's singular function devices. Just as the iPod was designed to kill the portable CD player, and the iPhone designed to kill the feature-phone, this new product would replace another outdated technology: pen and paper.

Introducing the iSlate

At its simplest, the iSlate would present a user with a digital "piece of paper" on which they can write and have their notes saved for future use. Users would also be able to read and fully annotate eBooks, pdfs or other documents accessed through e-mail, the Internet, or the device's internal storage.

The proposed device would have a similar form factor to the iPad. Instead of using a color LCD screen, however, the device would use an advanced version of the eInk displays found in many eReaders including the Amazon Kindle. Interacting with the device would involve using basic Multi-Touch gestures, augmented with a digital stylus.

eInk technology provides an experience as close to paper as currently possible in a digital device, while using only a fraction of the power required by an LCD display. This would allow the iSlate to last orders of magnitude longer on a single charge than both a laptop and a media tablet.

While the eInk technology currently on the market supports neither stylus nor touch input, the company behind eInk displays, E Ink Holdings, announced in August 2010 that they are working on such a display. If anyone is capable of creating large enough demand for this technology as to have its development rapidly fast-tracked, it would be Apple. In fact, they even filed a patent for similar technology in November 2009.

Journey to the Cloud

If the proposed device sounds simple and minimalistic, that's because it is. Apple has a long history of eschewing frills and extraneous features in the name of simplicity and a streamlined user experience. The iSlate is designed to do three things very well: note-taking, document annotation, and document organization. The former two are achieved by creating a device that approximates the pen and paper experience as well as possible. The latter has little to do with the device itself, but rather the ecosystem Apple should build to surround it: a cloud-based document storage and organization system.

The features of such a system are themselves fairly straightforward: as users take notes they are automatically uploaded to the cloud and indexed by time, date and location, cross-referenced to a user's calendar. Handwritten versions would be preserved in their original incarnation, but handwriting recognition software would be used to allow for searching and sorting notes by keyword. In this way, users will be able to search their notes by date, time, the meeting they were written in, and any text written within the note. Content could then be accessible through any internet-connected device and simultaneously edited by multiple users – aligning perfectly with the increasingly mobile and collaborative nature of information.

What begins to emerge is a system that eliminates the primary shortcoming of pen and paper – the ease with which information can be accessed. More importantly for Apple, the iSlate becomes the all-important gatekeeper to the enterprise consumer. The situation is identical to the iPod or the iPhone – where Apple profits by selling hardware, but the iTunes Store and App Store are key to the value proposition. Once users have their collection of notes stored on this system, it becomes increasingly difficult to switch to a competing product – even if better technology were to emerge. This provides not only a captive audience for the iSlate as it evolves, but a stepping-stone to additional enterprise product offerings that leverage the cloud.

The Next Revolution

So why should Apple take the risk? At first glance, such a product would appear better suited for a company with an enterprise focus like Research in Motion. A similar idea was originally considered by Palm, but couldn't get funded.

To date, Apple has left the enterprise market relatively untouched. Creating a product that fulfills a need found not only in corporate boardrooms, but also in classrooms, hospitals, and art studios could provide Apple with significant growth potential. With a comprehensive consumer product line, Apple must turn to the enterprise market to maintain its growth rate into the future.

This may be a risk for Apple's short-term position, but it positions the company well for sustainable growth. The consumer product line does not require reinvention – its growth is sustainable through incremental refreshes. With $60 billion in cash, Apple has the ability to take on risks. Further, with no dividend in sight, there is an expectation by the market that they will do so.

A product like the iSlate, however, addresses a much more compelling need. In the face of inevitable product convergence, where single-purpose devices slowly merge, devices that introduce specific technologies are imperative. For example, an Apple tablet using Multi-Touch was first developed in 2005 but eventually shelved. Instead, the technology was transferred to the iPhone and the iPad didn't arrive for another five years. This seemingly counterintuitive decision was actually very prudent: Apple first had to introduce consumers to the idea of Multi-Touch interaction on a familiar device before introducing it in a brand new category.

The rationale for the iSlate follows this pattern. Introducing content creation elements onto the consumption-optimized iPad dilutes its value proposition as current technology does not allow both to be done well on the same device. It is critical for Apple to create a separate iSlate-like device to build consumer acceptance for this style of interaction. Creating this acceptance enables the convergence towards a device – optimal for both content consumption and creation – that users will soon demand and technology will eventually allow.

At its most fundamental level, Apple's strategy has always been to prime consumers for its next technology. Creating a device like the iSlate, not in its specifics but in its purpose, does exactly that. As with all of Apple's products, less is more, at least for now.

How Apple Holds Power Over Its Supply Chain

Areas of Apple Control

Encourages hardware purchases as gateway to online content

Online Ecosystem

Consumer

Research and Development

Manufacturing

Distribution

Gives exact product specifications utilizing latest technology

Obtains favourable terms through prepayment and long-term contracts

Utilizes product scarcity and pull-marketing to force compliance

Regular product refreshes and common operating system ease adoption