HEWLETT-PACKARD

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Sunday, April 15, 2012

Contents

EXECUTIVE SUMMARY

Hewlett-Packard, or HP, not only manufactures the most personal computers in the world, but it also dominates the printing market, wields power in the IT Services and Enterprise Infrastructure sectors, and is rapidly growing its Software division in a competitive arena. The two previous CEOs failed to unite HP's six business units under a successful strategy; Meg Whitman has taken the reins as the third CEO in two years to try and bring the company back to its roots.

HP is currently the world's 11th most valuable brand[1]. The logo ensures quality to its customers in 170 countries. Over the last few years, revenues have grown but profits have dropped; management has continually overpaid for worthless acquisitions and expanded its operations in shrinking markets. From its roots in a Palo Alto garage to more than $127 billion in 2011 revenue, HP has grown impressively, but management must realize that revenues are less important than profits: if our recommendations are followed, 2012 will be the year that the company gets back to its roots, cuts off the fat, and returns to consistent profitability.

We have faith in Meg Whitman as CEO, given her success with eBay and other companies, but she has limited time and resources. We have analyzed the company as a whole – all six divisions – and have formulated a three-step plan that emphasizes HP's strengths, diminishes its weaknesses, and sets the company as a whole on a path to long-term profitability. First, we must stabilize management and maintain a consistent C-suite vision by offering additional incentives to Meg Whitman to ensure her tenure at HP for at least five years. Second, we must consolidate product lines in the Personal Systems Group, Hewlett Packard's biggest division, to reduce costs and increase revenues. Third, we will merge the six existing divisions into the Hardware Group and the Enterprise Solutions Group, which will emphasize synergy and focus on HP's core capabilities. Once we implement this three-step plan, investors will once more recognize HP's potential for profitability in the short term and long term.

History

Bill Hewlett and Dave Packard

Bill Hewlett and Dave Packard began Hewlett-Packard in a garage in Palo Alto after graduating with degrees in Electrical Engineering from Stanford University in 1935. In 1938, Bill and Dave produced HP's first product, the resistance-capacitance audio oscillator, used to test sound equipment. They name it the HP Model 200A. One of their first customers was Walt Disney who used the oscillator to test audio equipment in the 12 specially equipped theaters showing Fantasia in 1940. Bill and Dave wished to establish a unique culture for their firm and in 1940 they decided that all employees would share in HP's success. They issued $5 (U.S.) Christmas bonuses and adopted production bonuses, laying the foundation for the company's profit-sharing program. Every worker had bonuses tied to productivity that evolved into all-inclusive profit-sharing. In 1942 they created a pioneering Health Care Plan for all eight of their employees. In 1943 HP entered the microwave field, setting the stage for future leadership in signal generators and by 1947 the company had blossomed with 113 employees and $851,287 Revenues. The corporate system Bill and Dave established respected personal autonomy and stressed corporate decentralization. They systematically nurtured employee satisfaction and morale, which led to a steady stream of leading-edge, highly profitable products.

The 1950s were a time of tremendous growth for both HP and the city of Palo Alto. The city's population more than doubled during the decade. Palo Alto was on its way to becoming the high-tech center it is today. In 1951 HP invented the 524A high-speed frequency counter, greatly reducing the time required to measure high frequencies. Frequency counters and related products would come to account for billions in future revenue for HP. In 1956 HP created yet another new product, its first oscilloscope, which went on to represent a significant part of HP's test and measurement product line. In 1957 HP held its IPO with shares selling for $16. HP also introduced its corporate objectives to empower decentralized decision-making. Spanning seven categories—profit, customers, fields of interest, growth, people, management and citizenship—the principles helped distinguish HP from the top-down management style of most companies and serve as the basis for the HP Way. In 1958 the firm had its

first acquisition, F. L. Moseley Company, a producer of high-quality graphic recorders, establishing the foundation of HP's printing business. By 1958 the firm had 1,778 employees and $28 million in revenues. In 1959 HP went global, establishing a marketing organization in Switzerland and a manufacturing plant in Germany.

EXPANSION

HP partnered in the 1960s with Sony and the Yokogawa Electric companies in Japan to develop several high-quality products. The products were not a huge success, as there were high costs in building HP-looking products in Japan. HP and Yokogawa formed a joint venture (Yokogawa-Hewlett-Packard) in 1963 to market HP products in Japan. HP also acquired The Sanborn Company in 1961 allowing it to enter the medical field. Medical equipment would become a significant source of revenue for HP before being spun off in 2000. In 1965 HP introduced its first computer, the HP 2116A. The world's first go-anywhere, do-anything computer, it was designed to withstand environmental extremes. Then in 1968 HP introduces the world's first desktop scientific calculator, the HP 9100A. It was ten times faster than most machines at solving science and engineering problems. Ads called it a "personal computer," the first documented use of the term. By the close of the decade HP had 15,840 Employees and $326 million in revenues.

The 1970's were an important decade for HP as a number of new products ensured its future growth. Furthermore, the 1970s signaled the time HP becomes a global company as non-U.S. revenues exceeded U.S. revenues for the first time. In 1972 HP expanded into business computing with the HP 3000, which introduced the era of distributed data processing. HP also introduced the HP-35, the world's first scientific hand-held calculator. Small enough to fit in a shirt pocket, it made the slide rule obsolete. In 2000, Forbes ASAP names the HP-35 one of the "all time products" that changed the world. In 1977 HP introduced the HP-01 wrist instrument, a combination digital wristwatch, calculator and personal calendar. It was one of the world's first personal information devices. The decade was not without errors- Steve Wozniak, co-founder of Apple, originally designed the Apple I computer while working at HP and offered it to them under their right of first refusal to his work, but they did not take it up as the company wanted to stay in scientific, business, and industrial markets. Other

duds included a cumbersome $795 wristwatch-calculator of the mid-1970s, which sank in the marketplace. The decade ended as Hewlett and Packard both retired from the company to be succeeded by Joe Young. By the end of the decade the firm was making $2.4 billion annually.

The Age of Computers

Despite turning down Steve Wozniak in the 1980s HP was able to enter the age of computers and Hewlett Packard became a major player in developing desktop computers and introduced the first laser jet ink printers. The printer was instrumental in generating new cash flows and bringing in new customers. HP then introduced the HP 9000 technical computer. The first "desktop mainframe," it was as powerful as the room-size computers of the 1960s. By the end of the decade HP has 87,000 employees and nearly $10 billion in revenues.

In the 1990s, HP expanded their computer product line, which initially had been targeted at university, research, and business users, to reach consumers. This allowed HP to become the leading sellers of PCs in the U.S. HP grew through acquisitions, buying Apollo Computer in 1989 and Convex Computer in 1995. Later in the decade, HP opened hpshopping.com as an independent subsidiary to sell online, direct to consumers. In 1999, all of the businesses not related to computers, storage, and imaging were spun off from HP to form Agilent. Agilent's spin-off was the largest initial public offering in the history of Silicon Valley. The spin-off created an $8 billion company with about 30,000 employees, manufacturing scientific instruments, semiconductors, optical networking devices, and electronic test equipment for telecom and wireless R&D and production.

Acquisitions, Innovation, and New Markets

In the beginning of the 2000s, HP was still doing well growing revenues and creating new products. In 2000 HP introduced the Superdome server line, advancing its position in Internet infrastructure. In 2002 HP acquired Indigo to accelerate its lead in digital publishing and merged with Compaq to form a new company serving more than one billion customers across 162 countries. In 2004 HP rolled out new digital entertainment products, including plasma and LCD flat-panel TVs and the HP Digital Entertainment

Center. HP also partnered with Apple to launch the Apple iPod from HP. By 2004 HP had 150,000 employees and over $80 billion in revenues.

Over the next five years HP spent tens of millions of dollars in a series of acquisitions acquiring online photo service Snapfish; Scitex Vision, a market leader in wide and super-wide format printers for signage and industrial applications such as billboards, banners, street advertising and packaging; VoodooPC, a high-end gaming PC provider; Mercury Interactive Corp, HP's largest software acquisition to date, to create a new organization for business technology optimization; Tabblo Inc., to make printing from the web easier and more convenient; Logoworks, to provide small businesses with access to professional design solutions at a fraction of market cost; SPI Dynamics, Inc., for application security assessment software and services; Neoware Inc., a provider of thin client computing and virtualization solutions; MacDermid ColorSpan Inc., a manufacturer of wide-format digital inkjet printers; Opsware, a market-leading data center automation software company; and EYP Mission Critical Facilities Inc., a global consulting company for large-scale data centers. The company ended 2009 with 321,000 employees and $120 billion in revenues. The year closed with Hewlett-Packard announcing it would be acquiring 3Com for $2.7 billion in cash. The acquisition is one of the biggest in size among a series of takeovers and acquisitions by technology giants to push their way to become one-stop shops. This series of acquisitions is evidence of the pressure HP felt to expand beyond their current market niches like many tech companies following the financial crisis.

STRUGGLES IN RECENT YEARS

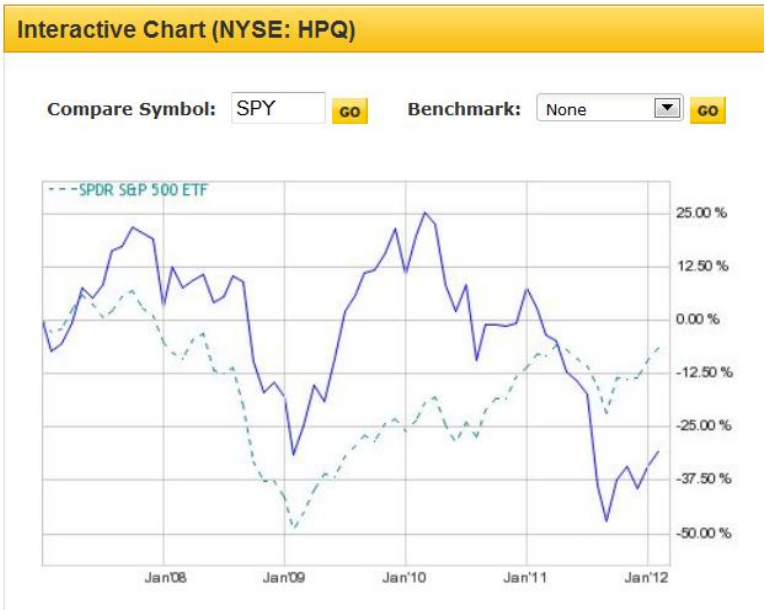
HP has struggled over the past few years following a series of ineffective strategy shifts and fruitless acquisitions including its 2010 acquisition of Palm for $1.2 billion in cash and debt. HP has lost market share in the PC market and has been hurt by tablet computers and smart phones which are now the preferred computing platform and are displacing desktop and laptop computers by the score. The stock has fallen dramatically over the past few years due to slump in sales of its personal computers. On August 6 2010, CEO Mark Hurd resigned, and on September 30 2010 Léo Apotheker, formerly of SAP, was named CEO and president. Apotheker failed to redirect corporate strategy and on August 18, 2011 HP announced that it would strategically exit the smartphone

and tablet computer business, focusing on higher-margin "strategic priorities of cloud, solutions and software with an emphasis on enterprise, commercial and government markets". This was largely due to HPs TouchPad tablet, which failed to compete with Apple's iPad. HP also contemplated spinning off their personal computer division into a separate company. On September 22: HP's board of directors appointed Meg Whitman as president and chief executive officer, replacing Léo Apotheker. Ms. Whitman indicated that H.P. would focus on internal development of its businesses, which include personal computers, servers, printers, software and providing data management services to corporations. There will most likely be no large-scale acquisitions, she said. H.P. will instead work over the coming year to rebuild a company damaged by big purchases and excessive budget-cutting in areas like research and development. In November 2011, Hewlett Packard reported that net income in the fourth fiscal quarter fell to $200 million, or 12 cents a share, from $2.5 billion, or $1.10 a share, in the year-ago quarter. This represents a 91 percent drop.

Financial Analysis

Overview

Chart 1: Stock Performance Over 5 Years



After a strong financial performance from 2005 to 2010, HP significantly underperformed the S&P 500 benchmark in 2011. Investors have voiced concerns about dropping margins in hardware products - HP's bread and butter, costly acquisitions such as Autonomy, leadership churning, and a lack of coherent strategy. The stock price has taken a hit accordingly: HP is down 30% over the last 5 years, compared with the market which is only down 5%.

Chart 2: Basic Financial Information

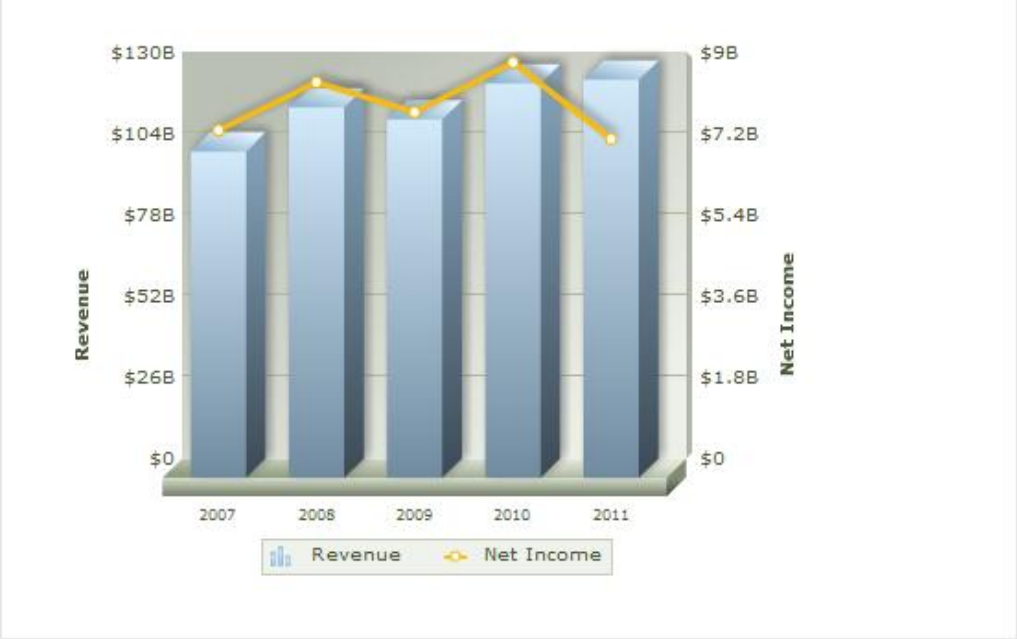
Company Type	Public NYSE: HPQ Headquarters
Fiscal Year-End	October
Financial Filings	SEC
2011 Sales	$127.25B
1-Year Sales Growth	0.96%
2011 Net Income	$7.07B
1-Year Net Income Growth	(19.26%)
Prescreen Score	Low Risk
Auditor	Ernst & Young LLP
Company Website	http://www.hp.com

In 2011, HP saw its net income shrink by 19.26%, despite a modest 1% increase in sales over the same period. Earnings per share were $3.32 compared with a stock price of $26.61, giving HP a price to earnings ratio of 8.02 at the end of the fiscal year. Compared with an industry median of 17.12, HP could be seen as either undervalued or underperforming. The distinction lies in one's outlook on HP's future growth prospects.

Revenue, Income, and Cash Flow

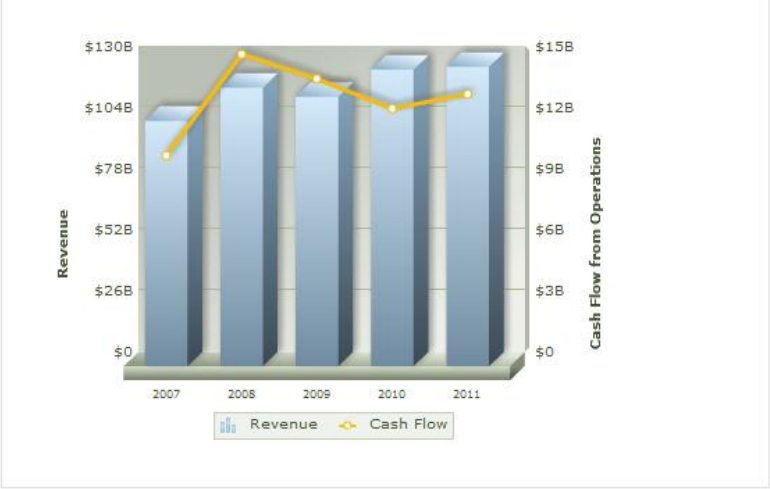
Revenue, income, and cash flow are three of the most important metrics to analyzing the health of a tech powerhouse like HP. Revenue is a good indicator of demand for HP's products and services across product lines (see next section for details). Net income takes into account COGS, SG&A expenses, depreciation, amortization, and nonoperating expenses to understand the true costs of obtaining these revenues.

CHART 3: REVENUE VS. NET INCOME



In 2011, HP had overall revenues of $130B and net income of $7.2B. This represents a 1% increase in revenue from 2010 and a 30% increase over 2007, but a 20% drop in net income from 2010 and no change from net income in 2007. Cash flow actually increased from $12B to $13B from 2010 to 2011, and increased about 20% over a five year period, but doesn't give a true picture of HP's lackluster performance in the last year. The downward trend in net income must be reversed in the upcoming quarters or HP's stock price will suffer.

CHART 4: REVENUE VS. CASH FLOW FROM OPERATIONS



BREAKDOWN BY BUSINESS UNIT

CHART 5: INCOME STATEMENT BREAKDOWN

	HP[1] Consolidated	PSG	Services	IPG	ESSN	HP Software	HPFS
	In millions, except per share amounts						
Net revenue	$ 127,245	$39,574	$35,954	$25,783	$22,241	$ 3,217	$3,596
Year-over-year net revenue % increase (decrease)	1.0%	(2.9)%	1.2%	0.1%	9.3%	17.9%	18.0%
Earnings from operations	$ 9,677	$ 2,350	$ 5,149	$ 3,973	$ 3,026	$ 698	$ 348
Earnings from operations as a % of net revenue	7.6%	5.9%	14.3%	15.4%	13.6%	21.7%	9.7%
Net earnings	$ 7,074						
Net earnings per share							
Basic	$ 3.38						
Diluted	$ 3.32						

HP's core sources of revenue are Personal Systems Group (PSG), Services, Imaging and Printing Group (IPG), and Enterprise Servers, Storage, and Networking (ESSN), making up 97% of net revenues. However, HP Software and HP Financial Services (HPFS) are

by far its fastest growing business units with growth rates of 18% in the last year. PSG is the least profitable group and HP Software is the most profitable group in terms of percentages, but it is more instructive to look at the absolute value of profits when determining which group is more important to the company.

In absolute terms, the ESSN unit produces large profits ($3B in 2011) and is also growing at a high rate of 9%. Services and IPG also did well to bring in $5B and $4B respectively in earnings from operations, but are growing slowly at 1% or less annually. PSG revenues have decreased, and though HP Software and HPFS are growing quickly, their overall revenues are small enough to be of little concern as of 2012. In a world with limited time and resources, it is best to focus on large and fast growing business units – in this case the Enterprise Services, Storage, and Networking unit. Later in the report, the strong opportunities in this division will be elucidated upon.

Comparison to Industry and Market

As mentioned before, HP's low P/E ratio indicates one of two things: either HP is a strong company and is therefore undervalued by investors in comparison to its industry competitors, or HP is a weak company that is appropriately discounted for its weak performance in 2011. Its price to book ratio, however, is quite low at 1.49 compared to the industry median of 5.03, and its price to cash flow ratio is a measly 4.89 versus the industry median of 12.61 and a market median of 10.29. This means that HP is seen as hardly being worth the assets that compose it or the cash flow it generates: investors see very little growth in HP's future and are moving their assets elsewhere.

Chart 6: Top Competitors

	Hewlett-Packard	IBM	Dell	Accenture
Annual Sales	$127.25B	$99.87B	$61.49B	$27.35B
Employees	349,600	--	103,300	236,000
Market Cap	$52.98B	$180.22B	$25.24B	$37.02B

CHART 7: RELATIVE VALUATION RATIOS

Comparison to Industry & Market

	Company	Industry Median	Market Median
Price/Sales Ratio	0.49	1.92	1.51
Price/Earnings Ratio	8.76	17.12	--
Price/Book Ratio	1.49	5.03	2.27
Price/Cash Flow Ratio	4.89	12.61	10.29

The companies that are likely receiving these investors' money are IBM, Dell, and Accenture. IBM and Accenture compete with HP in Services, Software, and ESSN, and Dell competes with HP in the PSG and IPG groups. These companies are smaller in terms of revenue and employees than HP, but are valued higher for each dollar of revenue. It is probable that since these companies, while still large, are somewhat more focused on their offerings than HP (which is so large and disjointed as to be unwieldy), they are better able to generate profits from their existing and future revenues. IBM is only 80% of the size of HP, but has a market cap almost 3 times larger – probably boosted by the spinoff of its personal computers division in a sale to Lenovo several years ago.

SWOT Analysis

Chart 8: SWOT Overview

Strengths

Innovation: HP emphasizes innovation as a key element of its business culture and as a driver of its success. It spends a larger portion of its budget on research and development than any of its competitors, in order to design and develop products, solutions, and services that take advantage of the latest trends in technology. As of the end of 2011, HP had over 36,000 patents, an increase over the number of patents in its portfolio in 2009. Outside of its research labs, HP tries to innovate by creating partnerships with other tech companies that could create new synergies and benefit both companies by giving customers more effective and novel experiences.

Size and scale: HP is the largest company of its kind, and each of its business units is among the largest in its sector. Due to its size, it has access to funds, clients, and resources inaccessible to smaller competitors. It's possible that HP is too large right now, but its size definitely gives it some advantages in key areas of business such as PSG and ESSN. HP is big enough that in leveraging its scale it ensures the availability of

components at favorable prices during shortages and expands the use of industry standard components in enterprise products.

Synergy among business units: Due to HP's size and comprehensive offerings, it is able to leverage its portfolio of products and services to great effect. Its ESSN unit can provide servers, storage, and networking products that are designed to work well with HP's Services unit; then HP Software completes the package by providing a framework for customers to operate their IT units cost-effectively and efficiently. Strategic Recommendations will provide a discussion of why synergy needs to be emphasized even more.

Competitive Advantages in the Personal Systems Group: The PSG faces intense competition on the price front and also faces significant challenges of inventory depreciation. HP's main competitors for personal hardware systems are Dell, Acer, Asus, Apple, Lenovo, and Toshiba, as well as generic or "white box" manufacturers. However, HP has a competitive advantage in creating revenues because it enjoys a broad product portfolio, strong R&D, brand and procurement leverage, service and support offerings, well-established distribution channels, and the ability to cross-sell a portfolio of offerings. Of these, the broad product portfolio is the most questionable strength; while some customers like to have more options, research shows that more is often less, and a more concentrated portfolio strategy in PSG might end up being even more of a competitive advantage.

Services: HP has deep technology expertise in multivendor environments, virtualization and automation, and infrastructure management. HP has collaborated with powerhouses such as SAP, AG, Oracle, and Microsoft to great effect in the services sector. The quality and extent of knowledge of HP's services set it apart from other companies, in addition to its ability to cross-sell its services with its other business unit offerings.

Enterprise Servers, Storage, and Networking: Though the ESSN industry is intensely competitive, HP has competitive advantages in the areas of IT systems, power and cooling, security, management, virtualization, and automation, compounded by a global reach, intellectual property portfolio, and R&D capabilities. These competitive

advantages over its competitors enhance product and service offerings of the other business units as well as leverage the benefits of scaled production in all areas.

HP Software: HP Software specializes in software for enterprise IT management, and differentiates itself with the breadth and depth of its software portfolio and its ability to leverage its services unit and existing market coverage.

Product manufacturing: HP has an extremely flexible and efficient product manufacturing system because of its network of outsourced manufacturers and its inventory management and distribution practices. HP uses a significant number of outsourced manufacturers around the world to generate cost efficiencies and get HP-designed products to market more quickly. Inventory management and distribution systems reduce inventory costs and

Inventory management and distribution: HP's inventory management and distribution practices, in both building products to order and configuring products to order, seek to minimize inventory holding periods by taking delivery of the inventory and manufacturing immediately prior to the sale or distribution of products to customers.

Brand name: According to Interbrand.com, in 2011 HP moved up from the 12th to the 11th most recognized brand name[2]. Its ubiquitous logo is a symbol of quality, reliability, and innovation in all 170 countries in which HP operates. Putting the HP logo on a product means customers are much more likely to buy it, and as such is an all-important stimulant of revenue for the firm.

WEAKNESSES

Size: HP's size strengthens it in some areas, but it also prevents the company from making agile movements into new markets or out of old ones. Red tape and bureaucracy are seen as serious obstacles to getting things done inside the firm.

Acquisitions: HP made some solid acquisitions in the first decade of the millennium, such as Compaq, Mercury Interactive, and Electronic Data Systems Corp, but its recent acquisitions leave much to be desired – especially its overpriced buyout of Autonomy for ten times revenues. Meg Whitman has said she does not plan to pursue any

acquisitions, but investors should still be concerned about HP's recent poor choices as an indicator of future poor choices.

Some supply chain dependencies: HP relies on single sources for laser printer engines, LaserJet supplies, and parts for products with short life cycles; HP also uses Intel as its sole provider of processors and Microsoft for software products. Certain hardware components are hard to acquire, price volatile, and in limited in supply. However, a disruption with these suppliers would disadvantage HP's competitors just as much if not more.

OPPORTUNITIES

The Imaging and Printing Group: The IPG has valuable opportunities for future growth, if it can capitalize on its high margins (15% in 2011). HP management sees possibilities to accelerate high-usage unit share and pursue recurring business for the long run with high-value customers. There are also opportunities in the analog to digital transition in graphics, web and mobile content solutions, and cloud-based commercial IPG solutions and services.

The Cloud: HP has developed a strong suite of products and services to take advantage of the growing trends to move towards the cloud, and if it acts quickly enough to establish itself as a front-runner in the sector, then it will have an opportunity to greatly increase revenue and profits. Recently, HP has developed HP Cloud Assure, Cloud Service Automation, and HP MagCloud, but many are unimpressed with the lack of innovation in the products. HP must focus its resources and hire the right people to develop a compelling cloud platform or platforms.

Supply Chain Management: HP is planning to optimize its supply chain by eliminating complexity, reducing fixed costs, and leveraging its scale; in effect it will increase the inventory of components obtained at good prices, as well as expand use of industry standard components to reduce inventory costs and simplify production processes.

THREATS

Competitive Partner Relationships: Unlike most of its rivals, HP is composed of many different business units, each one of which has its own competitors who are often individually operated. The amount that HP invests in each of the segments is crucial to

its success, because if it underfunds one business unit, then it will be disadvantaged by lesser financial, technical, and marketing resources compared to its competitors. Furthermore, if competitors form exclusive contracts with current or potential customers, or break contracts with HP, then HP's businesses will suffer. For instance, an alliance partner announced in 2011 that it would stop developing software for a line of HP's servers: Customers immediately delayed or canceled their orders, hurting revenue in the ESSN division.

Intense Competition in Hardware Divisions: The personal computing and printing markets are hyper-competitive, to the point that aggressive price competition has decreased margins to almost zero, as smaller and more nimble competitors are able to offer lower prices than HP.

Maturing products: Revenues could decline dramatically for products in maturing industries, such as personal computers. Substitutes are beginning to arise and take market share, in the way that mobile computing devices and cloud solutions are grabbing market share from existing hardware computer products. Even in the highly profitable Imaging and Printing Group, revenues are decreasing for products in which competitors have begun to manufacture alternatives for HP LaserJet toner and inkjet cartridges.

Third party suppliers: HP depends on third party suppliers, and though it has done well to diversify and make redundancies in its supply chain, if it fails to manage these suppliers properly, revenue and gross margin would suffer greatly. Shortages, oversupply, and contractual risks are all potential threats to HP cost management.

Competitive Analysis

Michael Porter's Five Forces –Threat of New Entry, Buyer Power, Supplier Power, Threat of Substitutes, and Internal Competition – are difficult to apply to a large corporation like Hewlett-Packard simply because it has six separate business units. Five of these business units have high profit margins, high growth rates, or both; the real focus should be on HP's Personal Systems Group (PSG) division, which presents the greatest challenge in its declining revenues and decreasing margins. The other

divisions: Services, Imaging and Printing Group, Enterprise Services, Storage, and Networking, Software, and Financial Services are all strong enough in the short term to allow for the report to focus on PSG in this section. Later recommendations will involve strategies for the other business units, since HP's strategy should include all of its divisions, but again, for the Five Forces analysis, PSG will be the focus.

CHART 8: PORTER'S FIVE FORCES: HP PERSONAL SYSTEMS GROUP

THREAT OF NEW ENTRANTS (MODERATE)

HP's PSG division operates in one of the most competitive markets in the world: the electronics industry. Margins are razor-thin due to the high-volume, mass-production nature of the products, as well as the fungibility between one hardware component and another. If it can spin a CD around and read it, then it's as good of a CD drive as any other. Electronics have become commodities, which leads to low profits for vendors in the industry: HP's Personal Systems Group has felt the strain of operating in this intense market, as evidenced by its declining revenues and decreasing margins in the last few years. The threat of new entrants is not high chiefly because the market is not attractive for any profit-seeking investors.

Beyond the unattractive nature of the personal computers industry, the actual process to become as a real competitor to companies like HP, Acer, Dell, and Apple requires enormous capital requirements. Hundreds of millions of dollars are needed to buy huge factories, offices, and employees to work in them, just to be able to physically make a computer product. To get the parts, patents, and expertise to do so, an entrant

would have to negotiate with hundreds of suppliers and establish new supply chains in several different countries. Then to actually sell its product, the company would have to launch huge ad campaigns to compete with, for example, HP's $1 billion in annual advertising spending[3]. A small company could definitely produce a computer to compete with the giants of the PC industry, but it wouldn't be able to compete on price or brand recognition, and therefore wouldn't be a big threat in these respects.

HP, Dell, Apple, Acer, and their competitors are all seen as reliable by the average consumer[4], and in order to convince a customer to choose their product instead of that of an established player, an entrant would have to differentiate their product in a significant way. But the personal computing industry is growing and changing so fast that there is a real opportunity for a new firm to come in and distinguish itself if it has an improvement or advancement on current technology. For instance, if an entrant develops a way to instantly start up a computer and run it twice as long on battery, then this might be significant enough to consumers to outweigh the higher prices they would face and its lack of brand recognition. Though the possibility of a huge breakthrough in the PC market is small, it is nonetheless real, and as such brings the overall threat of new entrants to a moderate level (whereas entrant threat would be low if product differentiation wasn't a factor).

Bargaining Power of Buyers (Moderate)

Buyers have moderate bargaining power for two reasons: on one hand, there are so many buyers that no one group of purchasers is cohesive or powerful enough to influence HP's margin directly. On the other hand, since the personal computer market is so competitive, customers find that they can demand more customization and features from their products simply because if the demand is there, HP or its competitor will meet it in order to increase net income.

HP's buyers in the PSG division are composed of personal users, businesses, government institutions, and academic facilities. Of these, businesses have the most buyer power because of their size: a company like Deloitte Touche Tohmatsu, which employs 182,000 professionals and needs at least as many desktops and laptops, could theoretically use its size to negotiate with HP and threaten its margins. In reality, even a big corporation like Deloitte avoids buying tens of thousands of computers at once.

Even if Deloitte wants to purchase 5,000 PCs in a year, that number is such a small percentage of PSG's $130B yearly revenue that it wouldn't be a bargaining chip during negotiations. If the biggest companies don't have buyer power in negotiations, then it's clear that smaller organizations and individuals don't have bargaining power either.

As a whole, however, users of personal computers have bargaining power because the commoditization of computer products makes it easy for buyers to recognize when one product is better than another. Hard disk space, RAM, resolution, speed, and more are all quantified and compared easily. As such, HP and its competitors face immediate pressure to either lower its prices or introduce a feature when another company does so.

Customers are very price sensitive and therefore have developed little brand loyalty (except for Apple customers)[5]. HP and its direct competitors who manufacture Windows-supported machines find that when customers want something, whether hardware-related or a feature such as customization and add-on software, they will quickly find a company to provide it for them at relatively low cost. Because buyers have power as a whole through their changes in taste, but have little negotiating power as a unit, overall bargaining power of buyers is moderate.

Bargaining Power of Suppliers (High)

In HP's PSG division, suppliers have a high level of bargaining power because of the nature of the electronics industry. A desktop or laptop computer is made up of hundreds of parts, some of which are sold by large reliable suppliers and others which are sold by any number of small specialized manufacturers. The number of large reliable suppliers is very small: companies like Intel, Hitachi, and Foxconn fit this description but are the exception rather than the rule. It is easier for HP to deal with large suppliers because of the size of its contracts and the benefits of having relationships with successful business partners. Unfortunately, the majority of HP's suppliers are smaller, which creates inefficiencies in contract negotiations involving small amounts, but because some of these small companies have a competitive advantage in the difficulty or legality of reproducing their specialized technologies, they are too expensive for HP to try to buy out.

The risk and unreliability of the smaller suppliers are outweighed by their large numbers and relative fungibility of product. Most computer components, such as a hard disk, DVD drive, or touchpad, can be purchased from any number of suppliers, who have to compete fiercely in order to make a profit: their products are priced well in HP's view and there is little chance of shortage. The problems of risk and unreliability lie in the aforementioned suppliers that make specialized technologies, such as wireless network cards.

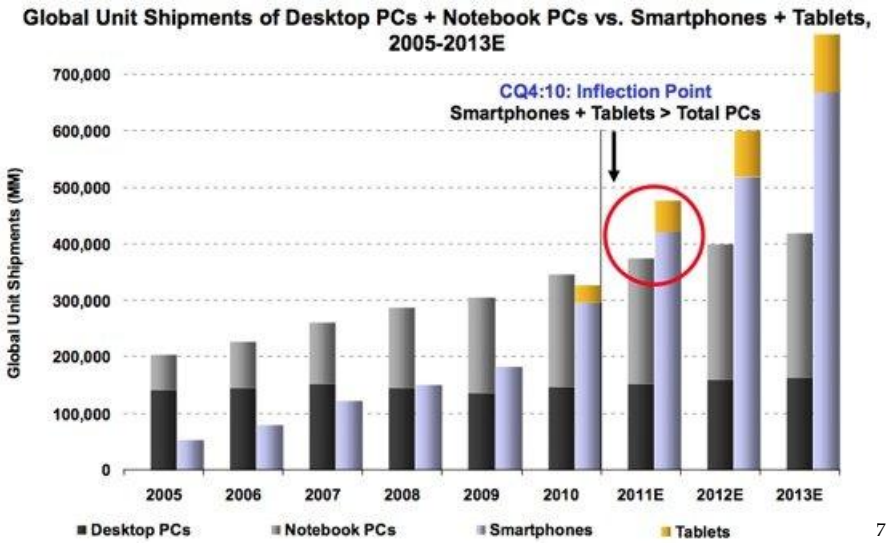
In order to offset the risk of relying on small specialized vendors, HP purchases materials, supplies, and product subassemblies from a number of suppliers, and maintains channels of alternate supply in case of disruption. Like its competitors, HP manages its supply chain through a combination of scheduled orders and blanket purchases, maintaining an inventory intended to last three to four months. Several times a year, suppliers place constraints on production and prices become volatile for certain components, which forces HP to acquire scarce inputs for a higher-than-average market price, thereby decreasing margins. HP is currently unable to avoid these shortages and periods of price volatility, but its competitors experience the same difficulties. Due to its size, HP is actually better off than its smaller competitors because it has more bargaining power as a single large entity.

Overall, HP's relationships with its large suppliers – for example Intel and Microsoft – have been extremely stable despite the huge supplier power. Microsoft, for instance, could completely wipe out HP's PC business if it refused to supply its Windows operating systems on new HP computers, or made Windows incompatible with HP hardware. Intel, which makes almost all of the processors used in HP computers, could end its supplier relationship with the company and severely disrupt its production for several months until HP switched over to its secondary provider, AMD. Fortunately, Microsoft, Intel, and other key vendors are on good terms with HP, but the threat of serious supplier power is still a concern. HP's habit of stocking up on materials for three to four months in advance alleviates the short-term concerns about relationships with large suppliers.

SUBSTITUTES (MODERATE)

The Personal Computer has been perhaps the most important consumer item of the last two decades, but that doesn't mean it is around to stay. PC sales of all manufacturers have been losing overall market share in the personal electronics market, particularly to mobile devices, and more recently, tablets[6]. Increasing functionality of items such as the RIM Blackberry and the Apple iPad, which are both able to perform many tasks once exclusive to PCs, have come at the cost of desktop and laptop sales. The chart below demonstrates that desktop and laptop sales will grow quite slowly over the next few years while smartphones and tablets continue to grow rapidly.

CHART 9: PROJECTED PC SALES VS. MOBILE DEVICE SALES



7

The PSG is in high danger over the long run of losing business to tablets and mobile phones, if it continues its current strategy. Shipments of personal computers dropped by 12.7% in the second quarter of 2011 alone, and laptops and netbooks in particular were the hardest hit with a 50% drop[8]. In recent years, in an effort to take advantage of the rising popularity of tablets and smartphones, HP developed the Touchpad and bought smartphone maker Palm for $1.8 billion[9]. Unfortunately, the Touchpad failed to attract consumers and 270,000 are left sitting on store shelves. Best Buy is hoping that HP will buy them back because of their unpopularity. Palm's latest smartphones have left customers unimpressed as more and more users switch to Apple and Android-based products[10].

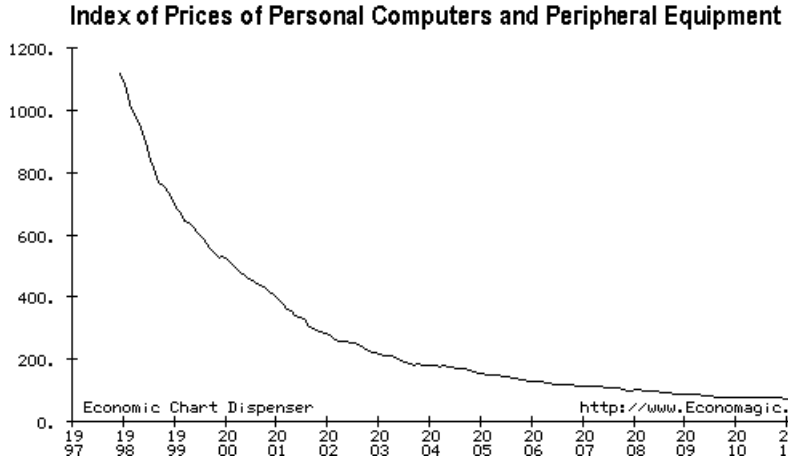
Unless HP develops a viable solution in the tablet market, and works within its Palm division to produce an attractive smartphone product, its Personal Systems Group will certainly continue to see declining revenues and miniscule margins. Because of the firm's size and the expertise of its PSG division, it is certainly possible for them to develop winning products, so the high risk of losing sales to tablets and mobile devices is offset by HP's ability to make its own successful tablets and mobile devices. In our strategic recommendations section, we will outline the success factors in such products.

Internal Competition (High)

The personal computing industry is one of the most fiercely competitive in the world, according to a Stanford Business school study[11]. With high supplier power, moderate buyer power, moderate threat of substitutes, and moderate threat of new entrants, HP and its competitors are pinned in to their industry and have no choice but to compete with each other at every turn.

PC components are highly interchangeable. As noted above, hard disk drives, CD-ROM players, monitors, keyboards, RAM chips, and more are all interchangeable due to the nature of electronics – they either work, or they don't – so the computing industry as a whole is moving towards commoditization[12]. According to Investopedia, "When a product becomes indistinguishable from others like it and consumers buy on price alone, it becomes a commodity"[13]. Computer prices have declined drastically over the last few decades, fulfilling Moore's law that the number of transistors on a chip will approximately double every two years[14]. When six of the seven major PC manufacturers all offer Windows 7 and similar hardware capabilities, prices naturally converge among those competitors. Apple has done extremely well by differentiating itself in both the software and hardware realms, but overall the fundamental price of computing power has dropped dramatically over the last couple of decades:

CHART 10: COMPUTER PRICES FROM 1997-2011



[15]

The trend is inescapable: more advanced memory and computing power is in the near and distant future. Scientists are still finding ways to put more transistors on a computer chip, and nanotransistors have recently been developed, portending the arrival of nanocomputers in about a decade. In the short and long term, HP would do well to differentiate itself in the same way that Apple set itself apart from its Windows competitors; this is one of the core strategic recommendations that we will give shortly in an attempt to outmaneuver the PC industry's high internal competition, high supplier power, moderate buyer power, moderate threat of substitutes, and moderate threat of entry.

STRATEGIC RECOMMENDATIONS

HP faces three problems: upper-level management issues, which have affected the coherence of firm strategy; intense competition in the Personal Systems Group, which has seen declining margins and revenues in recent quarters; and a set of six disjointed business units, which don't currently work well together. All of HP's major challenges and issues can be categorized under these three categories – management, PSG unprofitability, and a lack of synergy among the six business units. Our solutions, as we discuss below, are threefold: first, pay Meg Whitman enough to secure her role as CEO for at least five years; second, pare down the number of products in the PSG by focusing on fewer models of higher quality, including a tablet and a smartphone; third,

focus on synergy between business units and sell the divisions that don't cohere with the whole.

1. Pay Whitman More to Keep Her as CEO

Meg Whitman, who replaced Leo Apotheker late in 2011 as the CEO of HP, needs to have a long tenure at HP in order to give the company coherence of long-term strategy and to assure investors of HP's stability. Investors demand that the company create a succession plan, and we have determined that the best succession plan is to keep the current CEO. Whether or not Meg Whitman is the absolute best candidate for the long term is less important than giving the impression of consistency, reliability, and direction. As long as HP follows the Griffin Consulting Group's other two main recommendations, paying Meg Whitman enough to convince her to stay as CEO for at least five years will keep the company on the playing field.

In the last two years, HP has had three different Chief Executive Officers, each with different strategies, and none of them coherent. Leo Apotheker replaced CEO Mark Hurd in September 2011 after Hurd was found to have fudged numbers on his expense account to avoid revealing a relationship with certain companies[16]. The company struggled under Apotheker's shaky leadership: in 2011 he announced his intention to spin off HP's PSG business, which had been the foundation of the company's success for several decades and was a fundamental part of the company[17]. He made this decision at a point when the PSG was actually performing relatively well compared to the rest of the industry, and when HP was the largest manufacturer of desktops and laptops in the world.

After a year-long tenure at HP, Leo Apotheker was ousted by the Board of Directors, and Meg Whitman, who enjoyed success at eBay as its CEO in the early 2000s, took over his role. Whitman seems to have a better handle on operating HP as a whole, as she decided to keep the PC business and called back Apotheker's hasty decision soon after she became CEO. She has announced her intention to develop a strategy for HP as a whole, including all six business units rather than the Software unit that Apotheker focused on, but she has also promised to continue several strategies that Apotheker began during his tenure. Many investors see this as "New CEO, same old strategy"[18]. However, Whitman has already taken real steps to increase synergy within the

company: in March 2012, she announced her intention to merge its printer (IPG) and PC (PSG) businesses in order to streamline operations[19]. This synergistic move is consistent with our recommendation to focus on core activities of the firm and to emphasize coordination over revenue generation.

The Griffin Group sees the continuation of strategy from one CEO to be vital to the success of a large firm like HP, and thus commends Whitman's adoption of some of Apotheker's strategies. Investors already believe HP to have no more coherence of strategy than a fish floundering on land, and also think that HP is not credible anymore, as evidenced by Apotheker's announcement to sell the PC business and Whitman's decision to keep it just months later. Though Whitman has yet to announce her long-term strategy, we are confident that as long as she remains CEO for at least five years and follows our recommendations, HP will increase profitability in the short run and long run.

Whitman currently takes all her pay in the form of performance-based bonuses and stock options. Her annual salary is a nominal $1, but her target bonus for 2012 is $2.4 million, and she has the option to purchase 1.9 million shares of HP at $23.59[20]. This option is fully vested if she stays at HP for three years, but will only be profitable for her if the company share price rises in that same period (the stock price is slightly lower than the strike price as of Q2 2012). Whitman is estimated to have a personal wealth of $1.3 billion, however, so whatever benefits she stands to receive from HP are small in comparison. In order to truly motivate Whitman to continue as HP's CEO for at least five years, the executive compensation will have to be more robust and creative.

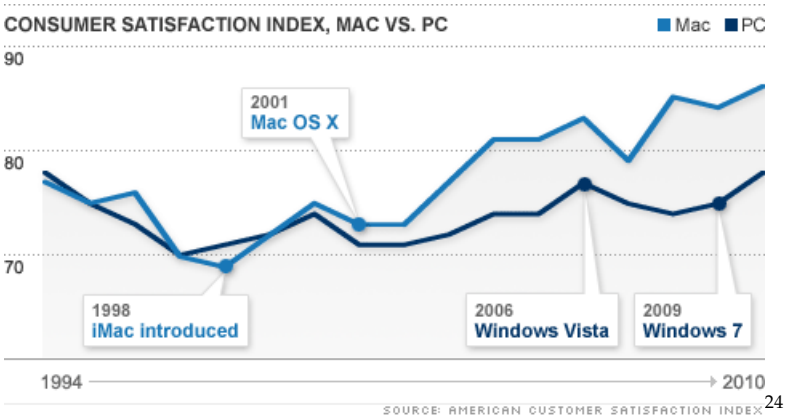
Whitman's huge personal wealth presents a compensation challenge that can be remedied by both increasing her stock-based compensation significantly and by increasing her quality of life. On one hand, we recommend tripling the leverage of her stock options, because HP will benefit greatly if she manages to lead the company to a higher stock price; in addition, the cost of leveraging these stock options will be negligible in comparison with the profits HP would make. If the company doesn't do well, then Whitman will earn nothing, but it is important to motivate Whitman with an appropriate salary.

On the other hand, Whitman is already a billionaire, and it is likely that she values her free time somewhat more now than when she was CEO of a rapidly-growing eBay. As such, HP's Board of Directors should renegotiate Whitman's contract in terms that are much more favorable to her personal life. Whether this means more vacation days, shorter work days, or other benefits, it is crucial to motivate Whitman to stay at HP and to direct the company on her own terms and to the best of her ability.

2. Consolidate Product Lines in PSG

HP offers hundreds of versions of products on their website, spanning all types of electronics from laptops and printers to netbooks and monitors[21]. In the laptop category, HP sells 56 different base models, 31 of which can be customized in millions of combinations[22]. Customers complain about too many options, and a Harvard Business School study found that when presented with too many choices, customers tend to run to another competitor[23]. In many cases, this competitor is Apple, Inc. who offers only a few laptops but whose products are highly rated – see the chart below:

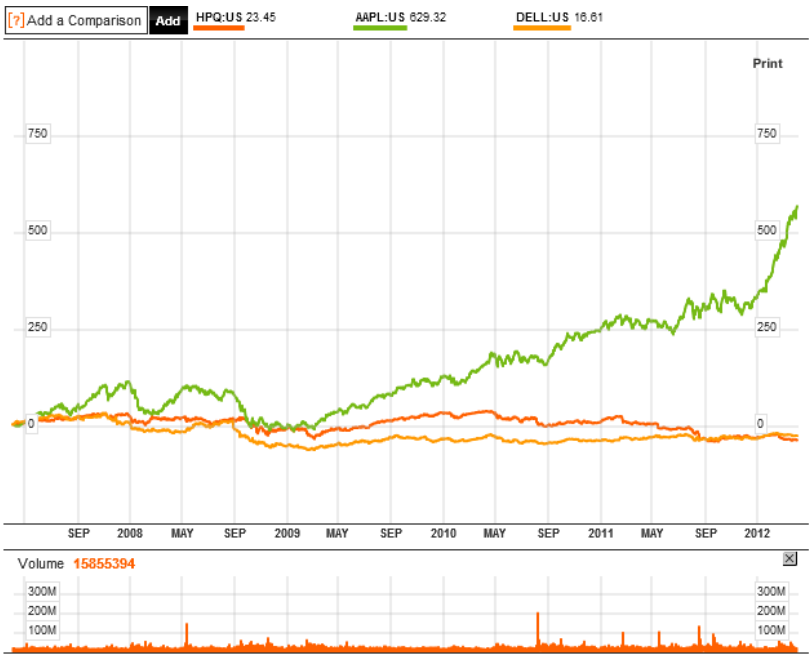
Chart 11: Customer Satisfaction Index, Mac vs. PC



[24]

Mac users are becoming more and more satisfied with their computers than Windows users, and this trend over the last two decades is reflected in Apple's meteoric rise to the top of the stock market, with a 2356% return since 2000[25], which is a compound annual growth rate of 30.57%. Below is a chart of Apple's stock performance in the last 4 years against HP and Dell, the two most prominent manufacturers of now-commoditized Windows machines.

CHART 12: HP AND DELL VS. APPLE SINCE MAY 2008



Snapshot for Hewlett-Packard Co (HPQ)

Today Open:	23.2200	52wk Range:	21.5000 - 41.8000
Previous Close:	23.4500	Volume:	15,360,771
Day's Range:	23.1500 - 23.3800	1-Yr Rtn:	-41.26%

Quotes delayed, except where indicated otherwise. All prices in local currency. Time is ET.

HP's core division is its Personal Systems Group, which competes against Apple, Dell, Toshiba, Acer, and Lenovo, and if HP wants to succeed in the next few years against tough competitors, then it will have to drastically change its PSG strategy. The key component of the PSG strategy devised by the Griffin Consulting Group is to consolidate product lines. HP needs to stop producing 56 different models of laptops: it is better to only produce three or four models at a time.

In the electronics industry, less is more. For three reasons, HP will actually decrease costs and increase sales by reducing the number of options it offers in laptops, desktops, printers, and monitors. Furthermore, the reduction of redundant activities will allow for resources to be allocated towards a quality tablet and a quality smartphone.

First, HP will cut costs by eliminating redundancies in product development labs and customer support functions. If model XFW-1503 and XFW-1504 are handled by different research and support teams simply because they their keyboards are different, then HP has to pay twice as much for a product feature (the different keyboard) that probably isn't even a major concern for the customer. If the customization and slight differences between different HP models truly drove more product sales and higher profit, then it might be worth it, but research is showing that while customers *say* they want choices and options, their buying habits say otherwise[26] - which is the next point.

Recently, a psychologist has found that by decreasing the number of types of a product it offers, a company can actually increase revenues. Psychologist Barry Schwartz is known for his research on the "Paradox of Choice", which is the idea that when consumers are presented with too many options, they tend to avoid making a choice and as a result commit less often. Conversely, Schwartz also finds that when customers have fewer choices of a product, they actually buy more of it[27]. This runs contrary to popular belief, especially in which "bigger is better" and "more is always good". However, it is important to cater to customers' actual buying habits, not just what they say they want.

When HP whittles down the number of laptops it offers from several dozen to perhaps two or three, then not only will it decrease costs through the elimination of redundancies and induce customers to buy more in the short term because of the paradox of choice, but the quality of the products will be higher in the long run. If HP dedicated its research and development, quality assurance, and customer service teams to just two or three products, then the quality of these laptops, desktops, and other personal systems would increase tremendously. Research and development teams will innovate more quickly when they have a focus, quality assurance teams will iron out all minor defects and bugs, and customer service will be more efficient in handling problems because there will be a smaller range of issues when there are fewer differences between HP's product offerings. In just a couple of years, with the right marketing, HP could be seen more as a competitor to Apple than to Lenovo, Acer, or of the Windows machine manufacturers who try to compete on cost alone and also offer hundreds of options for every product type.

So by consolidating its product lines in the Personal Systems Group, HP will lower its costs, simplify its offerings to spur consumer demand, and cultivate fewer but better products in the short and long run.

3. Increase Synergy and Focus on Core Activities

HP's management talks a lot about synergy, but aside from Whitman's announcement to merge the IPG and PSG divisions last month, nothing has been done to back up their words[28]. Whitman's idea is a step in the right direction, but the overhaul of HP's organization needs to be more complete and in accordance with a focus on core activities rather than just trying to increase revenues (which has shown to be at the cost of profits)[29]. HP would do well to follow Cisco's example. In 2011, Cisco sold its low profit margin divisions, merged core capability divisions, and reduced its size and operations somewhat to avoid further thinning itself out[30].

There is already some synergy between the Services, ESSN, and Software units. The Enterprise Storage, Servers, and Networking unit (ESSSN) provides products that are designed to work effectively with HP's Services unit. In turn, HP Software provides a package of software that acts as a solid framework with which customers can operate their IT units effectively and for a low price. HP can use its size to attract more clients from any one of these units, and once they have them, offer services from the other two synergistic units. So to decrease costs and increase revenues, the Griffin Consulting Group recommends a full integration of the Services, ESSN, and Software units. Redundant management and administrative roles will be eliminated when all three groups, which already serve the same customers, combine into one. As mentioned before, as one larger unit, client relationships will be maintained and HP will be able to offer better integration for future services, which will increase revenue significantly. As part of this integration, however, small business units within each of the six main units must be eliminated if they do not contribute to the synergy of this new combined unit. Even if profitable, these non-core activities should be spun off and sold to interested parties. In the long run, it is more important to get HP to work as a solid unit and to focus on what it does best. The firm may face some short term losses during the restructuring phase, but investors will be able to see the long-term advantages of our synergistic focus.

We support Whitman's plan to integrate the PSG and IPG for the same reasons we want to integrate Services, ESSN, and Software. The HP Financial Services Group is not a core function of the company, but should be retained because it can be adapted to better work with the company's two combined divisions, which will be called the Hardware Group and the Enterprise Solutions Group. HPFS will be given a mandate to operate solely as a risk-reducing entity: it will buy and sell futures contracts on necessary inputs, hedging out commodity, supplier, and to some extent macroeconomic risk. HPFS will fulfill the important role of stabilizing the company's financial situation and decreasing overall risk when possible.

HP has alarmed investors in recent years with its overpaying for a series of unwise acquisitions. When HP overpaid for companies like Autonomy and Palm at unrealistically high valuations, it gave off the message that it was using its cash poorly and that it wanted to increase its revenues and size at the cost of profits. This practice of acquisition needs to stop for HP to remain a respectable and efficient company. The Griffin Consulting Group recommends that HP cease all acquisition and merger activity until the restructuring of the Hardware Group and the Enterprise Solutions Group have been completed; after that, limited acquisitions will be allowed but only if they truly fit within the mandate of each division and if they can be bought at a favorable price.

1+2+3 = Return to Profitability

If Hewlett-Packard implements the three recommendations of the Griffin Consulting Group, then as demonstrated, it will increase revenues, decrease costs, and thereby significantly increase profits in the long term. First, HP must enact a succession plan by encouraging Meg Whitman to remain CEO for five years by any means necessary. Second, the PSG must consolidate its product lines. Third, HP must combine its PSG and IPG groups into the Hardware Division, merge Services, ESSN, and Software into the Enterprise Solutions division, and move HP Financial Services into a role designed to reduce risk for all business units; these moves will increase synergy at all levels of the company, and in combination with the spin-off of non-core activities, will focus the company on its core capabilities. In the next few months, HP may undergo a lot of activity due to the merging of divisions, selling of non-essential business units, and reduction of product lines in the Hardware Division, but investors will surely recognize

the long-term wisdom of this three-step plan. In the next few months, HP's stock price may even go up as a result, and even in one year, the firm will see increasing revenues, decreasing costs, and profitability.

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