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Microsoft vs Apple: Which is Great by Choice?

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Abstract

We set out to examine the performance and practices of Microsoft and Apple since the Collins *Great by Choice* [GBC] study. In *Great by Choice*, Collins and Hansen developed an explanatory framework based on their comparative study of seven pairs of high performing companies and matched comparison companies. One of these pairs was Microsoft and Apple. For these two, we examined financial performance for the eleven-year GBC comparison period (1991 - 2001) and the analysis period (2002 - 2012). Using this financial analysis, we developed and examined research questions about whether Apple and Microsoft were or were not employing the GBC practices over our research period. Although GBC seemed to have sound advice for companies, our findings were mixed. During the research period, Apple went from under-performing to outperforming Microsoft. However, the causal relationship of the GBC practices to the financial reversal is not clear. Both Microsoft and Apple varied in their use of the GBC practices over the research period.

Keywords: Leadership, management best practices, practice versus performance, comparison case studies, *Great by Choice*, Apple, Microsoft

1. INTRODUCTION

The rivalry between Microsoft and Apple began when Microsoft chose to license its operating system to different computer manufacturers. This resulted in several different machines running Windows while Apple chose to keep its operating system to itself and to construct its own hardware. Today this rivalry is still evident in Apple and its Mac OS, and Microsoft and Windows 8. At Apple, the one-size-fits-all approach emphasizes a particular product. Microsoft has over 100 Windows 8 devices marketed. This exemplifies the strategies of Microsoft and Apple in a nutshell—Apple limits your choices; Microsoft

multiplies them. For Microsoft, the level of support and technical help may suffer. Pros and cons aside, the contrasting strategies between the two companies will continue to define the significant differences between Microsoft's and Apple's business results (Gilbert 2012).

In a series of works by Collins, and then with Hansen, the authors sought to establish principles and practices that were unique to successful companies. In *Great by Choice* [GBC], they examined paired companies over an extended period until 2002. One of these pairs was Microsoft and Apple. Collins and Hansen identified Microsoft as one of the companies that chose to

be “great” by implementing the GBC practices they identified, whereas Apple did not. Their GBC principles and practices applied to companies within their period of analysis (up to 2002), but what about beyond? Collins makes the case that *falling* from greatness did not contradict his conclusions because during the dynastic period the companies were engaging in those practices while financially *great*. His assumption was that the companies are no longer “great” because they were no longer using the practices. In this paper, we examine Microsoft and Apple to determine if “great” performance is explained by the application of GBC practices or a reduction in performance is explained by discontinuing using those practices that purportedly made them “great.” Perhaps the answer is somewhere in-between. We begin with a review of the conclusions and practices from Collins’ previous works (Table 1).

Title	Reference	Objective
Built to Last	Collins, Jim and Porras, Jerry (2001)	Identify practices that enable the transformation from a mediocre (good) company to a great company.
Good to Great	Collins, Jim (2001)	Identify practices of great companies.
How the Mighty Fall	Collins, Jim (2009)	Identify mechanisms that cause once great companies to fail.
Good to Great and the Social Sector	Collins, Jim (2011)	Identify practices of great companies in the social sector.
Great by Choice	Collins, Jim and Hansen, Mortenson (2011)	Uncertainty, chaos luck -- why some thrive despite them all

Table 1: Quick reference to Collins and group series of books

In *Built to Last*, Collins described the practices of great companies. In *Good to Great*, Collins showed how “great” companies evolve over time and how long-term sustained performance could be engineered into the enterprise. He identified a set of elite companies that made the transition from mediocre to extraordinary results and sustained those results for at least fifteen years. After the transition, the good to great companies generated cumulative stock returns that beat the overall stock market by an average of seven times in fifteen years, better than twice the results delivered by a composite index of the world's greatest companies.

Subsequent to *Good to Great*, Collins and Hansen extended their research work in GBC by examining a set of companies that they refer to as “10x” cases. During the study period, these companies outperformed other companies in their industry by 10 times or more. One of the organizations that met their criteria was Microsoft.

These companies, specifically Microsoft in our study, started from a position of vulnerability, rose to become *great by choice* with outstanding financial performance. Microsoft did so in an unstable environment characterized by forces that were out of their control, fast moving, uncertain, and potentially harmful. Collins matched companies with firms that failed to become great in the same extreme environments, specifically Apple in our study. They used the distinction between winners and “also-rans” to uncover the distinguishing practices that allow some to thrive in uncertainty.

In this paper, we replicated the methodology presented in Collins and Hansen’s GBC over the end of their period of examination (1991 – 2001) and extended it into a second period (2002 - 2012). Our goal is to determine if the practices developed and related performance that this particular pair of companies demonstrated in their dynastic period continued (or increased) or discontinued (or decreased) based on financial and practitioner research as formulated in GBC.

We set out to examine the financial performance and practices, Microsoft and Apple, from Collins’ GBC study. We examined their financial performance for the eleven-year GBC comparison period (1991-2001) and the research period (2002 - 2012). We used these financial analyses along with the qualitative practice analysis to develop and evaluate research questions as to whether Apple and Microsoft were or were not employing the GBC practices. In the sections that follow, we describe our financial and qualitative practice analyses and conclusions.

2. FINANCIAL PERFORMANCE ANALYSIS

GBC Procedure

Collins and Hansen selected and compared companies based on financial performance from 1972 to 2002. They observed that the true test of a company’s ability to handle a turbulent business environment was accomplished by comparing like companies operating in the same environment. Table 2 and Figure 1 (see Appendix) show the Total Price Return percentage for the GBC and comparison company (Microsoft and Apple) for the two periods: the last 11 years of the GBC period (1991-2001) and the 11 years since (2002-2012). The first test we performed was to verify that the Microsoft was still financially outperforming Apple in the last eleven years of the GBC comparison period. We examined how the two companies performed in comparison to the

Standard and Poor's 500 (S&P 500) and to each other. Microsoft performed 12.8 times better than the S&P 500. Apple did much worse than the S&P 500. We looked at the Microsoft-Apple pairing. It showed that the "great" company, Microsoft, outperformed Apple by a factor of 42.7 in this period.

GBC-Redux. We looked at the 11-year update period 2002-2012. Apple went from being worse than the general market to 29.9 times better and 48.8 times better than Microsoft. To test Collins' and Hansen's proposition that GBC practices lead to "great" financial performance and the lack of these same practices leads to worse performance, we would expect that Apple should show evidence of using GBC practices during the update period. Microsoft should show a decrease in GBC practice usage due to their significantly decreased performance relative to the S&P 500 and Apple.

Another financial performance check we performed was to examine the companies' current ratio and debt-to-equity ratio. The data are included in Table 3 and Figures 2 and 3. This data is comparable to the data provided in GBC that concluded that the "great" companies hold current ratios better than comparisons 72% of the time and have better total debt-to-equity ratios 64% of the time. The analysis concurs with Collins and Hansen for the end of the GBC period. Microsoft outperformed Apple on both measures.

However, in the update period, Microsoft's average current ratio, though 13% better than Apple's, reduced by 23%, whereas Apple only reduced by 1%. Microsoft's debt-to-equity ratio was much worse in the subsequent 11 years. Apple's average debt-to-equity reduced by a factor of 30 and is now 6 times less than Microsoft's. This data provides the basis for the research proposition that Apple used GBC practice in the update period and Microsoft did not.

Based on the financial analysis we constructed two research propositions related to the GBC practices. These research propositions, shown in Table 4, depict expectations for GBC practice or lack of practice given our financial analysis of the update period.

3. PRACTICE OBSERVATIONS

In GBC, 10X leaders were both "disciplined" and "creative," "prudent" and "bold"—they went fast when they must, but slow when they could—they

were consistent, yet open to change. According to Collins and Hansen, successful companies were often not as innovative as the control companies. In some cases, they were actually less innovative. Rather, they managed to "scale innovation," introducing changes gradually, then moving quickly to capitalize on those that showed promise. The successful companies were not necessarily the most likely to adopt internal changes as a response to a changing environment. "The 10X companies changed less in reaction to their changing world than the comparison cases" (Murray 2011). Table 5 presents the GBC practices.

Collins and Hansen began the process of identifying and further explicating the unique factors and variables that differentiate GBC companies. One of the most significant differences is the quality and nature of leadership. We used these practice descriptions, and those in GBC, to identify practice usage by Microsoft and Apple. To better understand the context and business environment we considered a number of other factors that complemented and correlated with the GBC practices. These included counts by year of acquisitions and divestitures; joint ventures; infrastructure incidents; significant personnel actions; philanthropic activity; litigation; financial announcements; and recognitions/presentations. These factors were particularly helpful in analyzing and assigning ratings in situations where there was considerable activity. Examples are litigation dealing with the acquisition activity of Microsoft and the personnel changes and leadership ratings of Apple.

We performed a comprehensive practice analysis of Microsoft and Apple depicted in Table 4. To verify the research questions we examined a comprehensive set of sources and references. Of note, there was neither uniform nor consistent availability of company data. For example, Wikipedia was somewhat useful for providing a ready supply of current links and sources. For Microsoft, the company websites overwhelmed us with data. We visited both company websites and examined their financial declarations for the period of study. There was much variability in the form and content of reporting. Media and press releases were quite useful—this involved sifting through two to three hundred references for each of the years. Another source we used was *Brint.com*, a specialized business search engine. This source allowed us to consider academic journals, business magazines and newspapers,

and industry publications while deploying various search filters.

Overall, we rated both companies as shown in Table 4 on the four practices: Fanatic Discipline, Productive Paranoia, Empirical Creativity, and Level 5 Ambition and noted whether the data supports or does not support the research proposition. We scored articles and incidents using GBC discussions and descriptions. The scores were converted into a 7-point scale ranging from "strongly disagree that the practice is being used" (1) to "strongly agree the practice is being used" (7). If the practice rating supports our research question on practice usage based on financial performance (Table 5), then our analysis supports Collins' and Hansen's work in GBC.

In the remainder of this paper, we present a case description of our analysis and conclusions with respect to GBC practice usage by Apple and Microsoft in the period from 2002 to 2013. At the conclusion of the paper, we summarize our findings and make recommendations for application and future research.

Research Question 1: Did Microsoft Stop Using GBC Practices?

Microsoft is the leading software producer worldwide (van Kotten 2011). As of 2012, they dominate both the PC operating systems and office suite markets. The company also produces a wide range of other software for desktops and servers. They are involved in areas including internet search (with Bing); the video game industry (with the Xbox and Xbox 360 consoles); the digital services market (through MSN); and mobile phones (via the Windows Phone OS). In June 2012, Microsoft announced that it would be entering the PC vendor market for the first time with the launch of the Microsoft Surface tablet computer.

The GBC study ended in 2001; in that period, Microsoft met the "great" criteria. In 2001, Microsoft was still firing on all cylinders. However, this was not always an accurate representation, especially in the latter part of the update period 2000 – 2012. Microsoft's fiscal year 2006 revenue was more than double Apple's FY '06 revenue: \$44.3 billion to \$19.3 billion. What has happened since? Apple's revenues have more than tripled while Microsoft's have grown by less than 50%. Microsoft still employs substantially more people than Apple does, although the size of Microsoft's workforce has dropped a bit, from 93,000 in 2009

to 89,000 in 2010. Apple's reported headcount has been rising, with a significant increase from 34,300 in 2009 to 46,600 in 2010. Apple's revenue per employee at the end of its 2010 fiscal year was substantially higher than Microsoft's: \$1.4 million versus \$702,000. Likewise, Apple's profits per employee were \$300,429, compared with \$211,236 for Microsoft (Machlis 2011). Table 6 presents our compilation of the four practices for the update period along with other considerations that mitigate the practices ending in 2012 with respect to Microsoft. The compilation better clarifies by presenting chronologically as well as in summary form and introducing more granularity overall. Not all practices have a score for each year when there were no significant events.

Fanatic Discipline [Neutral]. To serve the needs of customers around the world and to improve the quality and usability of products in international markets, Microsoft localized many of their products. Localizing a product may involve modifying the user interface, altering dialog boxes, and translating text. Localization, although an attractive international strategy, can be a deterrent to consistency.

Microsoft has been active in acquisitions throughout its history. Over the past eleven years, they have acquired 64 companies. Table 6 showed the distribution over the eleven years of our study. Many of these acquisitions denote entries into new or developing marketing areas. Rarely is Microsoft a first mover. Microsoft often enters during the shakeout stage of the product life cycle. This is evidenced by their recent entry of a tablet into the crowded iPad/Samsung foray. Another example is their entry into the *cloud computing* market for Windows (Fried 2008) and their intent to open a chain of Microsoft-branded retail stores (Freid 2009). Over the past 20 years, Microsoft has exhibited discipline and endurance in its "not first mover" strategy.

Productive Paranoia [Somewhat]. Microsoft contracts most of their manufacturing activities to third parties. These include Xbox 360 and related games; Kinect for Xbox 360; various retail packaged software products and Microsoft hardware. Their products include some components that are available from only one or limited sources. Their Xbox 360 console and Kinect for Xbox 360 included key components supplied by a single source. The integrated central processing unit/graphics processing unit is purchased from IBM, and the supporting

embedded dynamic random access memory chips are purchased from Taiwan Semiconductor Manufacturing Company. However, they usually have multiple sources for raw materials, supplies, and components, and are often able to acquire component parts and materials on a volume discount basis (U.S. Securities Exchange Commission 2011).

As the smartphone industry boomed beginning in 2007, Microsoft struggled to keep up with its rivals Apple and Google in providing a modern smartphone operating system. As a result, in 2010, Microsoft revamped their aging flagship mobile operating system [OS], Windows Mobile, replacing it with the new Windows Phone OS. This was a change in strategy in the smartphone industry. Microsoft is now working closely with smartphone manufacturers to provide a consistent user experience. In May 2012, Microsoft released the next generation Windows 8 software designed to power devices ranging from tablets to desktop computers (AFP Relax 2012).

Empirical Creativity [Somewhat Agree].

Microsoft (Kate 2005) has long been known as a company that tightly controls all aspects of its marketing and communications with customers, business partners, analysts, and the media. In the mid section of our study, Microsoft made efforts to change its image and develop a more open marketing culture. The fact that they reached out to the media and analyst community to discuss the change was news in itself. Internally they changed the way engineering and marketing work together to create a more cohesive and seamless product development process. This process was initially used in three projects: new versions of Office, Visual Studio, and Exchange.

Most of Microsoft's software products and services are developed internally. Internal development allows them to maintain competitive advantages that come from closer technical control over their products and services (U.S. Securities Exchange Commission 2011). This also gives them the freedom to decide which modifications and enhancements are important and when they should be implemented. They strive to obtain information as early as possible about changing usage patterns and hardware advances that may affect software design. Before releasing new software platforms, they provide application vendors with a range of resources and guidelines for development, training, and testing.

Level 5 Ambition [Neutral]. When Bill Gates, Chairman of Microsoft, announced his intention to step down in July 2008, he stressed that he was not retiring but just making a transition (BBC News, 2006). Even though he no longer would be the chair in two years' time, as chairman he intended to maintain a key role in advising the firm. In 2008, he had assumed the title of chief software architect and stayed on as company chairman; Steve Ballmer took over as chief executive (U.S. Securities Exchange Commission 2011).

In the 1990s, critics began to assert that Microsoft used monopolistic business practices and anti-competitive strategies. This placed unreasonable restrictions on the use of its software. Both the U.S. Department of Justice and European Commission found the company in violation of antitrust laws. Many forms of litigation continued throughout the period of our study. There were eighteen separate incidents from the time period of 2002 to 2006.

One of Microsoft's business tactics, described by an executive as "embrace, extend and extinguish," initially embraces a competing standard or product; extends it to produce their own version which is incompatible with the standard; and, in time, extinguishes competition that does not or cannot use Microsoft's new version (Rodgers 2008). Various companies and governments sued Microsoft over this set of tactics, resulting in billions of dollars in rulings against the company. Microsoft claimed that the original strategy was not anti-competitive, but rather an exercise of its discretion to implement features it believes customers wanted.

In Research Question 1, we proposed that Microsoft stopped the use of GBC practices based on our financial analysis. However, our examination of the four practices did not provide enough evidence to confirm the proposition.

Research Question 2: Did Apple Start Using GBC Practices?

From the period of 2002 to 2012, we noted a steady progression of improvement in Apple's Fanatic Discipline and "Productive Paranoia" and a relatively stable set of "Empirical Creativity" activities. However, in "Level 5 Ambition" there was mixed evidence due to questions about Steve Jobs' performance, as well as the introduction of products such as the iPad. Table 7 depicts the four practices and the corresponding set of activities.

Fanatic Discipline [Somewhat Agree].

Apple's leadership has been pervasive (Mirchandani, *The New Technology Elite: How Great Companies Optimize Both Technology Consumption and Production* 2012). Traditional supply chain disciplines like managing an extended network of contract manufacturers and component suppliers are fully in force, but beyond the areas Apple has led in at least two vital ways. The first is in its advantage of the digital supply chain. By fostering the development of a secondary market in applications for its iPhone, the company has shown again (as with iTunes) that consumer product revenue growth with zero inventories is not only possible, but also repeatable. The other area in which Apple's supply chain leadership is increasingly relevant is in the retail experience. As one of a handful of extremely vertically integrated brands, Apple's retail chain achieves almost unimaginable success in its stores.

Productive Paranoia [Somewhat Agree].

Apple has built a retail store chain that is the envy of even long-time retailers (Mirchandani, *The New Technology Elite: How Great Companies Optimize Both Technology Consumption and Production* 2012). It has built an elaborate global network of suppliers and contract manufacturers that has confused the traditional accounting that economists use to determine global trade. In addition to the elaborate physical supply chain, it has had to integrate the digital supply chain as iPhones are activated via iTunes at customer homes and via carriers. As it rolls out its iCloud, it has built one of the biggest data centers in the world. It has built an ecosystem of apps and games around its products at a never seen before scale. Admirably, it built its supply chain in a much more volatile industry than that of consumer products or chemicals. Of course, Apple has itself driven the high-tech industry volatility with its own pace of product introductions. Dell used to be regarded as a benchmark of efficiency with its "build-to-order" supply chain. It manufactured most of the order content and even paid in advance. Apple raised the bar by showcasing a new product, guesstimating likely demand, and tuning its supply chain day-by-day and hour-by-hour. It broke traditional rules of demand forecasting because there was little historical data from which to forecast for a version 1.0 iPod or iPhone or iPad. It balanced the risk of overproducing or increasing buffer inventory and taking write-offs versus under-producing and losing customers to the next competitive product. It took that risk time and again, and made the

rest of the industry do the same. In addition, the risks are not insignificant when talking about three million iPads in their first quarter of introduction.

Empirical Productivity [Somewhat Agree].

One example of Apple's creativity was the introduction of the Apple store. Apple is the most successful retailer in history, with an incredible \$50,000 in sales per square foot in their best stores (there is no close second) and roughly \$13 billion in revenue in ten years. For the Apple stores to succeed, they had to convey the Apple ideal of creative exploration and self-expression. That meant that stores had to look beyond just moving product to changing customers' lives by actively helping them express their creativity. The stores were envisioned as places where consumers could test-drive Apple products and learn the "digital arts" of using those products; where they could join Apple retail employees and other consumers in a real-life, brick-and-mortar, non-virtual community. Steve Jobs saw the stores as places that could best succeed—really, could only succeed—if they strove to inspire greatness in everyone who walked through the door.

According to Collins (J. Collins, *The Most Creative Products Ever* 1997) if you want to build an enduring great company, don't make the mistake the leaders of Apple Computer made in the late 1980s. After the remarkable success of the Macintosh computer and the departure of Steve Jobs, Apple's leaders spent their time trying to come up with the next insanely notable innovation. Instead, they should have spent their time being social inventors, designing an environment that would be the seedbed for many insanely significant innovations over decades to come. Upon his return to Apple, Steve Jobs changed both himself and ultimately Apple. He focused on what to do when your current product line becomes obsolete, and building a unique culture that could not easily be copied. Ultimately, he experimented with social inventions. Apple was fast becoming part of the next wave of enduring great companies being built not only by technical or product visionaries but by social visionaries—those who see their company and how it operates as their greatest creation and who invent entirely new ways of organizing human effort and creativity.

Level 5 Ambition [Somewhat Agree]. Steve Jobs famously refused to release a new Apple product, or even a product enclosure, until it was as close to perfection as possible. Yet, no one

allowed perfectionism to paralyze Apple's creative processes. Depending on the form it takes, perfectionism is not necessarily an impediment to creativity. A growing body of research in psychology has revealed that there are two forms of perfectionism: healthy and unhealthy. Characteristics of what psychologists see as beneficial perfectionism include striving for excellence and holding others to similar standards, planning, and strong organizational skills. Healthy perfectionism is internally driven in the sense that it is motivated by strong personal values for things like quality and excellence (Steve Jobs). Conversely, unhealthy perfectionism is externally driven. External concerns come up over perceived parental pressures, need for approval, a tendency to ruminate over past performances, or an intense worry about making mistakes (not Steve Jobs). Healthy perfectionists exhibit a deep concern for these outside factors.

Leaders who excel despite an uncertain environment tend to turn first to "empirical evidence, empirical experience, and empirical data rather than immediately seeking what experts or others advise them to do," Collins says. This hands-on approach "often leads 10Xers to highly creative outcomes, since the outcomes are based on empirical validation" (Grams 2011). He points to Apple founder Steve Jobs, who risked much of his company's success on the iPod. "You'd think it was this big creative thing that came out of nowhere," says Collins. "It was not. ... The MP3 was already out in the world, and [Apple employees had] made an iPod for themselves. The company fired what we call 'bullets' in taking small empirical steps to verify the concept, and then they went big with it."

In Research Question 2, we determined that Apple started using the GBC practices based on our financial analysis. Our assessment of Apple's use of the four practices confirmed the proposition.

4. CONCLUSIONS

Overall, we conclude that GBC has sound advice for companies. Given the life cycles of organizations, products and industries there is an ebb and flow that is evident in the financial bottom line. However, in GBC Collins and Hansen attempted to explain what some of these ingredients might be in the form of practices. Our approach to the study replication and extension was rigorous and required extensive subjective

analysis. In our selection of Apple and Microsoft, we focused on a single pair in a dynamic industry.

There is a tendency among academicians to dismiss whitepapers, practitioner publications, and web-based articles as not meeting the rigorous standards required for academic journals. Collins' works demonstrate the value of combining financial and practitioner analysis.

In our paper, we applied Collins' and Hansen's techniques to see if the practices they identified apply beyond the dynastic period of identification and to companies who adopt the practices. Does the momentum continue, or as in the case of Apple versus Microsoft, does performance and practice change over time. One final caveat: eleven years is a long time in the technology industry. Collins did examine the companies in his study on a year-by-year basis but summarized/coalesced his findings in a binary fashion. Our practitioner analysis attempted to replicate this process wherein we showed a succession of significant events that tempered our determinations.

Microsoft reduced their use of GBC practices. The decline of Microsoft may be based on moving away from GBC practices. For example, the change in leadership or perhaps the proliferation of products, many of which were cannon balls being shot after the battle was almost over (e.g. the entry of Bing into the search engine was dominated by Google) cost Microsoft over \$2 billion in losses. For Apple, that started using the practices, their performance improved. The adoption of GBC practices for an organization is best depicted by the resurgence of Apple. Isaacson (Isaacson 2011) narrates the ebb and flow of Steve Jobs from his formation of Apple, the release and success of the Macintosh, the deviation from fanatic discipline, the learning at Pixar, and the return and re-vitalization in the four-product business plan.

Apple had changed (Arthur 2012). From just under 10,000 full- and part-time staff in September 1998, it has grown to being 50,000 strong, with around 30,000 in its retail store chain. The core of the company remains small and relatively tight-knit. On August 9, 2011, Apple's market capitalization briefly rose to \$341.5 billion, edging it just ahead of Exxon, until that morning the highest-valued company in the world. The company Steve Jobs had co-created assembling computers, the one that Michael Dell had suggested shutting down 14 years earlier

because it had no future, was now worth more than any other. The stock fell back by the end of the day, but it had made its mark; the transformation of Apple from financial basket case to ruler was complete. At the end of the day, it was worth \$346.7 billion; Microsoft was worth \$214.3 billion (Elmer-Dewitt 2013).

The rivalry with Microsoft still flickers occasionally, but strategically they virtually ignore each other. Apple has won in music. Its position in phones and tablets has pushed Microsoft to playing catch-up, yet Microsoft can still rely on its sheer heft of 1.5 billion PC installations to ensure a stream of replacements and new sales for Office. Apple's reputation has been transformed from a put-upon, also-ran PC maker to world-spanning design brand.

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Editor's Note:

This paper was selected for inclusion in the journal as a CONISAR 2013 Distinguished Paper. The acceptance rate is typically 7% for this category of paper based on blind reviews from six or more peers including three or more former best papers authors who did not submit a paper in 2013.

Appendix

	Total Price Return % and Times Better					
	GBC (1991-2001)			Update (2002-2012)		
	Percentage Change Last 11 Years GBC	Times better than S&P 500	Times better than Comparison Company	Percentage Change	Times better than S&P 500	Times better than Comparison Company
S&P 500 Index	319			54		
Microsoft	5280	12.8	42.7	-6	0.6	
Apple	26	0.3		4510	29.9	48.8

Table 2. Total Price Return Percentage Comparison

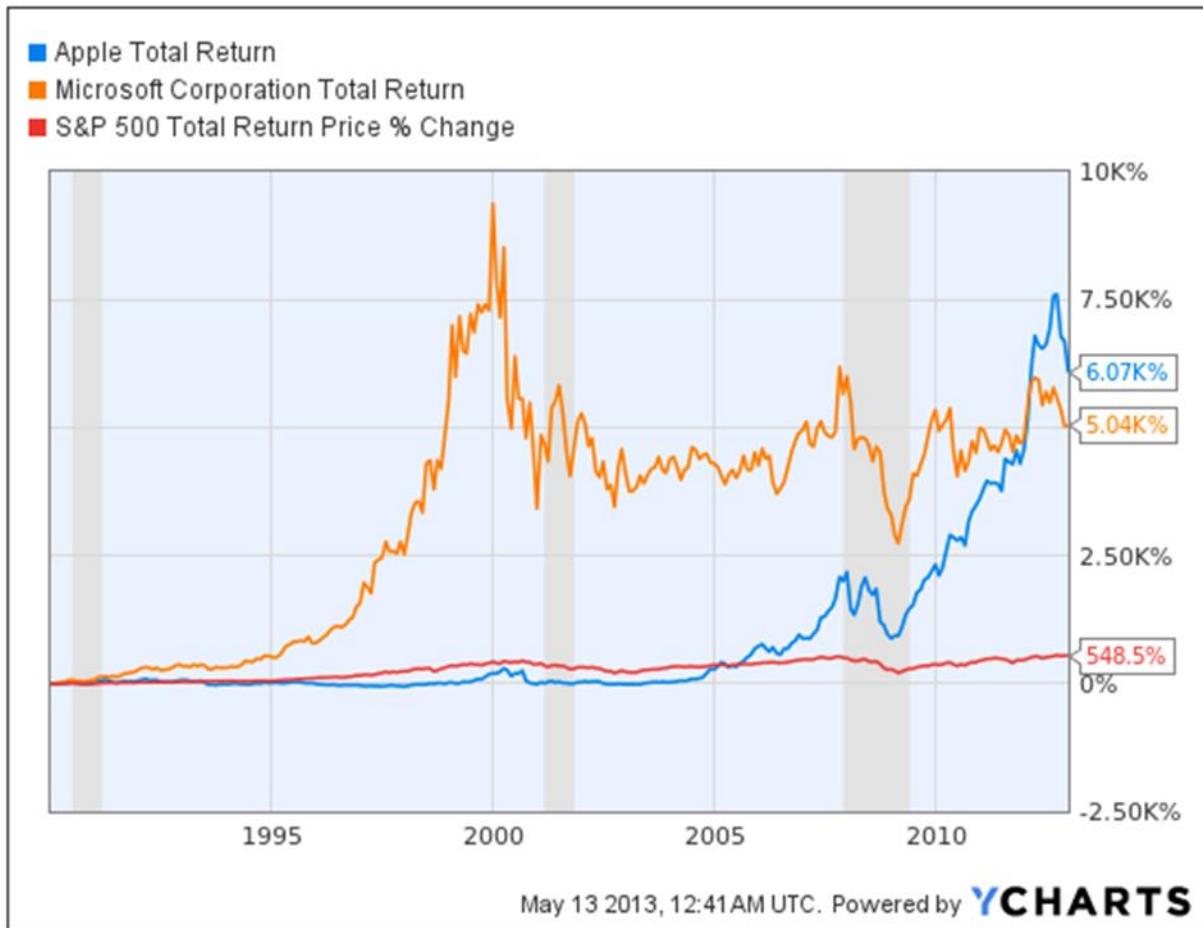


Figure 1. Total Return Microsoft vs Apple

Current Ratio and Debt/Equity Ratio

	GBC (1991-2001)		Update (2002-2012)	
	Avg Current Ratio	Avg Debt/Equity Ratio	Avg Current Ratio	Avg Debt/Equity Ratio
Microsoft	3.57	0.00	2.74	0.06
Apple	2.42	0.30	2.39	0.01

Table 3: Median Current Ratio and Debt-to-Equity Ratio

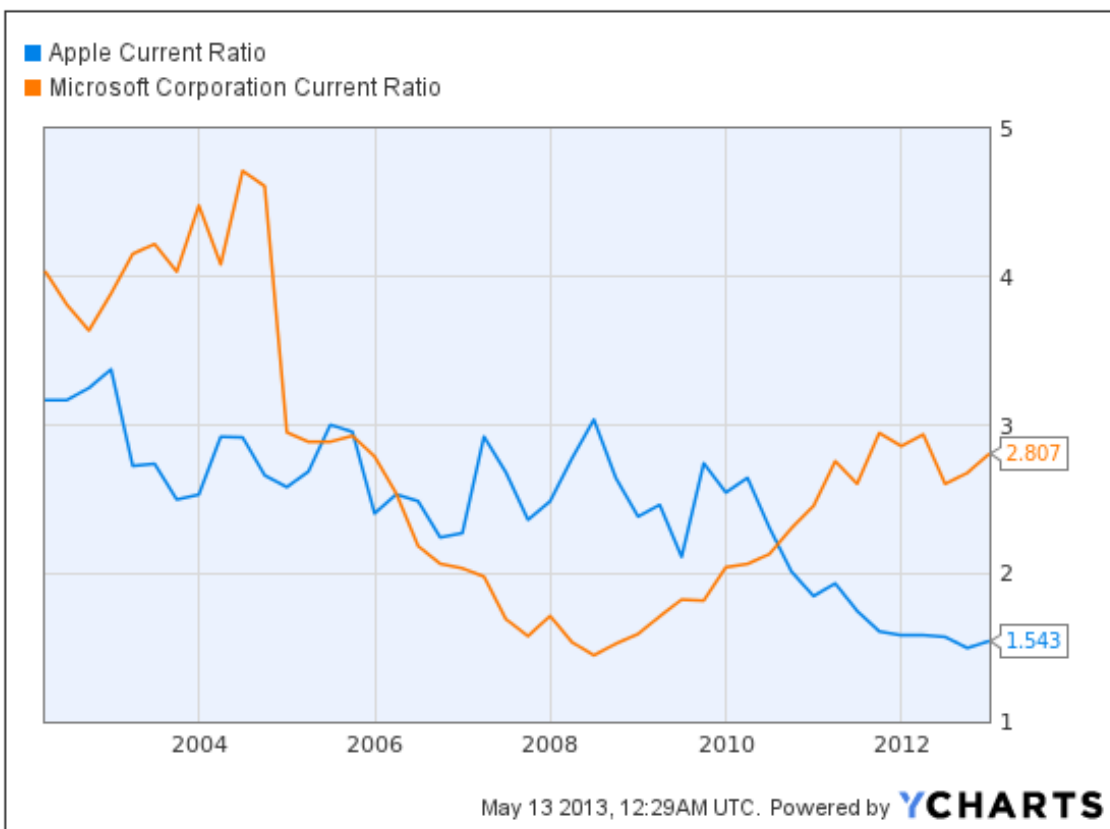


Figure 2. Current Ratio Microsoft vs Apple

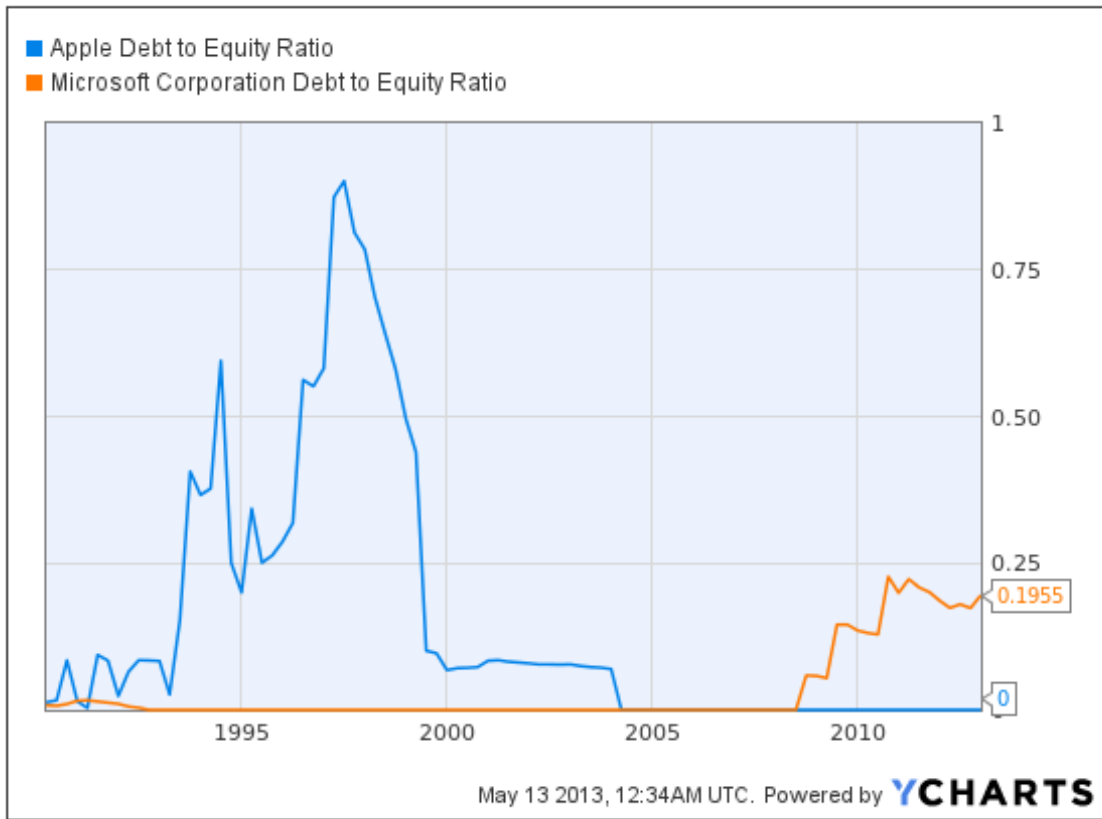


Figure 3. Debt to Equity Ratio Microsoft vs Apple

Research Question	Financial Observations		Practices Observations (according to Literature)					GBC practices (per Literature) (Agree/Disagree)
	Company	GBC Practices (per financial analysis)	Fanatic DISCIPLINE	Productive PARANOIA	Empirical CREATIVITY	Level5 AMBITION	Summary Practices	
1	Microsoft	Stopped using	4.4	3.3	5.3	3.6	4.2	Neutral
2	Apple	Started using	5.0	5.4	5.4	4.9	5.2	Somewhat Agree

1	Strongly disagree
2	Disagree
3	Somewhat disagree
4	neutral
5	Somewhat agree
6	agree
7	Strongly agree

Table 4. Proposed GBC practice usage update period 2002-2012

Practice	Analogy	Description
Fanatic Discipline	[The 20 Mile March]	Consistent execution without overreaching in good times or underachieving in bad times. (1) the discomfort of unwavering commitment to high performance in difficult conditions, and (2) the discomfort of holding back in good conditions. GBC leaders and companies demonstrate the discipline to
Productive Paranoia	Leading above the Death Line	Learning how to effectively manage risk so that the risks your organization takes never put it in mortal danger.GBC leaders continuously scan the environment "zoom out" mode and then "zoom in". This puts specific plans and resources in place to cover lower probability eventualities if the effect is potentially devastating
	Return on Luck	"The critical question is not whether you'll have luck, but what you do with the luck that you get.
Empirical Creativity	[Firing Bullets, Then Cannonballs]	Unique ability to collect and analyze their own data. GBC companies are data driven - testing concepts in small ways and then making adjustments rather than placing big, unproven bets. But then placing big bets when you have figured out exactly where to aim.
Level 5 Ambition		Ambition for the success of the organization rather than self -- many of those classified in this group displayed an unusual mix of intense determination and profound humility; often having a long-term, personal sense of investment in the company and its success, cultivated through a career-spanning climb through the company's ranks. Personal ego and individual financial gain are not as important as the long-term benefits to the team and the company

Table 5. Great by Choice practices.

Year	Acquisitions	Infrastructure	Personnel	Philanthropy	Litigation	Financial	Recognition/ Presentations
2002	4				4		
2003	2	1	0	0	3	0	0
2004	2	0	0	0	5	0	0
2005	7	1	0	0	3	0	0
2006	11	2	2	0	3	0	0
2007	8	1	3	1	3	3	3
2008	16	1	0	0	0	1	0
2009	6	1	0	0	0	1	0
2010	3	2	1	0	0	0	1
2011	3	0	1	1	0	3	2
2012	2	1	0	1	0	1	0
	64	10	7	3	21	9	6

Year	Fanatic DISCIPLINE	Productive PARANOIA	Empirical CREATIVITY	Level5 AMBITION
2002	10.0	7.3		
2003	7.5		7.0	
2004	7.0	7.0		
2005	9.0	6.0	8.0	8.0
2006		5.3	8.5	10.0
2007		5.0		
2008		5.0	9.0	5.0
2009	7.0	7.0	8.0	5.0
2010	8.0	5.5		
2011	4.7	7.6	10.0	5.0
2012	6.3	6.3		5.0
	74%	62%	84%	63%

Table 6. Microsoft Four Practices and Considerations

Year	Acquisitions	Infrastructure	Personnel	Philanthropy	Litigation	Financial	Recognition/ Presentations
2002	2	4	2	1	1	6	4
2003	0	2	2	2	0	5	3
2004	0	3	2	0	0	4	2
2005	0	2	1	1	0	5	1
2006	0	3	2	0	1	4	1
2007	0	2	2	0	0	4	1
2008	0	5	2	0	0	4	2
2009	0	0	3	0	0	5	1
2010	0	5	2	0	1	4	2
2011	0	0	3	0	1	5	3
2012	0	1	2	0	1	3	2
	2	27	23	4	5	49	22

Year	Fanatic DISCIPLINE	Productive PARANOIA	Empirical CREATIVITY	Level5 AMBITION
2002	6.67	7.68	8.93	
2003	8.5	8.4	8.7	8.0
2004	6.3	7.1	7.6	7.0
2005	8.4	7.3	7.8	6.0
2006	8.8	8.1	8.5	
2007	6.6	7.8	7.8	9.5
2008	8.2	8.8	7.7	
2009		8.8	9.2	
2010	10.0	9.4	9.6	10.0
2011	10.0	9.8	8.8	5.0
2012	10.0	9.8	9.7	
	84%	84%	86%	76%

Table 7. Apple Four Practices and Considerations